

PSSD in China: research on the current situation and design for the future development

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ABSTRACT / EN

Since 2016, Chinese government had regarded innovation and design as two important national strategies. At the same time the government launched a series of guiding reports and policies, advocating that traditional Chinese manufacturers should conduct the servitization of manufacturing and traditional service industries should realize modernization as soon as possible. More and more enterprises were aware of the importance of changes and potentials of design, recruiting more designers or paying more on design consultant companies than before. Therefore, as a new design discipline focus on system innovation and design, PSSD has possibilities to fulfill the needs of both government and industry. To Chinese designers, development of PSSD is a good opportunity to them as well.

However, to PSSD, the recognition of Chinese people is limited. Recently, PSSD was only known among a small circle in China, even if lots of people actually have done many things related to PSSD. A good example is a very popular concept called “new retail”, whose concept is similar with PSSD although it only was used in retail industry. So, PSSD in China is a topic worth to be discussed and developed. What is the current status of PSSD in China? What are possibilities of PSSD in China? What Challenges is PSSD facing or would face in China? And how to develop it? These questions are about to be answered in this thesis.

The interview was the key method used in research. The interviewees consisted of potential stakeholders such as designers, professors, entrepreneurs, managers and governors in government. The related books, papers, cases or websites mentioned by interviewees were collected as extensions. The research outcomes, results came primarily from perspectives, experiences and insights given by interviewees. Then according to the results, a design concept for PSSD development in China I proposed, aiming to link PSSD to academic, industry and government, to form a PSSD network and an eco-system to facilitate the development of PSSD sustainable and continuously.

KEYWORDS: PSSD, Current Status, Design for Development, In China

ABSTRACT / IT

Dal 2016, il governo cinese ha considerato l'innovazione e il design due delle strategie nazionali più importanti. Allo stesso tempo, il governo ha lanciato una serie di relazioni e politiche di riferimento, sostenendo che i produttori tradizionali cinesi dovrebbero condurre la servitizzazione della produzione e le industrie di servizi tradizionali dovrebbero ammodernarsi prima possibile. Sempre più aziende erano consapevoli dell'importanza dei cambiamenti e delle potenzialità del design, reclutando più progettisti o investendo di più su società di consulenza progettuale rispetto a prima. Pertanto, come nuova disciplina focalizzata sull'innovazione e sul design del sistema, PSSD ha delle possibilità di soddisfare le esigenze sia del governo, sia dell'industria. Lo sviluppo del PSSD è allo stesso tempo una buona opportunità anche per i designer cinesi.

Comunque, la popolazione cinese riconosce il PSSD in modo limitato. Di recente, il PSSD era conosciuto solo a una piccola cerchia di persone in Cina, anche se molte persone hanno effettivamente realizzato molti progetti legati al PSSD. Un buon esempio è un concetto molto popolare chiamato "new retail", il cui concetto è simile al PSSD, sebbene sia stato usato solo nell'industria della vendita al dettaglio. Quindi, il PSSD in Cina è un argomento che merita di essere discusso e sviluppato. Qual è lo stato attuale di PSSD in Cina? Quali sono le possibilità di PSSD in Cina? Quali sono le sfide affrontate o che dovrebbe affrontare il PSSD in Cina? E come svilupparlo? Queste domande saranno discusse in questa tesi.

L'intervista è stata il metodo chiave utilizzato nella ricerca. Gli intervistati comprendevano potenziali stakeholder come designer, professori, imprenditori, manager e uomini di governo. I relativi libri, documenti, casi o siti web citati dagli intervistati sono stati raccolti come estensioni. I risultati della ricerca provengono principalmente da considerazioni, esperienze e approfondimenti forniti dagli intervistati. Quindi, in base ai risultati, è stato proposto un concept di progettazione per lo sviluppo del PSSD in Cina, con l'obiettivo di collegarlo a livello accademico, industriale e governativo, per formare una rete e un ecosistema per facilitare lo sviluppo di PSSD in modo sostenibile e continuo.

PAROLE CHIAVE: PSSD, Stato attuale, progettazione per lo sviluppo, Cina

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1. INTRODUCTION



1.1. Background

Every people know China is a typical manufacture-based country. A huge numbers of factories are located in different parts of China and countless manufacturing workers are making a living in manufacture industry. “Made in China” has become a brand that is famous over the world (Figure 1.1). Nevertheless with the progress of time, according to BBC report in 2016, a crisis for Chinese manufacture industry had emerged. The first problem is “people”. In 2010, 14 manufacture workers who worked for Foxconn jumped to death because they cannot bore the different kinds of stresses in factory. This incident sounded the alarm for the whole Chinese manufacture industry. Many manufacturers started to care more about the experience of their workers. They paid more and more money for workers at the same time balanced the workload for releasing the work stress. Based on the report from Oxford Economics in 2016 (See figure 1.2), nowadays the cost of one worker in China has been three or four time as much as 8 years ago. Compared with the USA, the advantage of human costs has been reduced to 4%. This means, for reducing manufacture cost, the Chinese manufacturer cannot just only think of the usage of cheap labor force any more, but thinking beyond, for example, combining new information and technology, optimizing staffing, and framing a advanced resource-saving manufacture system.

Innovation and branding are other two big issues for Chinese manufacturers. One of my interviewee, a CEO of a Chinese textile manufacturer, said to me frankly, most of the Chinese manufacturers earned money mainly relying on OEM production or copy production. The capabilities of innovation and design were lack. This led to the competitive disadvantage on product and thus there were no high profit to support the sustainable development. Meanwhile, the insufficient consciousness of brand resulted in the competitive disadvantage in terms of market. Some Chinese first well-known brands can lived well through low-price strategy, but once the first well-known international brands reducing the price, they still would be hard to find a position in market. They cannot won advantages whatever in aspect of design or service, sometime these Chinese first well-known brands only continued to decrease the price to seize the share of the market of second



Figure 1.1: Source: <http://blog.tuforming.com>

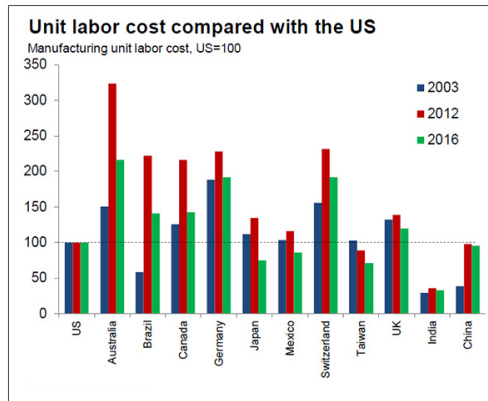


Figure1.2: Source: Oxford Economics

brands. Second brands thus adjusted the price downwards as well to seize the share of the market of third brands. Destructive competition of the price was a common phenomena in China and limited the positive development of innovation and branding which formed a vicious circle in manufacture industry.

As recently the Chinese government strengthened the supervision of environmental protection, the most of Chinese manufacturers who had no awareness of environmental protection were affected to various degree. For example, at the end of 2013, almost all the electroplating factories in Shunde (a Chinese area) were required to close and adjust, because they did not meet the standards of electroplating and effluent discharge. Now with the increasingly stringent monitoring, it is estimated that there are no electroplating factories in the developed areas of the Pearl River Delta in 5 years. All of them will be moved to remote areas. The electroplating production costs would have 5% raises. Therefore, to management layer of manufacturers, in addition to people, product innovation and branding, they also need to take sustainability into account. This issues drive them to rethink the whole manufacture system and to pursue a methodology to update the system.

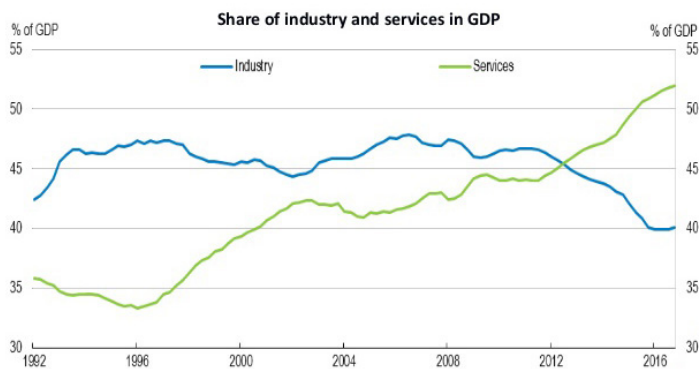


Figure1.3: Source: National Bureau of Statistics China

National Bureau of Statistics of China indicated that in 2017 (Figure 1.3), the added value of the service industry was 4,270.22 billion yuan, accounting for 51.6% of the country's GDP; the growth rate of the service industry was 8.0% over the previous year. This means China is experiencing a fast transition from manufacture-oriented economy to service-oriented economy. In China there are some cases that can be regarded as good example in service industry, such as bike sharing, Alipay, express delivery and so on, but viewing the situation as a whole, problems in service industry are more obvious.

Compared with western countries, China has not built a sound service system and principle. Chinese government, enterprises, organizations and individuals lack the understanding of service value. Almost of them do not know what is service philosophy what is service awareness, which affects the construction of positive service culture. Besides, the weak innovation capability enable many Chinese service-oriented companies to loss the market competitiveness in the global. Thirdly, because of the low level of the urbanization, China has a serious problem in terms of unbalanced development between urban and rural area (Figure 1.4). Most of the time people who are living in villages cannot enjoy the as balanced services and public welfare as urban families. Consequently, to Chinese modern service industry, it is necessary to cultivate an innovative and moral service culture, through the design of service system and strategy.



Figure1.4: Unbalanced urban / village public service in China
Source: <http://news.ifeng.com>

1.2. The Possibility of PSSD in China

In past 20 years, design in China is transferring from serving only for traditional manufacturing industry to for tertiary industry in terms of financial industry, tourist industry, insurance industry, entertainment industry and so on. The role of designers plays is also shifting from beautifying tangible things based on its function and enabling them to sell well in market to considering intangible things like service and interaction for enriching customer experience, managing better stakeholders relationship and promoting the brand image of company. The meaning of design has been of diversification compared with before, which drives more and more Chinese to realize that the design industry has been an indispensable component of industry chains which could make a difference to future Chinese economy and society.

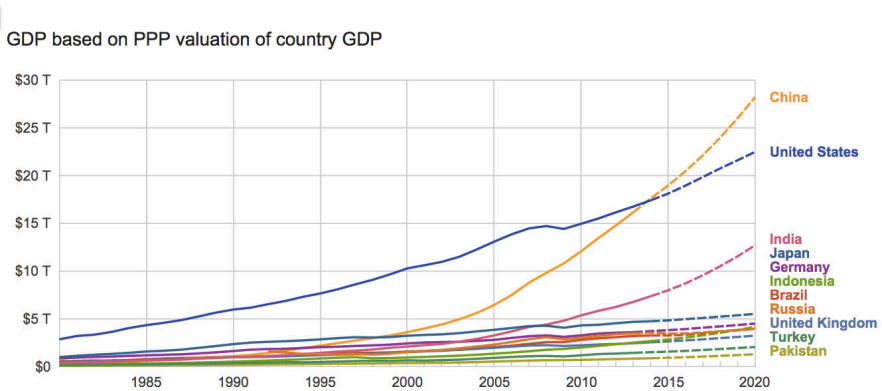


Figure 1.5: Source: IMF WEO Chart June 2015

World economy is shifting from the manufacture-oriented economy to service-oriented economy. As the centre of manufacturing industry of world and a country with the second highest GDP currently (Figure 1.5), in 5-10 year, when Chinese economic structure move fully to service-oriented economy, the model of development and changes of structure of industries which can have economic and social impact to global will definitely become the focus of the world. Thus the emerging design subjects: service design, product-service system design, have drawn the attention of lead Chinese enterprises. Especially among enterprises of internet industry such as Alibaba or Tencent who are developing top internet service by a series intangible service and tangible products combined with advanced technology, the thinking and method of product-service system design has been applied into practice partly or integrated into the development and design process in alternative way.

In China, social problems are serious because of the high-speed social transition and development. And, at the same time, the growth potential of social problems is great. (Wu Zhongming, 1997). In these problems, the environmental problems, urbanization, and aging population are especially obvious (Figure 1.6). Social innovation based on people's life has been regarded

as one of great solutions for these challenges. More and more social innovation projects that focus on special crowd such as the old and the disabled have been practiced by related organizations and companies, having a considerable influence not only in Chinese society. Obviously, the knowledge of product service system design has been applied by Chinese people naturally even if this subject did not be formed well in China. Thus, clarifying what is product-service system design for Chinese and making a principle of PSSD that fit for the situation of China could create many positive possibilities for not only Chinese future but global future.



**Environmental
Problems**



**Aging
Population**



Urbanization

Figure1.6: 3 main social problems in China
Source: <http://www.lancaster.ac.uk/social-futures/2017>

1.3. Why this Research?

Nowadays, in campus of polytechnic of Milan, more and more Chinese students who come and learn product service system design. This phenomenon is not only appear in polytechnic of Milan, in other universities, where also launched the course of PSSD, such as Royal College of Art the number of Chinese students is growing. But after graduation, beyond 90% of them chose to back their hometown and find a relative job like user experience design, user interaction design or still industrial design. The people who really contributes to the development of PSSD was few. One reason is in China people do not know the product-service system design. Almost all Companies have no this job for related designer. Another is compared with design knowledge, Chinese people prefer to follow the things like artificial intelligence or share-economy, which could bring the visible profit in short time, but the value of product-service system design is hard to measured. In the context, these students lose the attention to PSSD.

As a student of Product-Service System Design, I was extremely like the design thinking, design process and advanced service design knowledge learned in courses for problem solving and willing to continue this career to get more PSSD knowledge at same time to apply it in practical projects. In China, what I thought is a big challenges, but from another angle to see, it is also a big opportunity. Understanding the Chinese people's behavior and attitude, knowing their potential needs to PSSD, making the principle of PSSD in Chinese context, then clarifying them and promoting the development of PSSD to support solving problems in China is meaningful and a responsibility as a Chinese PSSD student.

2. PSSD - A NEW DISCIPLINE IN CHINA?



2.1. Few People Know PSSD; Someone Know But being with the Suspect Attitude

As a country with deep cultural heritages, China owns broad and profound art culture, craft culture and so on. Nevertheless because Chinese industrialization process was slow, the design culture is kind of lack. When Chinese people talk about design, the first thing into their mind is graphic design, interior design or industrial design. They were not familiar with this word, which made them always cannot identify the difference between art and design. The national label "Made in China" but not "Design in China" is the best reflection that nowadays China has not yet set up a society where is filled with the design culture and innovation culture.

Absolutely, PSSD is as a emerging design discipline, almost no one ever heard of it in China. During studying period in Politecnico di Milano, for projects, I since did some interviews for some Chinese people. These people consisted of students, professors, designers, entrepreneurs, government workers and so on. When I mentioned that do you heard of the product service system design, their answers are totally "no" even if some of them are in design industry and know the service design.

The more disappointing thing is, when I explained patiently for them what the PSSD is and why the PSSD matters, most of them showed an expression of incredulity. They suspected that the value the PSSD could bring, its practical applicability and the necessity of the PSS designers. For example, at last year, for Salone del Moblie, I gave a reception to a Chinese entrepreneur who is a manager of a famous furniture brand in China. When we talked about the product service system design, he just told me that he heard about it and thought this subject is useless in China. The first reason was that the market is not immature; the 2nd was this subject was more theoretical but less useful, he thought in China the business development needed more applicable knowledge or technology such as advanced materials or artificial intelligence but these disciplines with Imaginary theory such as the PSSD; For this thesis, I also had a talk around the PSSD discipline with my previous boss, who was a professor as well as an successful entrepreneur. Because he studied IT in France and then worked in the USA for many years, he also knew about this subject and agree that the product service system should be designed and it would matters in future. However he admitted as the successful practical cases of the PSSD were lack and most of people involving himself had no confidence for this subject. No confidence meant no investment, no investment meant no development.

In short, to view from my experiences, the product service system design now is in almost blank stage in China. Weak design and innovative atmosphere makes Chinese people to be insensitive and unconfident on the new design disciplines. For pursuing the short-term profit, Chinese people care more about the design knowledge in the first and second orders of design such as graphic and industrial design(Buchanan, 2001), but ignore the potential value of the third and forth orders' design which focus on interaction and whole environment such as the service design or the product service system design.

2.2. References and Platforms about the PSSD are Lack and Immature

When entering “product service system design” in Chinese in Google Scholar, there is only one paper which is relative with this subject. The title of it is “Designing for Chinese Social Innovation: Design of Sustainable Lifestyle and Product Service System”, written by Gong MS, who is a doctor graduating from Politecnico di Milano. The more interesting thing is, if searching the original concept “product service system (PSS)” in Chinese in Google Scholar, no relative result would be found. In Baidu Scholar (the biggest Chinese searching engine), the relative papers about PSSD have eight, the papers about PSS have around twenty. Almost of these papers mainly introduced the PSSD or PSS simply and discussed one specific industry from the PSSD or PSS’s perspective, using the existing PSSD or PSS knowledge, but there are no papers focus on the academic and theoretical research on PSSD or PSS disciplines.

Searching results in different Chinese popular searching engines

GOOGLE	GOOGLE SCHOLAR	BAIDU	BAIDU SCHOLAR	SOUGOU	BIYING
97	1	89	6	69	12

Figure 2.1: Searching results (December, 2017)
Source: Google, Baidu, Sougou, Biying

In any searching engine, the numbers of results of the product service system design in Chinese are not beyond ten pages (Figure 2.1). These results even include questions people asked in some platforms, such as “what is the product service system design?” or “How to apply the PSSD of Polimi?” As respects publications, 0 Chinese book about the PSSD can be found in DangDang website (the biggest Chinese on-line books shopping website), while there are around 15 different books available about the service design - the similar discipline with PSSD, even if more than half of them are translation version. In the Chinese social medias, such as WEIBO (Chinese twitter) and Wechat, topics or articles in terms of the PSSD are more than results in the searching engines, but still few.



Figure 2.2: Now servicedesignchina.org has become a invalid website
Source: www. servicedesignchina.org

In addition, the number of platforms that can contribute to the development of the PSSD is zero as well. Currently, because the service design developed better than the PSSD in China, the platforms that focus on developing the service design are more, which makes the concept of the PSSD only can be developed or spread relying on these platforms of the service

design. However, almost of these platforms stopped running and updating since two or three years ago, the quality of these platforms are not good as well. www.ervicedesignchina.org is a website which focus on diffusing the knowledge of service design and PSSD made by Qinghua University. It is a bit famous in Chinese service design cycle but today the website is abandoned (Figure 2.2). [service-design-china](http://service-design-china.com) is a typical on-line platform which aimed at learning, sharing and being inspired on how Service Design can have an impact on organizations in China, but the real contents actually just are some links attached to other english website about the service design such as www.servicedesigntools.org. The news in this platform were last updated on Nov 19, 2013 (Figure 2.3). Moreover, without VPN, Chinese people are hard to visit the foreign websites to access some information they hope to know, which means they even cannot use google to search more articles or papers about the PSSD.

Consequently, the product service system design has not entered Chinese people 's field of vision yet. Even if some people have a desire to acknowledge this subject, they cannot find a appropriate way to touch with it.

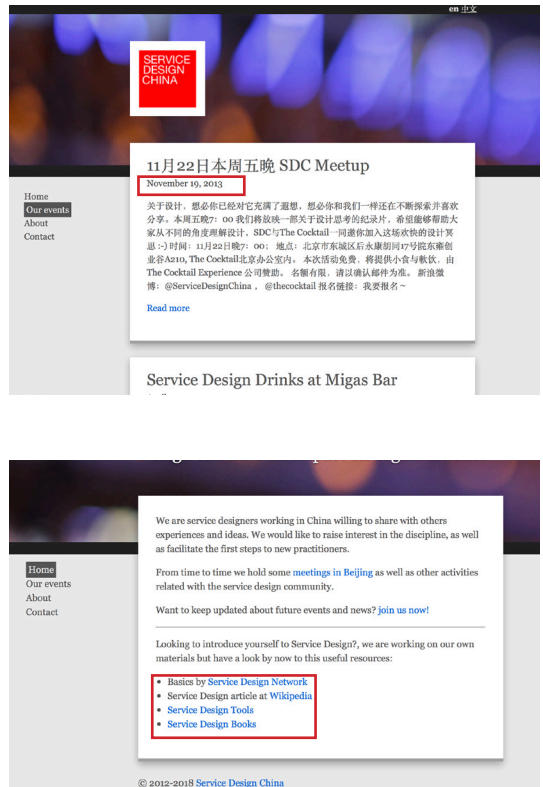


Figure 2.3: Outdated and rough information platform
Source: <http://www.service-design-china.com>

3. LITERATURE REVIEW OF PSSD



3.1. The Concept of the PSS

The term “product-service systems” was first convincingly established in 1999 by Goedkoop et al. (1999). Goedkoop et al. regarded the PSS as “a marketable set of products and services that is capable of jointly fulfilling a user’s need.”. Furthermore, in order to fulfill the customer requirements, the effective and efficient interaction between the products, services, producers or service providers and consumers in the system is quite essential. Speaking otherwise, PSS throws emphasis on the consideration of the use of products but not on the product itself and on the relationships between peoples but not on merely the consumers. With the help of it, the complete ecosystem could be developed for the satisfaction of different needs from different stakeholders in different environments. In addition, PSS deals with the sustainability. A well-designed system involving the products and services always exerts a lower environmental impact as compared with the conventional corporate models (Goedkoop, M., 1999). Accordingly, the PSS can be termed as a systematic perspective or innovation strategy (Manzini, E., & Vezzoli, C., 2003), which is applicable by the Governments, companies, organizations and even individuals for the purpose of pursuing better or new function fulfillment, economic value and social value.

As regards different people, the PSS plays different roles (See figure 3.1). In respect of the consumers, the product-service systems imply a shift from buying products to buying services and system solutions (Mont O, 2002) that is capable of enriching or upgrading their using experience to the maximum consumers’ satisfaction. Together with the mean of solutions, in a sense, the PSS can be an attitude for the prospectively greater life. For instance, in recent times, as suggested by some reports, the consumers are transferring their attention on the environmental issues slowly and steadily; moreover, the sustainability, which is one of the key attributes of PSS, could cater to the consumers’ potential psychological needs for green living. In respect of the producers and service providers, the product-service systems suggest a higher level of attention for the product/service’s full life cycle, the quality management of relationship with customers and partners and the early engagement of the consumers in the design of the closed-loop system. (Mont O, 2002). The benefits that are likely to be introduced by PSS include the economic success with minimized time and resources consumptions, loyalty access from the customers and partner and the competitiveness in the market. In respect of the society, the product-service systems imply the minimum issues as a consequence of the waste of both the social and environmental resources. In the meantime, it is capable of fostering a contemporary design culture possessing potential to facilitate the positive development of innovation.

Despite the fact that the PSS is considered by the people to be a new and useful concept capable of supporting the future development of a company or an organization, other than the companies or organizations that are working in the service sector, yet there are still limited enterprises interested in doing the transition from the original manufacturing company to PSS providers (Beuren, F. H., et al. 2013). The key reason suggests that offering a PSS is associated with consciousness and behavioral changes of all the stakeholders in the system. The PSS providers would assume higher responsibility and risk in terms of time and money for

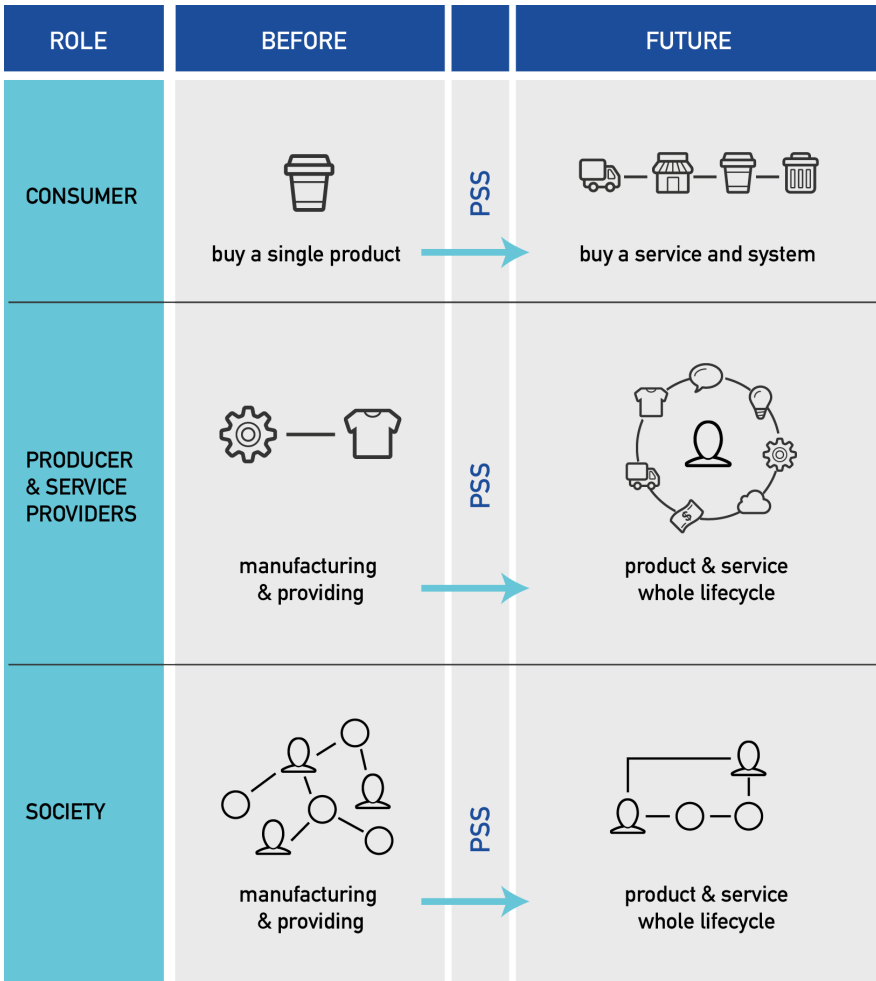


Figure 3.1: Thinking transition to different roles

the implementation of this innovative system. But once the great communication with both the consumers and partners regarding the novel ideas of the PSS is carried out by the providers, followed by identification and use of the system, the stakeholders, products and services would truly bond together. On the bases of that, continued improvement of the supply becomes more convenient to be executed by the better equipped enterprise (Kimita et al. 2009).

3.2. Design for the PSS

As suggested by Richard Buchanan (2001), the design possesses 4 orders (See figure 3.2). The fourth order is the design for the environments and systems. He threw emphasis on the fact that the systems thinking in design field requires focusing on the human systems, the integration of information, physical artifacts and interactions in the living, working, playing, and

learning atmospheres. Speaking otherwise, the key points of environments or system design are the ideas or thoughts of organization of a system or environment and the expression using the symbols or illustrations that make the people capable of personally experiencing a system or environment. The design for the product/service systems is included in this fourth order of the design. It is the consideration for every element in a product/service's complete life cycle. Accordingly, the PSS design requires the designers to organize the tangible products and intangible services into a visible system that is identifiable by the stakeholders, meanwhile catering to their needs.

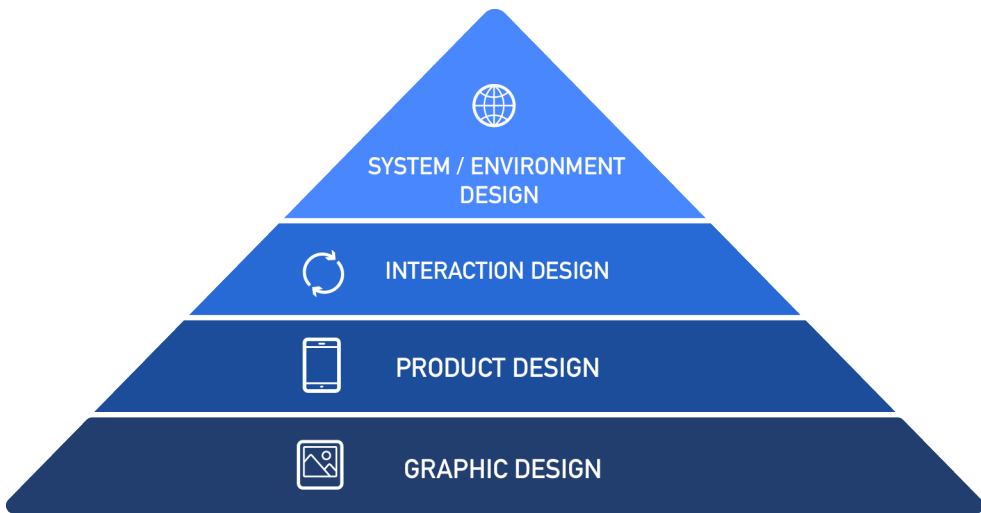
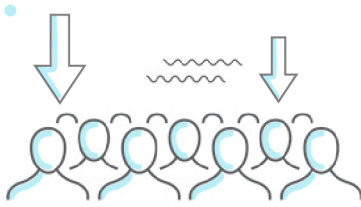


Figure 3.2: 4 orders of design

There are 3 important points that are suggested for consideration in the PSS design process (Morelli, 2006). These points can also suggest the design direction as well as working contents of the PSS designers (See figure 3.3). The first one deals with the identification of the actors involved (companies, institutions and final users) in the network. At this point, the individuals or groups possibly capable of impacting the system or being impacted by the system, together with their various demands require being identified on the basis of the defined analytical frameworks. It is termed as quite important for the fact that it decides the quality construction of the human system, constituting the core element of the PSS design. The second one involves envision of scenarios and use cases, supporting the clarification of the actors' roles, interactions, sequences of action, and physical artifacts that could be put to use in the system. The last one is quite clear and logical representation of design of the PSS by design language, i.e. infographic, and narrative visualization.

Furthermore, PSS is the result of a value co-production mechanism. In the design mechanism, the engagement of both the consumers and partners at the specific stages is considered quite essential for facilitating the acceptance (Mittermeyer et al., 2010)). In addition, as the PSS itself is an inter-discipline, discussing and interacting with the stakeholders from different backgrounds not just benefits the perception of their real demands but also the absorption of the rich knowledge and perspectives that can open designers' mind for the latent future inno-



Identification of the actors and their relationship



Envision of scenarios and use cases



Clear and logical representation by communication design

Figure 3.3: Working contents of PSS designer

vation. Accordingly, the PSS's effectiveness is based on a shared environment wherein the vision of the possible and desirable scenarios can be discussed together.

As a consequence, the PSSD is termed as suitable for application in the complex and changed environments that involve promotion and innovation needs, for instance, construction of infrastructure for the government, and exploration of a new market for an enterprise.

The PSSD, being an emergent design subject, continues facing numbers of challenges. It does not have any particular guidelines or principles for supporting the practical use in the design projects. The specific methodologies and tools, which are capable of offering the guidelines for the PSS implementation, are also quite scarce (Aurich et al. 2010). Together with that, owing to the fact that the PSSD is a design strategy that can be put in various contexts, the difference of fields and culture drives that the PSSD should develop more detailed and targeted design frameworks capable of fitting the specific contexts. Eventually, the real cases of the PSSD are few; moreover, it is not able to completely convince the people to invest their moneys or resources on the design even if the people are aware of its benefits.

3.3. Characteristics Overview of the PSSD

Generally speaking, the PSSD can be regarded as follow:

Experience-oriented design method

The product service system design is a user-centered design. It emphasizes on exploration of values hidden in the relationships and interactions between people and people, people and products as well as people and systems (Yuan, S. T. D., & Hsu, S. T. 2017), in order to generating the brand new user experience, or promoting the user experience. By means of a set of logically, innovative considerations and designs on relationships and then interactions, the PSSD enable all users (stakeholders) can feel physically and spiritually satisfied in the system.



“ EXPERIENCE
-ORIENTED ”



“ WHOLE-
LIFE-
CYCLE ”

Product/service whole-life-cycle holistic design principle

The product service system design is not a design for one people, one product or one service, but a series of designs for a system. The design objects should cover all possible value-added elements in a product or service whole life cycle, including the stakeholders, products, services, support systems, business elements and processes, work flow and interactions (Gokulaet al., 2012). To think and design from the level of the system, people can breakthrough the limited thinking only on one product, one service or one space and then in a new angle to develop more innovative, powerful and sustainable solutions, dealing with nowadays more complex behavioral, social and economic issues.

Co-creation working mode

Similar with the service design, the product service system design proposes people to design in a crossover and co-creation way, which offers more possibilities that design can merge into people’s daily life and the society. In design process, it is necessary to have a engagement of not only designers, producers, service providers but also customers. The PSS designer should regard the customers from as the roles who only can simply receive results (products or services) to as the roles who can take part in the creation process. In PSSD, the customers are



“ CO-
CREATION ”

the partners with designers, producers and service providers, which can benefit for operation of the design, creating higher values for the design.



Sustainability-oriented design strategy

Systemically speaking, the PSSD can lead to the maximum efficiency of a system, though consciously manipulating the different elements in system and then minimizing the potential wastes on resources and energy. A simple but effective product/service system can promote the producing and service efficiency thereby saving cost. Meanwhile, it improves stakeholders' satisfaction, whereby the outstanding brand image and corporate image can be set up, which benefits the sustainability on business. Environmentally speaking, Manzini argue that sustainable or eco-efficient product service system design can assists re-orient current unsustainable trends in production and in consumption practice (2002). Environmental friendly is the social responsibility of governments, enterprises and organizations.

4. RESEARCH METHODOLOGY



4.1. Overview

Obviously, PSSD discipline is strange to Chinese people, but in fact many design methods and design thinking involving in PSSD decline have been used a lot in many fields. Thus, For better understanding the current situation and potentials of PSSD development in China, the interview for elite Chinese people in different fields is necessary. I regarded the interview as the main method in this research because it can provide a deeper understanding of social phenomena than purely quantitative methods, like questionnaires. It offers the chance to generate rich data that can then be analyzed in different ways, which can lead a right direction for the future design.

The purposes of the interview in this research have two: the first one was to have a discussion about PSSD with interviewees to know their reflection. Through the reflections the points (thinking, process, methods and so on) overlapped with concepts of PSSD could be found, the real situation where PSSD placed at in China could be understood. The second was to use conversation as well as questions with interviewees to dig their insight, looking for the potential needs for PSSD and where PSSD could bring added-value. As the semi-structured interviews allows focused, conversational, two-way communication, during the interview periods, in addition to the planned questions, a set of questions based on interviewees' answers were added and discussed, which made the conversation to be more influent and to be easier to get deeper insight.

Face to face interview can enable interviewees be impossible to think for a long time, in the mean time the emotion and expression can be observed, so the answer is often reliable and accurate. Thence, in this research, face to face interviews occupied 90% of all interviews. All these interviews were then complemented by research into the resources related to the interviewees, including the interviewee's projects, articles or mentioned references.

After collecting datas from interview research, insights and research outcomes were taken into consideration, combing the editor's thinking. Finally, according to "the two dimands" map and "5 elements of user experience" map, the design parts expanded.

4.2. Plan of Interviews

4.2.1. Selection criteria for interviewees

PSS knowledge has been thought that it could be useful to 3 uncertain groups. The first is people in company who can apply PSS into business or management. The second is consumers who can accept PSS and to co-create a better eco-system. The last is people who care about environment because PSS could minimize the waste of resource and be of sustainability (Mont, O. 2002). Thus, companies, consumers, governments are 3 key roles who need to be

took into consideration during PSSD development period. PSSD now is at the very being stage in China, its development needs the attentions, researches and practices from some leaders. Consumers can assist a subject's development but cannot lead a development, thus this group are to be excluded among my interviewee targets. Meanwhile, to know the current situation of this new discipline, the voices from design academic and professionals who are as pioneers contributing on its relative researches and practices are important. Therefore, this interview selected the key person who can do the decisions in enterprises, governments and person who had did contribution on development of PSSD. The original plan was interviewing five people respectively from these three groups, totally 14 interviewees, but owing to some reasons, only 2 workers in government accepted my interview.

Enterprises part: Because of the difference of types of companies, the perspectives and attitude of these companies to design definitely are different. For example, Manufacturers may care more about product design, while managers in hotels or banks may pay attention on the service design. The startup company may put the design forward one point such as an app or a website, while large-scale enterprises may see the design as a strategy conducted at every links of corporative operation. The traditional industries may consider the design as a tool assisting industrial transformation or upgrade, while the modern information and technology industries may use the design knowledge to do the more better expression for their advanced science and technology. Therefore, for collecting more and different datas, 6 interviewees I selected are from service industry, startup company, conventional manufacture-oriented company and modern high-tech enterprise with different corporation scales (Figure 4.1). The detailed interviewees' information and the selection reasons are described as follow:

Interviews for Entrepreneurs & Managers						
Name	Title	Organization Name	Method	Duation	Loaction	Date
Shang Guoming	Chief Manager	China Merchants Bank	Face-to-Face	30min	Changzhou	30/1/18
Stella Hua	Sales Manager	Cathay Insurance	Face-to-Face	15min	Shanghai	3/2/18
Ding Yaping	CEO	Changzhou Textile	Face-to-Face	20min	Changzhou	1/2/18
Wu Hanwei	CEO	CapsuleTech	Face-to-Face	20min	Shanghai	2/2/18
Wu Wei	CEO	CynowareTech	Face-to-Face	25min	Nanjing	23/1/18
Mao Yongxin	Chief Manager	Yilong Culture	E-mail	/	Nanjing	20/2/18

Figure 4.1: Table of manager interviewees

- Shang Guoming is a chief manager of China merchants bank in Changzhou city, China. China merchants bank is the sixth-largest bank in mainland China, known as the most influential commercial bank by Chinese people. The services the bank offering for either individuals or enterprises are outstanding in China. Shang has worked in this bank for beyond 20 years. as a regional chief manager, he took part in decision making of bank's strategy design or service development. Thus, he got rich experience in service industry and been with the unique opinions on the design, the service design and even PSSD.

- Stella Hua is an east-China sales manager of Cathay insurance company. Cathay insurance is one of the biggest insurance companies. Hua with her team provide insurance consultation service for different customers everyday, so she always need to manage her service team and customer relationship in some design way. Specially, she had a deep research on the design for interactions with customers.

- Ding Yaping is a entrepreneur who is in charge of a traditional fabric producing factory. This medium-scale factory located in Wuxi is a typical Chinese traditional manufacturer, from the design to production to management system, there are more copies but less innovation. They only relies on large-scale manufacture and then reducing the price to win the competitiveness in market. Accordingly, I hope to know that how Bu think of the current situation as well as the design and what views he have to PSSD.

- Wu Hanwei is as a young novice entrepreneur, just established his a new restaurant and a new company in 2017. His restaurant focus on the user experience design and the service design. Its theme is eating with children together, expecting bring family with a new eating and playing experience. The business of his company is on developing smart car instruments and relevant systems. He hoped to using PSSD helping his company to occupy a position in the market.

- Wu Wei is CEO of Cynoware technology company. His company mainly works on seeking integrated smart solutions for retail by the combination of softwares and hardwares. Wu had a long-term working experience in Silicon Valley thus he respects the designers and emphasizes the importance of "design" and "system" in product developing process.

- Mao Yongxin has his company called Milan innovation design industry company. The company cooperates with Milan's design studios and design schools, contributing on linking the innovative designs of Milan to industries in China. Now, he just is collaborating with design department of Polimi, hoping to apply the advanced design involving product service system design in the new urban district development in Nanjing, China.

Government part: In China, an effective policy is regarded as a guideline that can directly decide one thing's development and as a solution which can solve a society issue. The policy makers and researchers in government play a key role leading the society development. Meanwhile, I believe the policy makers/researchers is similar with product service system designer/researchers, because they both need to provide systemic solutions which can serve organizations or individuals by way of combination and organization of different resources. Therefore, I interviewed some policy makers and governors in Chinese government, they are (Figure 4.2):

Interviews for Policy Makers & Governors (Government)						
Name	Title	Organization Name	Method	Duation	Loaction	Date
Lian Zi	Manager	Policy Research Office of Jiangsu Government	Face-to-Face	30min	Nanjing	25/1/18
Feng Jiang	Director	Urbanization Department of of Jiangsu Government	Face-to-Face	20min	Nanjing	10/2/18

Figure 4.2: Table of policy maker and governor interviewees

• Lian Zi is chief editor working in policy research office of the Jiangsu provincial government. She is responsible for editing the policy researches of Jiangsu province and launching the relevant publications.

• Feng Jiang is a director in policy research office of the Jiangsu provincial government and mainly in charge of the national and provincial policies making and researches for urbanization.

Academic and professional part: In this part, according to the existing books, papers, speeches related to PSSD, I found the scholars, professors and professional designers to do the interviews (Figure 4.3):

Interviews for Professionals						
Name	Title	Organization Name	Method	Duation	Loaction	Date
Xin Xiangyang	Professor	Jiangnan University	Face-to-Face	20min	Wuxi	1/2/18
Gong Miaosen	Professor	Jiangnan University	Face-to-Face	20min	Wuxi	1/2/18
Ding Wei	Chief Designer	Moma Design Studio	Face-to-Face	25min	Shanghai	2/2/18
Hu Hong	Professor	Beijing University of Technology	E-mail	/	Beijing	10/2/18
Chen Fang	Tutor	Istituto Europeo di Design	Video	30min	Beijing	24/1/18
San Guo	BD	ARK Design Studio	Face-to-Face	20min	Shanghai	2/2/18

Figure 4.3: Table of PSSD Professional interviewees

- Xin Xiangyang is a professor and dean for Jiangnan University's School of Design in Wuxi, China. Xin holds a doctorate in design from Carnegie Mellon University with research interests in interaction and service design, cultural studies and product development. He looks at how design, as both philosophic topics and professional skills, contributes to transformations of lifestyles, businesses and societies.

- Gong Miaosen is an associate Professor and associate dean of School of Design, Jiangnan University, where he is also founder and coordinator of DESIS Lab_JU. He is the co-coordinator of DESIS-China network.

- Ding Wei is a founder of Moma design company and vice president of Shanghai industrial design association. He noticed the relationship between design, products, services and systems in his book "Amplified Design". "Design for county" project led by him is an early famous social innovation project in China, promoting the development of many Chinese counties.

- Hu Hong is an associate Professor of department of Industrial Design Beijing University of Technology. She focuses on systematic analysis and trend research based on "industrial design of industry chain" and attended "Industrial Design Participates in the Transformation of Traditional Industries" national project. In her paper and books, PSSD appeared a lot of times.

- Chen Fang, now is a design tutor of Istituto Europeo di Design, was head of the Cocktail Service Design. She has six years experience of marketing, interaction design and service design. Chen is keen to service design and implanting design thinking in creative studies and organizations.

- San Guo is a Business Developer in ARK design studio, also has the design background. ARK design is a famous studio in China focus on local user experience design and service design. Therefore, as a BD, San Guo knows the design trend great and has a rich experience on introducing advanced design knowledge to customers and convincing them.

4.2.2. Interview guide

The interview contents have been divided into three lists of questions based on three types of interview object. For the managers in company, I think the PSSD can tell them and relative workers more about innovative whole-product/service-life-cycle design thinking. Thus, understanding well the situation about how they think of design, how they applied it and their faced challenges is important for deciding where the PSSD could place in Chinese company.

For policy makers and researchers working in government, the aim of interview is to know their working process and what problems they have when they design a policy for people. To government I think PSSD is like a type of design thinking and new working methodology to enable them to work smarter and innovative. As a result, the quality and effective policy could be made. Therefore, the questions in interview are to digging the possibility of PSSD application in their work.

For professionals I would like to know more about the situation and direction of PSSD in China from mouth of these pioneers. Asking what they are doing and is going to do for development of PSSD as well as challenges of the PSSD development in China can support me to design something later to have corporation with them and build a network for PSSD development.

4.2.3. ITV template

FOR ENTREPRENEURS AND MANAGERS:

Design awareness

- *How do you think of design?*
- *Do you think design matters?*
- *Did you applied design in your company?*
- *If Yes, where is the design applied in company? and why? If not, why did you not need the design.*

Challenges

- *What challenges is your company facing?*
- *Did you have some idea to solving them?*
- *If Yes, what were this ideas?*

PSSD awareness

- *Have you ever heard about product service system design?*
- *If Yes, how would you describe it? If not, I will explain what is that.*

(Explanation of PSSD)

- *Do you think If something in your company's product/service development process actually fits the academic definitions of PSSD?*
- *If Yes, what are they?*

Attitude to PSSD

- *How do you think PSSD now?*

Expectation to PSSD

- *Would you use PSSD in your company*
- *If Yes, where will you use it. If Not, why?*
- *Are you willing to learn it more and which way do you prefer to learn?*

FOR GOVERNORS IN GOVERNMENT:**Background**

- *Could you please describe your work in government?*

Working process and methodology

- *Could you tell me how a policy government made in China?*
- *Could you describe the detailed methods and principle in policy making process?*

Challenges

- *Did you meet some challenges or problems in your working?*
- *If Yes, what were they?*
- *If the problems happen, how did you solve them?*

The policies about design

- *Do you know the policies which support the development of the design industry?*
- *If Yes, what are they?*

Design & PSSD awareness

- *How do you think design?*
- *Did you know product service system design?*
- *If Yes, how would you describe it? If not, I will explain what is that.*

Expectation to PSSD

- *Do you think PSSD could help you to optimize your work of policy making?*
- *Do you like to know that? and how?*

FOR PROFESSIONALS:**Perception**

- *What is "PSSD" in your eyes?*
- *What role PSSD should play in design industry?*

Background information:

- *What is the status of PSSD in China?*

Challenges of development:

- *What are the barriers and challenges in the development of product service system design in China?*
- *How do you think to overcome these challenges?*
- *What are the factors of PSSD development.*

Future trend:

- *How do you think of the prospect of PSSD in China?*
- *Currently how do you contribute to development of this subject and how will you do in future?*

4.3. Data Analysis

4.3.1. Data collection

After interview, all recordings were translated into english notes. Then, based on these notes, the valuable information were underlined. These valuable information includes the valuable perspectives which can answer well the main questions of research, mentioned books, papers, speeches and websites that can be read extended to support the research and related case studies that can offer instance analysis and practical certification. The mentioned reference are as bellow:

Books:

< Report of development of Chinese Service Design >, Hu Hong, 2016, Publishing House of Electronics Industry.

< Touchpoint: service design in global context >, Wang Guosheng, 2016, Posts & Telecom Press.

Papers:

< Design for Chinese Social Innovation: A Probe into the Design of Sustainable Lifestyle and Product Service System >, Gong Miaosen, 2011, Creativity and Design(5), 18-23.

< Thinking about the design effect brought by the design of product service system >, Zhang Yuhong, Liu Chunqiang, 2012, Popular Literature (10), 76-76.

< Research on User Research Methods for Product Service System Design >, Ding Wei, Zhang Zhang, Liu Wei, 2014, Design (6): 155-156.

< Development of an innovative food service system based on strategic design >, Peixue, Li Shiguo, Gong Miaosen, 2014, Packaging Engineering, 35(20), 12-15.

Case Studies:

< Freshhema >, < Design for gift shop of Shanghai museum>, < Changhong smart kitchen system design>, < Service system design for Hongkong Pok Oi Hospital >, < DIDI >, < Henglong smart jewelry>

Websites:

<https://www.service-design-network.org/chapters/beijing>

<http://www.desisnetwork.org/courses/jiangnan-university-china/>

<http://www.gov.cn>

4.3.2. Getting insights and research outcomes

Valuable information always have many which express the similar key information. Classifying these valuable information, analyzing, finding the similar key information and then considering these key information combined with individual's thinkings was the whole progress of getting insights. Finally, insights about PSSD situation, possibilities and challenges in China were accessed and written down as final research outcomes. For making sure the authenticity and reliability of research outcomes, the related valuable information were attached.

4.4. Idea Generation and Design Development

After research part, the design part start. In whole design part, "the Double Diamond" mapped out by BDC was the main method for process of design development. The double diamond map is consisted of 4 stages: discover, define, develop and delivery. Combing with my topic of thesis, what I did in different stage will be explained as follow:

Discovery: This stage is equal to the previous research part - noticing the phenomenons, finding valuable information by different resources and gathering insights. Thus I have had enough data to go to the next stages.

Deification: Although in research outcomes phase the situation, possibilities and challenges of development of PSSD in China have been listed and demonstrated very well. But stepping into the design stage, "Behind the research results, which matters most for PSSD development in China?" was considered by me further. This stage is more like a strategy planning stage. Which direction I should go? Which should I act on first? What is feasible under the current situation? In this stage, the key demands to PSSD and key challenges limited the development of PSSD in China was clarified.

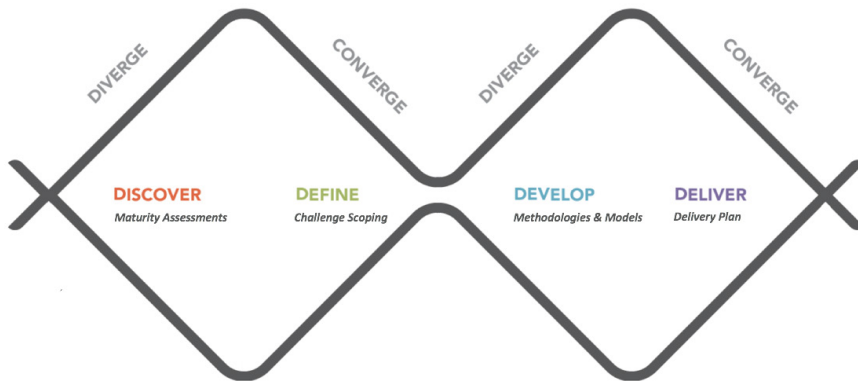


Figure 4.4: "The Double Diamond" Map
Source: British Design Council 2014

Development: "How" is the keyword in the development stage. Brainstorming and discussing with stakeholders happened often in this stage. Different design tools were used such as user experience map, service design blueprint, business model canvas and so on. All of them helped me to generate more and better ideas, to exam the ideas and refine the ideas. The general design concept was defined here with assistance of way of visualization.

Delivery: In the final stage, design concept was transformed into the detailed and tangible solutions. The touchpoints in whole service process were designed great, enabling people to experience in real environment practically. This was also a testing process where I could receive users feedback for further modification.

Apart from "the Double Diamond", in stage of designing digital product (application), the frame of the elements of user experience suggested by Jesse James Garrett (2000) was used as the basic design principle. The product strategy, scope, structure, skeleton and surface were taken into design consideration and communicated step by step.

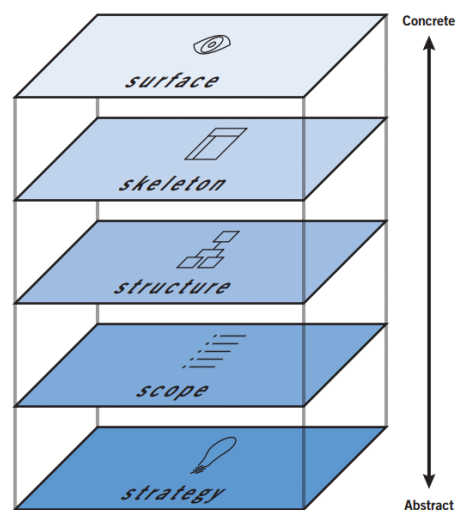


Figure 4.5: "The 5 elements of User Experience" Map
Source: Jesse James Garrett, 2000

5. RESEARCH OUTCOMES



5.1. PSSD Current Situation in China

5.1.1. Government appeals to advanced design discipline

Most of developed countries regard the design as a part of national development strategies. China also realized the importance of design at recent years, starting to making series policies for the design discipline development. For real achieve the “design value”, China has built the national design resource network and database in which all Chinese design companies, designers and design departments of universities are recorded in it. Every year, the government invested much capital in construction of design industrial park and design education. At the meantime, a number of great policies were launched to support the design industry for long-term strategy development.

Every people know China is a large producing country in the world, hence Chinese government like to transfer the conventional impression of “made in China” into the “designed in China”@. Through developing advanced design discipline, they expect to facilitate product and service innovation, to create new industrial ecosystem and to satisfy various consumer demand in order to citizens life quality can be promoted. Chinese “the 12th Five-year Plan” clearly suggested that China need to accelerate the pace of researching and developing the design industry, promoting transit of the industrial design from the simple appearance design to comprehensive advanced design in terms of product, service, system and strategy. For boosting the development of cultural and creative industries and design service industries, meanwhile combining them into the substantial economy, at February of 2014, the Chinese state council published a book which title is “the guideline of developing cultural innovation and design service”. For enabling our country to access the transformation from manufacture-oriented country to service-oriented country, at July at the same year, the state council launched the another guideline for Chinese industrial adjustment and upgrading. At last year, national industry development department, information department and development and reform commission, all three together published “the action guide of development of service-oriented manufacturing”. In addition to national government, more and more Chinese local government also recognized that relying on application of new design discipline such as service design or product service system design, the government departments’ work efficiency could be improved and the relevant service quality for people could be enhanced. Thereby, under the guideline from national council, they took the lead in using service design and product service system design to do something in local areas.

QUOTE

Pro. Gong Miaosen, Jiangnan University

“PSSD and service design attracted the awareness of Chinese government. Because Chinese government has found the importance of innovation and has regarded innovation as the

national strategy of development, Chinese enterprises and universities both are learning and practicing various innovative knowledge and methods covering PSSD in recent decades.”

“Manufacturing service industry is a industry Chinese government like to rapidly develop. Thus I can say more and more Chinese people will view innovation as the core competitiveness in nest decades. I believe whether PSSD or service design, their real values would be accepted by more and more Chinese people in future.”

Lian Zi, Policy Making Department of Chinese Government

“Chinese government require different local governments to strengthen the connection between cultural creativity, design services, equipment manufacturing and consumer goods industries. Promoting the application of creative design elements in the manufacturing of consumer goods is necessary for increasing the added value, and guide consumption upgrades.”

Governments encouraged cultural and design enterprises to cooperate with manufacturing companies in depth, promoting cultural creativity and design services to penetrate into the whole process of manufacturing product production, sales circulation and promotion.”

Feng Jiang, Urbanization Development Department of Chinese Government

“Government advocate the organic coordination of population, resources, environment and development by the effective design, realize the homogenization of urban and rural public services. The designs on products/services, systems and strategies is necessary to access a cluster, recycling, low carbon, ecological and sustainable urban and rural development.”

5.1.2. Academic circles are in exploring stage

Since 2000, the large numbers of academic paper were published which focus on the research of service system in different service industry. In aspect of design, at 2002, Jiangnan University just invited the prof. Brigitte Mager from Technical University of Cologne to open a advanced industrial design program on the theme of “service design”. At autumn, 2008, cooperating with Politecnico di Milano, Jiangnan university held a workshop whose name is “Chita08: mobile communication and collaboration services”, focusing on discussing the social innovation based on mobile communication technology (Figure 5.1). In 2009, on the basis of DESIS Network held by design school of Polimi, Jiangnan university also built up a “DESIS lab” as a branch lab, aimed at setting a platform where service design, product service system design and social innovation could be researched, discussed, taught and practiced. Chinese Tongji university also launched “PoliTong” double degree program with Polimi since 2007, in this program, there have been beyond 200 students from different world who went to China or Italy to learn product service system design knowledge. In 2009, DESIS-China was set up. Six different Chinese famous



Figure 5.1: Photos and students' works in Chita08
Source: <http://dolcn.com>

universities took part in and expected to boosting the advanced design education and research together(Figure 5.2).



Figure 5.2: Projects in DESIS-CHINA networks
Source: <http://www.desisnetwork.org>

In fact of that, the development of service design or product service system design in Chinese context cannot run without the contributions from the Chinese tutors and students who went abroad and engaged in relevant service design or PSSD courses and programs. When these tutors and students back China, they started to translate or write some books, papers about service design or product service system design gradually. Meanwhile, some of them still attended different international design conference for absorbing new knowledge and better and deeper understanding these emerging design disciplines then took them to China. The reason they did like this because they indeed service design or product service system design can benefit on Chinese conventional financial, manufacturing and service industries as well as infrastructure construction and public service development. Consequently, in a manner of speaking, Chinese academic world is still in the beginning stage on research of product service system design. The current result of research is also waited to transfer into the real projects.

QUOTE

Chen Fang, Tutor, Istituto Europeo di Design

“As I know, several famous Chinese design schools such as Qinghua University and Jiangnan University were also paid attention on PSSD and did relative contribution on it. But you also can see the effect of development was not obvious because in fact they did not have a continuous researching or practice outputs for PSSD.”

Pro. Hu Hong, Beijing University of Technology

“With the frequent exchanges between local and abroad universities, the academic community is gradually researching PSSD and service design, expecting to describe its definition more clearly. Several top design schools in China have been systematically researching PSSD in recent years, hoping to transform design results to future social and economic benefits in China. In the process of practice, these schools not only introduced PSSD into financial and traditional enterprises, but also into popular fields such as the Internet and public construction and service. A large amount of researches on PSSD and service design in the academic community indicates that the value of PSSD, service design has begun to receive people’s attention, which marks the beginning of development of PSSD in China.”

5.1.3. Enterprises tend to conduct industrial transformation and upgrading by innovation

Recently, more and more international famous design studios such as IDEO, Frog, CONTINUUM stated to set up their branch company in China. This is a chance that the advanced design theories can “import” to China and had a impact to Chinese design industry. For instance, the IDEO branch design studio in Shanghai, through integration of the advanced product service system design knowledge, methodology and Chinese indigenous design culture, carried out many outstanding business design cases, such as DIDI Taxi taking, 58 express service, BAIDU take-out services and so on. Taken DIDI taxi taking as an excellent example of product service system design (See figure 5.3), actually this was a redesign of conventional system of taxi service industry. The design team considered all process that one people taking a taxi from the first stage he/she want to go out from home to final stage after paying and take off from taxi. A innovative service system was designed and breaking the traditional rule of taxi taking. All stakeholders including customer, taxi riders, traffic managers and DIDI company workers can get value-added benefit and comfortable experience in this new taxi taking system. Nowadays, DIDI has changed the Chinese people’s daily travel mode and reduced the resource wasting cars bring. This exhibits the thinking of the product service system design are indeed silently making a positive impact for Chinese people’s life.



Figure 5.3: DIDI designed a new taxi taking system based on application, nowadays Chinese people are used to use DIDI to taking the taxi when they like to go out by taxi
Source: <http://www.didichuxing.com>

With higher and higher level of globalization and integration of design, many Chinese design companies has found the potential needs of Chinese market for product service system design. For example, Chinese famous design company, Langjian, firstly propose the concept of “all industrial chain design innovation service”, which means according to current changed needs of market, design company should provide more comprehensive services consisted of the supply chain design, smart manufacture design, cultural development, design research, branding strategy, Intellectual property protection, education and communication, service design and so forth. This is a systemic consideration for design. Since that, increasing numbers of design consultant company expanded their business from the original product design to all-around product service system design providing professional systemic design service for a hundreds of global enterprises to solve their various issues on interface, products, services and business innovation. At the meantime, Chinese manufacture industry is gradually break the limitation of tradition. Many manufacture-



Figure 5.4: Chinese traditional television manufacturer Changhong had a rapid advance on intelligent terminal home-system solutions,intelligent manufacturing, sales and O2O service transformation
Source: <http://www.changhong.eu/>

oriented companies commenced taking the product itself's development and innovation as well as relevant service experience innovation both into consideration. For instance, Changhong, a Chinese traditional television manufacturer, cooperated with prof. Xiangyang Xin, has seen a "homeapplications" as a "home smart systems" (Figure 5.4). This is obvious conceptual change from designing for a product to designing for a system, which reflects that the Chinese conventional manufacture-oriented enterprises are accepting the new discipline of product service system design. Besides, nowadays the new generation of information technology such as big data, cloud computing and mobile Internet and intelligent application technology such as artificial intelligence has pushed the conventional service industry to offering the brand new interactive experience to customers for meeting their changed individual demands. In addition, Because of the continuous emergence of new technology and concepts, competition is going to be more fierce. The new service systems and relative principles are needed by those traditional service sectors or some start-up service companies. Therefore, it can be known that in China the product service system design is still in fact in very beginning stage, but obviously, it is growing in a rapid speed and showing its importance in a gradual way.

QUOTE

Wu Wei, CEO, CynowareTech

“My company recently cooperated with a traditional Chinese jewelry brand, creating a new retail solution for their stores by our technologies. We put an AI robot which integrated with the face recognition technology at the entrance of store. When a customer steps into the store, this robot will say hello and according to his/her face to identify the purchase preference, and then transferring these data to sales in store, helping sales to do relative private service to the customer. When the customer is picking the jewelry they liked to buy, the sales can use the online games, online coupon, online catalogs, etc., to interact with customers and guide him/her to buy his/her favorite jewelry. After, my company also designed a complete payment system, enabling the managers can master sales status and manage customer relationship at the same time. I think here I just construct a retail system where all stakeholders can get new and great experience and benefits. I dont know what is PSSD, but I think this case just can be seen that it overlapped some parts of concept of what you said PSSD, although I started to do it from a thinking: How to use my smart products in their jewelry store?”

Pro. Gong Miaosen, Jiangnan University

“In fact, in market, you also can feel the huge needs to PSSD from industry circles. In recent 2-3 years, I was asked by many enterprises and organizations to do the consultation and cultivation on PSSD. Many jobs entitled “services designer” also are offered by Chinese company.”

Wu Hanwei, CEO, CapsuleTech

“I think today’s customers are not treated or served well, especially in some scenario that related with user values. So I hope in my company, there is a PSSD talent who can assist us to deal with this pain point. I hope he/she can promote the whole user experience including before driving, driving and after driving. Linking the scenarios and experience and giving customer an unified feeling are important. Nowadays, look at whole car market, automobile companies have transfer their attention from competition on dynamic system, suspension system etc. to service system, because they all realized their technologies have been very mature and similar with each other for normal customers. So this is trend I believe.”

5.2. The trend of PSSD development in China

5.2.1. A driver of conventional industry upgrading

The development of PSSD could assist the upgrading and transformation of both manufacturing and service industry.

China is the world's first manufacturing power, but in terms of technological sophistication and international division of labor, developed countries generally tend to be at the medium-to-higher end of the industrial chain while China is generally at the medium-to-lower end. For example, Chinese textile industry entered the international division of labor with lower production costs and greater production capacity, occupying an important position at the low end of the international industrial chain. This means, for surviving and developing, Chinese textile industry mainly focus on the production but ignored upstream research and development, design, and downstream sales and service, sacrificing a lot of industrial benefits and environmental resources. In addition to textile industry, this situation actually is also existing in many other similar manufacture-base industries in China.

Fortunately, Chinese government and most Chinese manufacture-based companies have realized the necessity of industry upgrading and transforming, so a series of advanced concepts, methods and technologies are desired by them. China's state council unveiled the plan entitled "Made in China 2025" in 2015, was targeted at improving manufacturing innovation, enforcing green manufacturing, advancing restructuring of manufacturing sector, fostering Chinese brands as well as promoting service-oriented manufacturing and manufacturing-related service industries. Chinese industrial research institute launched the "Industrial 4.0 era China manufacturing business model innovation and investment strategic planning special analysis report" in the same year, pointed out "Chinese manufacture industry need to develop in the direction of intelligentize, integration, and interconnection. The industrial structure is needed to be not only adjusted but innovated." In 2016, China's government argued that service-oriented manufacture is a new industrial form combing the manufacture and the service and it should be regarded as the important direction of development of Chinese manufacturing industry in "The action guidebook of development of service-oriented manufacturing." In this guidebook, the design also was mentioned that it should be developed and play a considerable role in enterprise's strategy, product specifications, branding and green development. For surviving and developing, Chinese traditional manufacturers have looked away from simply producing or OEM and focusing on the two sides of smiling curve, equaling to the stages of "before" and "after" of production. R&D and design in the "before" period and marketing and service in the "after" period are being carried out in almost every Chinese manufacturers. This situation now totally differs from it in 5 years ago.

On the service industry side, computer network technology and mobile communication

technology are popular in China and they have changed the status of traditional service industry. Services like online shopping, online food and taxi ordering has made Chinese customers to used to a new way of accepting services. Conventional direct-touched serving methods cannot meet Chinese people's gradually changed needs and habits anymore. Therefore, for several typical traditional service industries such as the Hospitality, Catering industry, bank industry and tourism industry, upgrading or transformation is inevitable for suiting upgrade Chinese people's needs on experience and promoting the service efficiency at the same time.

Linking the situation above with knowledge of PSSD provided by literature, PSSD could be a good tool which can be used by entrepreneurs who are in traditional manufacture or service industry to trigger their company's upgrading and transformation. Innovation, green, structure changes, branding(customer experience) and service-oriented, these points Chinese governments suggested for future industrial development are almost corresponding with functions and characteristics of PSSD, so it can be seem that PSSD is also a promising method to realize Chinese government's targets.

QUOTE

Ding Yaping, CEO, Changzhou Textile

"In current stage, I indeed need helps of advanced design knowledge to upgrade my company and build my enterprise shape in next decades. Nowadays, Amani, H&M and some other cloth brands all view my company as their manufacturing partner. I sold them one meter fabric or one clothe at a price of ¥20, but when they sold it to the customers, they would sell at a price of ¥500. How can they increase the price in several times? I think it is just because by design they bring a lot of added-value for customers, such as great purchasing experience, wearing experience, trustworthy brand and advanced life concept. So, now what I most like to do is integrating design concepts into my products and relevant services and then increasing added-value. Meanwhile, manufacturing industry serviceing is also my aim of development of enterprise. I think PSSD concept can help me on aspects mentioned above, making potential partners to be willing to visit my factory and build a cooperation relationship with me."

San Guo, BD, ARKDesign

"To many enterprises, they maybe face a problem of transformation. In this time I think PSSD just could make a difference. In other words, the managers and leaders in company need to have this business (PSSD) to support their transformation because of today's competitive market. But as I know not many Chinese design companies or organization can hold this business (PSSD) very well, which lead to the trust loss of managers or leaders of companies. Therefore, everyone in China know PSSD is good, but its development is limited in a sense. Besides, there are some so-called "PSSD professionals" who did lots of PSSD projects in China, but in fact they do not very understand PSSD and not be trained well. In their hand, these PSSD projects failed a lot, which also bring PSSD subject a bad reputation."

Shang Guoming, Chief Manager, China Merchant Bank

"As a manager of a Chinese traditiaonl bank, I was required to attended the workshops. and classes about service design and service design design, thus I know the importance of service system design to my bank. Apart form the business products. buiding a efficient , effective and friendly service system supported by advanced technologies just is the most competitive way in nowadays Chinese market."

5.2.2. A collaborator of new retail development

There were one third interviewees mentioned links of PSSD with new retail - which is very popular concept of retail in China. Combining the perspectives of interviewees and relevant references, it was found that the link between PSSD and new retail is close. That is to say, PSSD has potential to play a significant role in new retail.

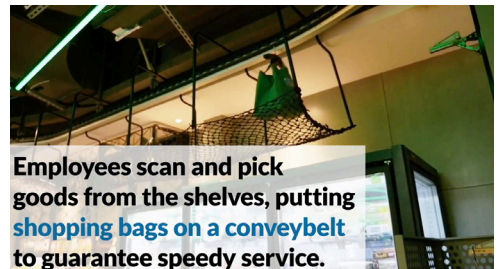
New retail is Alibaba's strategy suggested by Jack Ma last year, which was expected to redefine commerce by enabling seamless engagement between the online and offline world. It aims at building a retail ecosystem that blends online and offline channels in a unified way that features the consumer at the center. The "product+" is core concept in new retail strategy that refers to intangible services which can create happy or unexpected customer experience should be expanded around tangible products. Accordingly, compared with service design - designing for a service, the major concept of new retail coincides better with PSSD, emphasized a innovative system construction and user experience in this system, enabling products to be with more added-values by innovative design.

Market considering, whereas Amazon is at the forefront of the new retail revolution, China's speed and intensity have gone into orbit. Driven by the huge market opportunities and abundant venture capital, players big and small in China both are actively participating in this revolution and experimenting with various forms of new retail. The needs of these players for new retail's systemic innovation by absorbing new technologies and design methods are thus increasing, creating more developmental and applicate spaces for PSSD.

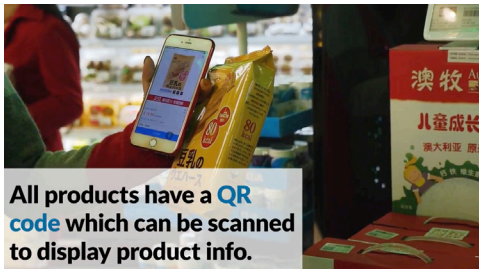
Review all new retail cases in China, it can be found that current new retail is technology-led or concept-led but not needs-oriented and experience-oriented. Most startups think a new retail solution often from a advanced concept or a technological application. For instance, in 2017, with the emergent of the word "new retail", the concept of "unmanned supermarkets" came into the public horizon. This kind of new retail immediately attracted investors and startups' attention, in a short time, a large number of investment put into this mode of supermarkets and a set of unmanned supermarkets opened in large and small communities in China. However, soon after, these supermarkets were close because their sales and profit cannot afford the expensive cost of store and operation. Nowadays in China people cannot easy to find this kind of "new retail" supermarket anymore. This is a typical case that startups or investors only praised highly some new retail "concepts" but ignoring the consideration to people's real needs and experience. The lack of human-centre thinking led to the failure even if the new retail system was innovative and business model was appealing. Another example was provided by a interviewee, Bill Wu. He cooperated with Henglong Jewelry company - a conventional Chinese jeweler, through integration of machine learning and big data, offering a new retail solution for Henglong jewelry offline shops. Nevertheless, reviewed this new retail solution, the new products and new technology used were over-emphasized. The all system design was not oriented from the thinking about "how to bring people good experience?" but about "What experience can these softwares, hardwares, artificial intelligence, facial identification etc. bring people?" Some technology applications which seems amazing were factly to complicate user experience process.



Packed with busy staff, Shanghai's Hema is both a store and a distribution centre.



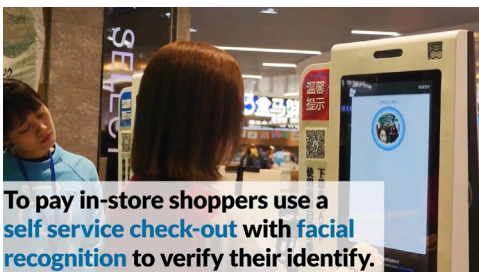
Employees scan and pick goods from the shelves, putting shopping bags on a conveyer belt to guarantee speedy service.



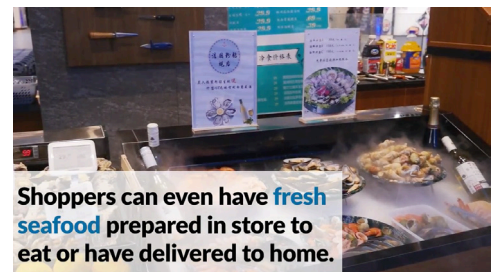
All products have a QR code which can be scanned to display product info.



Owned by ecommerce giant Alibaba there are now 20 Hema stores in China



To pay in-store shoppers use a self service check-out with facial recognition to verify their identity.



Shoppers can even have fresh seafood prepared in store to eat or have delivered to home.

Figure 5.5: HEMAFRESH supermarkets (Alibaba) are the typical "new retail" case study. This is a good example that PSSD was practical applied in retail industry. HEMA's business success has made it to expand the stores to number 60 in 2 years.

Picture Sources: <http://en.cifnews.com> / <https://www.youtube.com/watch?v=8VqtLgr3Oj0>

We cannot say technology-led thinking or concept-led thinking definitely will lead to an unsuccessful new retail or a wrong system, but assisted by PSSD, startups or entrepreneurs in new retail industry may think more holistic, optimizing the retail system for the sake of human-being. Besides, PSSD in new retail also can be viewed as a good expression tool to delivering values to customers. For example, a good design graphic of food offering system could give diners a healthy, green impression to this food store or seller. Judging from above, PSSD is going to be a good “partner” or a design “consultant” to Chinese new retail industry.

QUOTE

Pro. Gong Miaosen, Jiangnan University

“In business, recently the new retail is popular so I also was invited by some companies to do relative service system design for them, helping them to create more value of user experience. I think these new retail cases just are typical PSSD projects. Additionally, some product design projects were actually typical PSS design as well. For example, I designed a vending machine which would be put in guest rooms of hotels. It seems a product design but in fact I designed whole back-office service system for this product such as cloud-platform system or how to exchange the goods in machine.”

Ding Wei, Cheif Designer, Moma Design

“In my point of view, the PSSD has still another developing direction, that is new retail. New retail refers to relying on collaboration of online service and offline service to offer more amazing customer experience during their shopping journey. A good PSSD example in China I think is FRESHHEMA (Figure 5.5), it re-defined the retail industry of seafood, combing the many other service such as restaurant, express delivery and online shopping into one seafood store, which brought a brand-new experience for customers. Therefore, now designer cannot only have the concept of designing for “objects” but also need to have the design thinking for system, environment and networks.”

Wu Wei, CEO, CynowareTech

“Now I am trying to do something to realize the “Food Industry 2025”. I hope to create an overall solution which can help restaurants or food store to control their whole process of their foods without any labors (in internet way). For example, we open a bakery. I hope to create a template which produced by my company’s different products, telling the managers where the raw materials of cakes are from, different status in baking process, how many customers purchased the cakes and so on. Meanwhile, I also like to create an attractive interaction with customers in different holidays or their birthday, a network which can manage the delivery process, a system which can recording customers feedback to help us improving service and so on. To this whole process, technologies are obvious not enough. I hope to there is a designer specializing in PSSD in my company and he can help me to do an overall thinking and design to this food system, making your food to be more attractive and then making customer to be willing to accept your food.”

5.2.3. A humanistic guide of smart city building

PSSD could play two roles in Chinese smart city construction process. The first and foremost is framing people's using and interactive system, enabling to realize the humanistic value. The second is coordinating individuals, enterprises and government, together contributing to the smart city building. The reasons are as below:

“Smart City” is an innovative idea of city development since the 21st century. It is expected to using information and communication technology and various physical devices connected to the network to enhance quality, performance and interactivity of urban services, to reduce costs and resource consumption and to increase contact between citizens and government. In 2014, Chinese government realized the importance of smart city construction and unveiled a document entitled “Guiding and Opinions on Promoting the Development of Smart Cities”, proposing that by 2020, a group of smart cities with distinctive characteristics should be built in China. Meanwhile, in this document, the issues impeded the construction were mentioned as well: One was Chinese government lacked overall plan and projects design for building smart city yet; Another was the detailed solutions, methodology and talents specialized to smart city building were insufficient.



Figure 5.6: These smart devices seems smart, but in fact giving patient lots of troubles
Picture Source: <http://www.didichuxing.com>

Currently, relied on the mature technology of information and communication and IOT, the technological solutions, methodologies to supporting the Chinese smart city construction have been found. Talents with engineering background are mainly responsible to general plan for smart city building. They thought the solutions on the level of engineering, hence the feasibility of system is the issue they put concerns on, whereas the coordination of system, sustainability of system and people's feeling in a system never were taken into full consideration. For example, in Nanjing Gulou hospital - one of the biggest hospital in China, a set of IOT devices were put into service, aimed at assisting hospital to record datas and to manager their patients better. In original plan, patients were expected to use these devices to promoting the efficiency of processes of seeing a doctor involving appointment making, registration, consultant, queuing, etc. This “smart health” system seemed excellent but in fact many patients did not know how to use this machines, and hospital staff's workload of answering patients' questions is increasing (Figure 5.6). Relevant signs and illustrations which can give patients guides in this new system

are lack and unclear. Moreover, because of the focus on technological solutions and solutions copy, the smart city construction in different Chinese areas seems similar, missing the regional characteristics and humanistic innovation. For these reasons, PSSD, this human-centered system design can cover well the shortages existing in current Chinese smart city system.

In addition, smart city building inevitably needs the co-creation from government, enterprises and citizens. Many documents or guidebooks about smart city building launched by government have mentioned the issues of insufficient participation of citizens in communication and then called on the planing and designing engagement of citizens. Therefore, from this point to say, as a subject can guide people to be together creating values together, PSSD has prospect.

QUOTE

Pro. Hu Hong, Beijing University of Technology

“PSSD can be a guide and thinking in construction of smart city. PSSD can be combined with big data, Internet and Internet of Things technologies to focus on the quality of life in society, the environment, management and citizens. How to use PSSD to promote positive social change is the largest experimental and practice base for government functions, urban management, people’s livelihood services, and social innovation in a city. This is something that no other Western country has ever had. How to provoke the heavy responsibility of China’s social transformation period? I believe PSSD contains challenges and opportunities in smart city building.”

Feng Jiang, Urbanization Department of Jiangsu Government

“China is a populous country, thus building a smart city is very important for China. It is possible to make the government to manage cities more efficiently and create better services for people. The status of China’s smart city construction has the following points: First, e-government is the starting point for government informationization. The second is now we focus on digital city management only using information technology. Third, we still lacks smart city master planning and engineering design. The fourth is repetition of the construction of “information islands”. The fifth is the urgent need to ideas, methods, and talents for smart city construction.”

Ding Wei, Cheif Designer, Moma Design

“Currently with the development of internet of things, products integrate the internet, and then everything changes. Many new concepts emerged, such as industry 4.0, smart city. When information attached on objects, objects will have “sensing”; Data will be produced and transferred during the interactions between people and objects, thus relative, more services and possibilities appear, which is a natural process. Under this situation, PSSD can help managers and designers clear their mind, then using the innovative solutions to enhanced the work efficiency and offering better service and products to people.”

5.2.4. A tool to dealing with social problems

Aging population, increasing laid-off workers, food safety issues, etc. are several serious social problems existing in Chinese society. Every year a lot of relative policies and measures aimed at making a difference on these social issues were carried out by Chinese government, but the effect was not obvious. Meanwhile, the absence of social enterprises and NGOs thrown the government in an isolated condition of helplessness. The solutions for social problems lack diversity and creativity in China. In *Stanford Social Innovation Review* (2010), Brown, T., & Wyatt, J. emphasized the importance of design thinking in social innovation and the necessity of systemic solution for system problems such as social problems. Therefore, PSSD, as a systemic design thinking, is possible to help Chinese government from two aspects as follow:

The first is PSSD may give a strong hand for public services construction. Public service construction is government's responsibility and its design is related to social security employment services, education and so on. These fields all can play a significant role in solving Chinese social problems. PSSD could be a think-tank to help government to form new value consciousness and creative minds, enabling them to stand at user's angle to rethink the works and then to offer better solutions for future Chinese public service systems. "Empathy" is the essential to solving the social problems. Besides, the outcomes (concepts) of PSSD can be used as the simulated test, with the lowest cost, allowing government to have chances to reduce or avoid risks of significant investment decision-making.

The second is PSSD can facilitate China's social innovation development. Social innovation refers to organizations with purposes of creating social benefits use innovative activities and services to meet a social need (Mulgan, G., Tucker, S., Ali, R., & Sanders, B., 2007). But in China, this type of social organizations were few and immature. Most of them relied heavily on external funding, while themselves' capability of sustainable development was weak (Zhou Hongyun, 2015). This always resulted in the short-life of organizations. In addition, their activities and services were not enough innovative and creative to satisfying the social needs. That is to say, the development of social innovation in China is mainly limited by organizations' unsustainable operation and innovation lacking. To overcome these 2 barriers, PSSD is obvious a good method or tool. The thinking and methodology of PSSD could inspire Chinese startups, assisting them to frame a innovative system that can fill the social needs as well as internal financing needs, to realize the successful social innovation.

QUOTE

Lian Zi, Policy Making Department of Chinese Government

"Absolutely, I think PSSD could help government more on public service planing and infrastructure construction. Maybe you can also give more smarter suggestions to government on some main Chinese social problems such as pension issues or food safety issues. These issues has annoyed governments for many years and we are finding a effective

solution all the time. If PSSD can help us to make a ecosystem where citizens can feel satisfied with the services governments offer such as education service or medical service, making people have a better life under the management of Chinese government, we will be very happy!”

Ding Wei, Cheif Designer, Moma Design

“I think PSSD could relate with our daily life, I means it can bring positive change for urban life for citizen. Last month the government of Shanghai call a group of designers together, hoping them to walk into the community and design for community. The design sphere covers Shanghai people’s daily shopping life, entertainment life, travel life and so forth. From this we can see , Chinese government has realized the design can help them to build better public service for their citizens. The design here just refers to service design, PSSD. Therefore, the concept of PSSD matters to current society because it indeed can contribute to the development of society. We should believe it is a future design trend definitely.”

Pro. Xin Xiangyang, Jiangnan University

“I was invited by Hong Kong government to do the system design for HongKong’s public service systems. For example, local government regarded employment issues as a big social problem to them, To working and middle class, HongKong’s employment environment is bad and bit messy. There, for government I designed the product service service system about benefits paid and received and the system supporting normal local people to find the job, to solving this social problem.”

“In China, because of the enormous population and ethnic groups, the social problems like employment issue are a lot. PSSD has its potential on this aspect and could play a important role on solution-offering in future”



Figure 5.7: Employment issue in Hong Kong is a bit messy and bad to low/middle class. Pro. Xin was invited by local government to solve the social problems.
Picture Source: <http://www.vice.cn>

Figure 5.8: Celebrating for Being Elderly: Wuxi government invited Pro.Gong Miaosen to do the service system design for local elderly
Source: <http://www.desisnetwork.org/courses/jiangnan-university-china/>



5.3. Challenges of Development

5.3.1. Insufficient knowledge base

The incomplete design knowledge framework is the biggest barrier to developing PSSD in China. PSSD is an emerging concept so the relative researches, practices are insufficient all over the world. Especially, in China - a country where the design culture is absence, the shortage of relative knowledge base is more serious. Because of the changes of design objective, the contents, platforms and networks that support product design, interaction design, user experience design, etc. cannot be directly used any more. In China, the basic product design is not be developed very well, let alone the more complex design subject such as service design or PSSD. The definition, design objective and methodology of PSSD are of ambiguity. The reasons, required resources of PSSD development are not clear as well. Therefore, whatever in academic or industrial circles, existing knowledge base cannot assist the formation of an essential framework of PSSD yet. Currently China do not have the basic condition for the development of PSSD.

QUOTE

Pro. Xin Xiangyang, Jiangnan University

"PSSD plays a very complex design decision. This design decision can be built based on relative scientific methodology, but in current China the basic design knowledge base is lack."

"The cross-discipline cooperation is not enough, the more important thing is knowing how. Before, we had a great collaboration with engineers because we know that a physical product need to have a lot of functions, some of these functions only can be realized by engineers to support the design. The relationship between industrial designers and engineers is clear. But to a product service system, we cannot clarify the purpose of design, the relationship between platform and content, and we also cannot define the roles of the collaborators such as business managers, psychologists. Therefore, this uncertainty certificates that now we still lack the mature knowledge base or system to support the development of PSSD."

San Guo, BD, ARKDesign

"The market of the USA is a stable market that has a sound and relative mature system. Its developing speed is quite slow but stable. On the contrary, Chinese market is unstable because everything developing so fast. We must know a successful innovation need a early accumulation. The accumulation is not only on knowledge, but also on physical resources, people network, market acceptance and so on. Therefore, in China, the too-fast development of economy and market results in a basic system is not well established to supporting the development of PSSD. It is a "base" problem, also a "time" problem."

5.3.2. Difficulty with value evaluation

In 2002, UNEP expressed that sustainable product service system is difficult to quantify the savings arising in economic and environmental terms, so selling this new innovative concept to stakeholders both inside and outside the company is a big challenge. In other words it is hard to convince managers in the companies and organizations who need to clearly know the rate of return on investment to accept and use PSSD because the value of PSSD is impossible to be counted, and the market also lack the tools or standards to conduct an evaluation. Especially in China, for living, most Chinese people, whether he/she is a government officers or an ordinary folk, all prefer to see the fast and obvious profits but potential or long-term values, which lead to a more difficult developing environment for PSSD.

QUOTE

Ding Wei, Cheif Designer, Moma Design

“Frankly speaking, this challenge is oriented from the general acknowledge of public and Part A. For example, if government find you to do a space design or architecture design, you can quote clearly to them, because you can count price in one square meter or in construction area. But if government ask you to design a PSS for them, you cannot give a clear quotation, right? Moreover, If you design a product, the product can be sold and bring your Part A profits; if you do a branding design for a company, the company also can evaluate the brand value. But if you design a PSS, what real value your Part A can get? I believe you and Part A both cannot evaluated it according some principle. Therefore, simply saying, because of the unsystematic knowledge and weak realization on PSSD, the advanced concept cannot develop well.”

Chen Fang, Tutor, Istituto Europeo di Design

“Another challenge I think to PSSD is most of Chinese people like to see the short-term benefits. If they ask you to do a design consultation, most of them hope your design can create profits in one month. But obviously the value of PSSD cannot be evaluated by short-term profits and it also is hard to assess accurately that how much money it could bring. After all, because of serious competitive environment, most Chinese companies are in a “make a living” situation.”

Wu Wei, CEO, CynowareTech

“However, I think PSSD currently is facing a disadvantaged situation. That is no many people can transfer the theoretical values of concept of PSSD to the real values of practical projects. How to engage PSSD in a project and then making its value to be obvious for managers and customers is very important to you.”

5.3.3. Absence of actual cases labeled PSSD

In addition the rate of return on investment, another factor can arouse interest of managers in the company or government is successful cases. Case study is as a important tool which provides a channel of knowing and learning up-dated advanced concepts to managers. However, currently the concept of PSSD has not been formed in Chinese market yet. Relative readable design cases were all labeled as product design, space design, interaction design or user experience design but not PSSD, even if most of them in fact involved PSS's design thinking and relevant design methodology. Besides, some successful and influential "PSS" cases were regarded as the business model innovation among Chinese people. (e.g. Mobike, a popular Chinese company offering the bike sharing service all over the world, its sharing system model was viewed as a innovative business model designed by its founder - a journalist while in designer's eyes it is just a innovative product/service system design.) For this reason, most of Chinese managers have no opportunity to cognize the PSSD by case study. Perhaps some of them heard about PSSD and have a interest on it, but they still cannot find the relative cases to study.

QUOTE

Ding Wei, Cheif Designer, Moma Design

"In current several years, the concept of service design and PSSD actually were also popular, but the relevant successful cases created by designers were still lack. So, I think although in China many people in design industry had a general awareness on PSSD, there was no big breakthrough on practice yet."

Chen Fang, Tutor, Istituto Europeo di Design

"Moreover, factly, Chinese big companies such as HUAWEI, OPPO, or Alibaba all are doing service design or PSSD, but they did not entitled these projects they are doing as service design or PSSD. So if you want to introduce to others case studies of PSSD or service design, you will be hard to explain and then convince others."

Ding Yaping, CEO, Changzhou Textile

"Up to now I never heard about any successful cases about PSSD. Thus I hope to see the PSSD successful cases from other enterprises and then to do the case studies. I do not like to only know the theoretical knowledge, I rather to see what real value PSSD has brought to other companies. I like to know what a company originally looked like, and what a company turned to be after the engagement of the design."

5.3.4. Isolated-informational ecosystem

Based on the results of interview, it was found that most of Chinese managers and officers in companies or governments had a potential demand on PSSD. Especially, traditional manufacturers expressed a desire to using the PSSD to realize the upgrading and transformation of company. In other hand, they also said that it was hard to touch with the information of design in their life, thus they do not know what PSSD is before and where they can get the information of PSSD. According to this situation, it can be seen that in China industrial and design cycle both are relative isolated, and the informational ecosystem between them has not been built well. This also is an obstacle that limited the development of PSSD.

QUOTE

Wu Hanwei, CEO, CapsuleTech

"I really hope to connect some professionals to have a talk about PSSD and related knowledge. I know lots of professors and famous designers such as Xin Xiangyang, or Cha Shan in Tencent, but it is hard to invited them and have a ask. Therefore, nowadays I only can find some students studying PSSD or service design to talk something to me and help me. But, I still think it is not enough, I like to enter the "PSSD" cycle and link with different experts."

Chen Fang, Tutor, Istituto Europeo di Design

"If you want to develop a new design concept, I think firstly the various channels where people can get to know the knowledge should be built. PSSD is an emerging advanced concept from west country, so the relevant references or website about PSSD should be translated well and then making Chinese to be easy to access and understanding. But there were few people who are working on this work of translation. In IxDC of China, I don't know if you found they actually talking the similar knowledge about PSSD every year. There were no deeper research or new progress for PSSD. I think this phenomenon was just resulted from the lack of access channels of information."

Ding Yaping, CEO, Changzhou Textile

"I also like to often touch with the design specialist and some design platforms. Now except communication with my friends in the industry, in fact I do not know where I can get these design information. Therefore, if there is a chance which I can take part in some training or conference and can communicate with relative designers and managers who has got a success by PSSD, I will be very happy."

5.3.5. High-level requirement of designer's comprehensive quality

Similar to strategic designer, PSS designer has to think everything among a product/service lifecycle, balancing the relationship of business, user experience and sustainability. Apart from using the different innovative tools skillfully, a good PSS designer need to have a prevision to process of systemic innovation and clearly know the key elements which obstruct the innovation at the same time, leading organizations to a right developing or transforming direction. There is a complementary relationship among PSS designer and product manager. Therefore, a PSS designer need to be with not only capability of design, but also a perceptive insight□excellent communication skills and strong decision-making capacity. The cost of training a good PSS designer is high.

In China, designers who have comprehensive quality and can be a real PSS designer are rare. Some designers are too conservative to accept new concept of design, while others are fashion victims and forget the basics of design. The market context where people pursuing the "high-speed" on everything is also not conducive to cultivation of the PSSD talents. For these reasons, it is hard to find a suitable designer who can hold this job position completely right now in China.

QUOTE

Pro. Gong Miaosen, Jiangnan University

"The last is as a PSS designer you should have all-around quality. In addition to design skills, PSSD requires designer to have a great communication skill, strong perception and flexible and holistic thinking to an object. Thus in China the education system cannot satisfied the demand of cultivation of this kind of talents yet."

Ding Wei, Cheif Designer, Moma Design

"Transiting from products consuming to system and experience consuming, this is a big trend in the market. For this reason, the current designers are facing more challenges. They need to have not only skills of modeling and sketching, but also knowledge of service, technology and informatization, etc. Therefore, I think we cannot see designers as a role whose job is making hardware any more, we should view them as a director role. Their main responsibility in an organization should be coordination and innovation. In addition to that, a top designer also need to be with outstanding ability of insight-finding and decision-making. Soft skills are more and more important to designers nowadays, but meanwhile these soft skills also are harder to foster than hard skills."

Chen Fang, Tutor, Istituto Europeo di Design

"PSSD is not like graphic design or product design that you can do well if you got the relative skills and a good aesthetic sense, it has a high requirement on individuals. PSSD requires you should have more conditions on "softwares" such as a keen business sense, a good understanding ability, innovation talent, curiosity, etc. Without these softwares, you cannot get success on PSSD project. In a sense, it is easy to enter the door of PSSD, but it is very hard to be an excellent PSS designer."

San Guo, BD, ARKDesign

“In preschool education, Maria Montessori theory is an advanced theory which plays a important role in education industry. It has a holistic education system and tools. But why this system which is admitted as an excellent education way by the global cannot be develop very well till nowadays? I think the core reason is “teacher”. Teacher, as a core component in whole education industry, his/her training cost is very high. Especially, Montessori’s education system is like a advanced class, it requires teachers have basic and great kids education knowledge and working experience. Simply speaking, Montessori’s education system set a high standard to teacher’s quality. Therefore, Montessori’s education system itself’s mechanism decides its low-speed development. PSSD is also facing this problem.”

5.3.6. Lack of social depth understanding

With the development of design industry, the design objects covered more widely, from original simple tangible objects to current complex intangible service, process and strategy. More and more design concepts were hence emerged in recent decades, such as user experience design, interaction design, business design, service design, product service system design, etc. These design concepts are all developed based on human-centered design, underlining the value of human in design behaviors and activities, but for meeting needs of different organizations, they have the differences in priorities of research. Thus these design concepts seems different but actually having lots of overlapping areas. Furthermore, some of them are even in exploring stage and their definition have not been clarified yet. Coupling with many people’s shallow understanding to these concepts, confusion appears naturally when people talk about them.

Every year there were big and small conferences or activities about future direction of design, where PSSD was talked very often by attendees. However, since Chinese people knew the word PSSD, 5 years past, people are still talking about “what is PSSD” till now. It is obvious that no Chinese did a depth research on it. Social understanding on PSSD stopped at shallow-level.

QUOTE

Pro. Gong Miaosen, Jiangnan University

“Another problem limiting the development of PSSD I think is from Chinese designers and design students. Nowadays in China, designers and design teachers or students are mainly divided into two types. One type’s people refused to accept the emerging design concept, which enable them losing in design developing stream. Another type of people are parrots. They like to absorb the new knowledge and think it is good but they did not know why it is

good and how to use it in a right way. More serious for this kind of people is that for pursuing the new things blindly, many of them even lost their basic design skills as a designer such as sketching. Frankly, these two types of people are regular seen in China."

Chen Fang, Tutor, Istituto Europeo di Design

"In IxDC (international experience design conference) of China, I don't know if you found they actually talking the similar knowledge about PSSD every year. There were no deeper research or new progress for PSSD. Many Chinese people regarded holding the conferences or speeches about PSSD or service design as the tool that can help them to earn money. Their main purpose was earning money but researching and developing these subjects. So in this situation, how Chinese society have a deep understand on these emerging design subjects!?"

6. CONCEPT DEVELOPMENT



6.1. Idea Generation

6.1.1. How to overcome Challenges

From the previous research, we can know the main challenges to PSSD development in China have six: insufficient design knowledge base, isolated communication system, hard value-evaluation, lack of related cases labeled PSSD, high requirement to designers and lack of deep research of it.

To first four challenges, or pain points, seem different, but they in fact can be regarded as one main problem, that is the lack of network or ecosystem which could facilitate it (See Figure 6.1). PSSD is a comprehensive design subject, so the work of filling the knowledge base cannot be conducted by only designers, but professional people in other industries such as economist or manager. Isolated communication system made every people live in their own little cycle, such as service designers cycle, factory managers cycle. It is obviously restricting the development of PSSD that highlights collaboration. Value evaluation is a progress, if relevant PSSD projects cannot be executed and PSSD knowledge cannot be applied often, the value would be hard to be measured well and convinced forever even if there are so may evaluation methods carried out by many scholars. The cases or projects labeled PSSD need the combined actions and effects by designers and relevant people. Here PSSD is like a brand, without networks, it is hard to be strengthen and spread, and finally leaving a positive and deep impression to all levels of people.

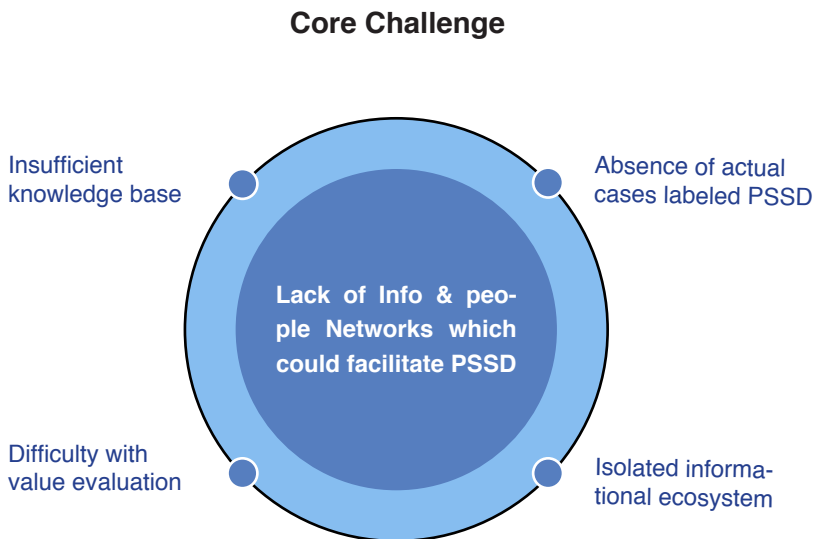


Figure 6.1 Insight from challenges of PSSD development in China

Therefore, to this main problem, the best solution could be building a network by various services-offering, where the relevant PSSD knowledge and information could flow, and people who are related with PSSD or have a potential to use relevant knowledge of PSSD could connect and help each other easily and form the principle and framework of PSSD together, naturally, gradually at the same time. If the network or eco-system is constructed, the focus on PSSD and people engaged in PSSD would increase, the quantity and quality projects of PSSD would rise. When data collected more, research can also go deeper.

“ Building a network by various service-offerings, where the relevant PSSD knowledge and information could flow, and people who are related with PSSD could connect and help each other easily and form the principle and framework of PSSD together, naturally, gradually at the same time.”

6.1.2 Target Groups

Entrepreneurs, managers and designers (includes professors in design school) who have several years experience in design industry are target groups that should be firstly engaged in this PSSD network (See Figure 6.2).



Entrepreneurs



Managers



Designers

Figure 6.2 Target Groups

Firstly, they have motivation to PSSD. Entrepreneurs and managers have a demand on company's transforming or upgrading, as well as developing a competitive product/service which could win a great market share. Designers hope to expand their horizons of design and grasp the design trend at any time. Meanwhile, they need the real projects to practice their theory and to support their researches.

Secondly, PSSD requires people to have not only the basic design thinking and design skill but also something else in terms of insight, sense of judgment, decision-making, coordinat-

ing etc. Entrepreneurs, managers and “senior” designers just have these kinds of soft powers, thus PSSD could be more useful and Influential in these people’s hands, facilitating the rapid development of PSSD.

According to the PSSD trends (demands of PSSD) in China, the target groups can be further subdivided, they are (Figure 6.3):

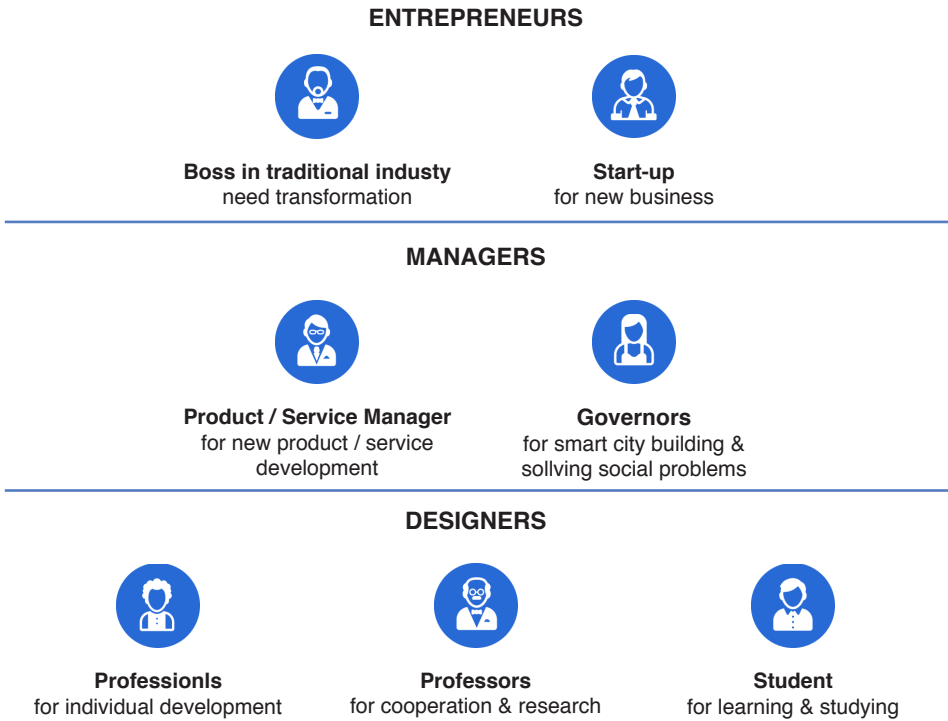


Figure 6.3 Customer Segmentation

1. Entrepreneurs or managers of traditional company such as bank governors or CEOs of factory, because for living in nowadays’ market environment these traditional enterprises must rethink their product/service system and conduct a upgrading or transforming strategy.

2. Entrepreneurs or managers in big internet companies, they have found the online service cannot meet the needs of customers any more and advocate bringing combined experience of online and offline to their customers. Now the very popular concept “new retail” in China is just the best example these people are thinking of.

3. Managers in government, organizations or social enterprises who want to do something for solving the social or environmental problems. They long for smart solutions of problems, bringing social welfare and take benefit at the same time.

4. Governors, managers or engineers who are contributing on smart city building. The technology or how to collect big data have not been the only things they should consider, how to use these data to take benefits for citizens should be taken into account more importantly.
5. Professional designers in different companies. The PSSD network can represent the future of their career and more potential opportunities of business.
6. Professors or scholars in design school, for researching, for project cooperating, for teaching and for communicating, they need the network.
7. Design students. For them, education and preparation for future career matters.

6.1.3. Channels

Based on the research of interview, almost all entrepreneurs and managers mentioned they hope to have a chance to meet and talk with professors or professional designers who have rich design experience on PSSD, service design or strategy design. It is also appreciated if these design experts can be invited to have several classes for them. In addition, beyond half of them expressed when it is spare time they prefer to learn PSSD in a simple way, like through website or mobile phone.

QUOTE

Ding Yaping, CEO of Changzhou Fabric

"I like to often touch with the design specialist and some design platforms. Now except communication with my friends in the industry, in fact I do not know where I can get these design information. Therefore, if there is a chance which I can take part in some training or conference and can communicate with relative designers and managers who has got a success by PSSD, I will be very happy."

Wu Wei, CEO of Nanjing Cynoware Tech

"I hope to have chance to talk deeper with you and your professors, seeking a possible cooperation on some projects. I also want to know some website about PSSD and I can have a deep understanding to it."

Lian Zi, Manager of Chinese Policy Research Department

"About learning channel, I think if there is a platform on which governments' people, design professionals and even our partners can communicate and learn PSSD together is better. The training class is also necessary, but I hope to the class is not traditional anymore, it should be more interactive and interesting."

Wu Hanwei, Start-up of two companies

“Basically, I learned design knowledge from relevant books. But I also look forward to learn it though the classes or speeches where design professionals can teach PSSD and analyze industry.”

Therefore, the PSSD network should be constituted of online and offline. Online service should be simple and easy to conduct. The role of online service is “touching” or “connecting”, while the offline is “understanding” and “interacting”, it could cover actions in terms of discussing, cooperating and sharing. (See Figure 6.4) The cross-using of online and offline channels enable user to accumulate the PSSD resources in terms of people and knowledge. (Figure 6.5). With the user’s continuous usage, the PSSD knowledge and people networks are developing as well.

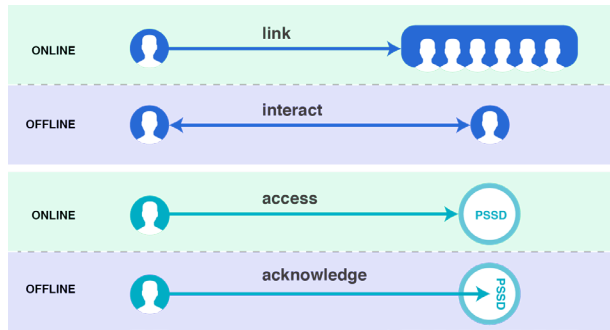


Figure 6.4: Channels different roles in netorking and learning

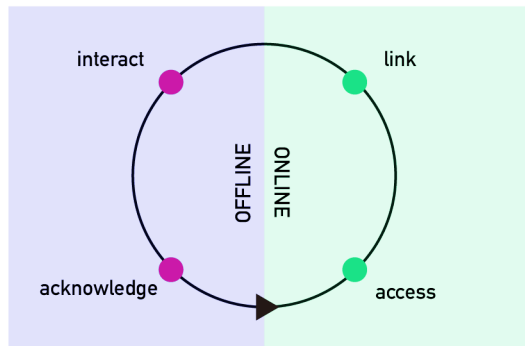
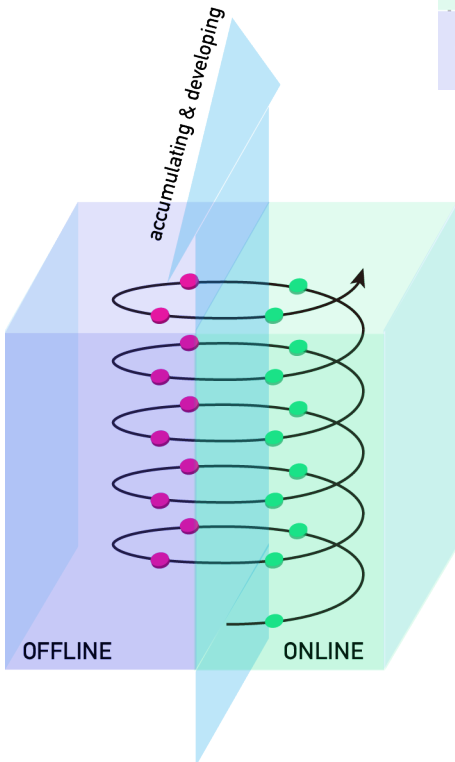


Figure 6.5: Accumulating Process of PSSD resources in terms of people and knowledge

6.2. Brand & Vision

6.2.1 Name and Logo



The company's (or organization) name is easy to understand, PSSDER means everyone interest in PSSD and could be a part in this PSSD network. Of course, in spite of being a part, as a PSSDER, you could witness and contribute to the development of PSSD in China.

Comparing with the company name, the logo is more meaningful. It made up of four letter "D" overlapping. The color of "D" shade into light from left to right gradually. This visual design was inspired by Richard Buchanan's theory of 4 orders of design. He suggested the first and lowest design order is graphic design or 2D design, the second is designing for products or space, we can call it as designing for 3D. The third is designing for interaction, the relationship between physical things or people. The final and highest one is designing for environment, system. The design subject of the fourth design order is coordinated with PSSD's, and at the same time covering all previous three design dimensions. So here 4 D refer to 4 orders or dimensions PSSD process. The left dark one is the fourth design order but it also includes right three design detentions.

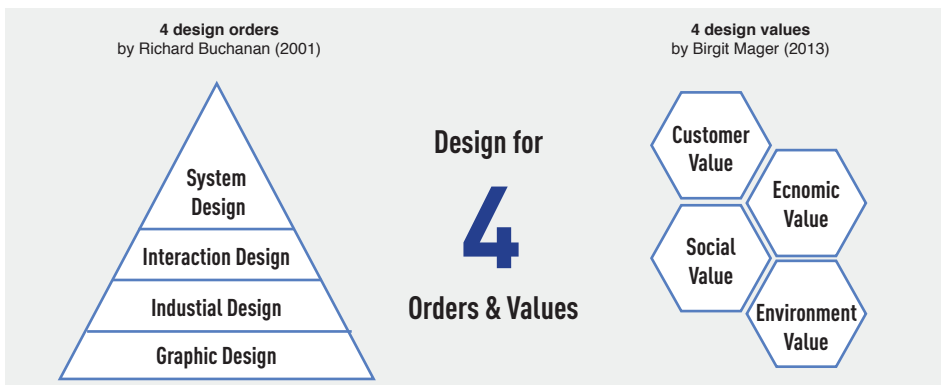


Figure 6.6 Inspiration of Logo Design

Additionally, I also like to transfer the 4 values of PSSD to Chinese public, making people realize the real value of PSSD. They are the value of customer, the value of economic, the value of society and the value of environment respectively. (See Figure 6.6)

6.2.2 Vision

“Using the Power of PSSD Network to Bridge our Future.”

6.2.3 Value Proposition

Because the target groups are generally classified as two types: Managers and Designers, the value propositions should be delivered by my service are also different to them.

From the interviews, analysis and the value proposition canvas (See Figure 6.7) we can found, to PSSD, the managers or entrepreneurs expect it can open their mind and expand their horizon. At the same time, when they think of the company transformation or upgrade or a new product/service project, he/she can link as much as resources related to the PSSD, getting professional support and achieve a success. Besides, as a manager of company or organization or department, they also hope to learn and absorb advanced knowledge continuously and effectively, accessing self-improvement.

Their one of fears is low or minus input-output ratio. The cases of PSSD were lack so that these managers lack confidence on PSSD. Unclear market price of a PSS design is also a factor they worry about, because this makes them loss the judgement to the veracity of quoted price from designers. The last but significant fear is being in the backward stage of company in competition. They must go forward followed the trend but sometimes they have not a clear direction.

According to the expectations (gains) and fears (pains) of managers and entrepreneurs, I designed my value propositions for them are:

- (1) Learning not only about design, but also the future smart managing / business thinking**
- (2) Exploring & Connecting exports of design & business, collaborating to find the best solution**
- (3) A great number of real cases provided for studying or researching**
- (4) The most professional PSSD knowledge “bank” in China**
- (5) Customized & Flexible, easy to use**

For design professionals, professors or even students related to PSSD (See Figure 6.8), they want to know the updates and trends of PSSD and its relevant knowledge such as service design, design strategy at any time. Of course, improvement of the design skill or ability matters to them as well. In addition, they long for projects cooperation. One purpose is taking money, another is accumulating the experience, being good for individual development of career.

The pains for them have 3. One is there is no any platform or organization in China offering the professional PSSD and related knowledges and updates. Second is convincing the customers the PSSD is a complex and challenging progress, being recognized is hard. Third is apart of going to university to read for a degree, they almost have no channel to improve their own PSS design skill or abilities.

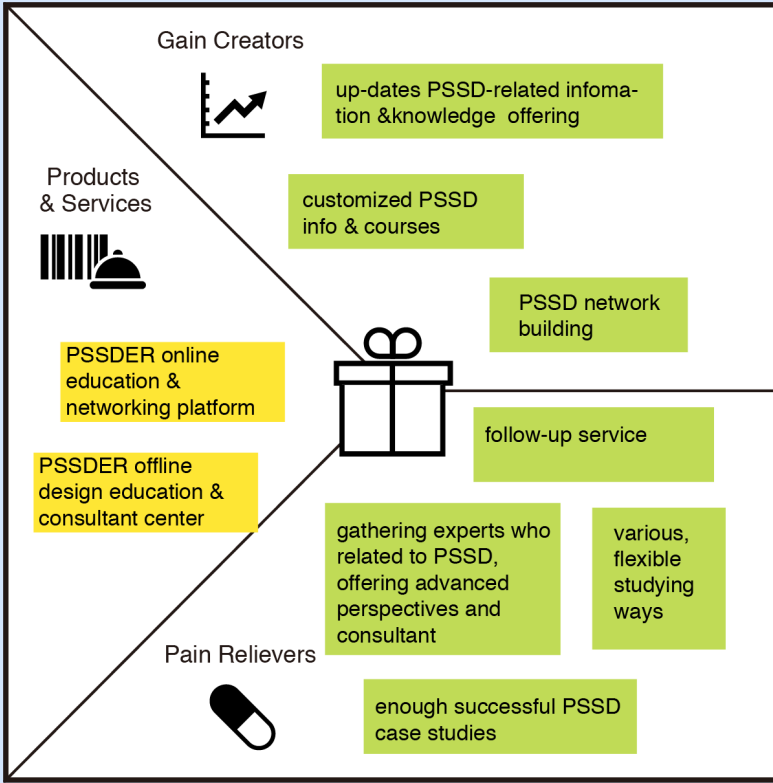
Therefore, followed by the situation above, value propositions for design professionals are designed as:

(1) Expanding quality business cooperation

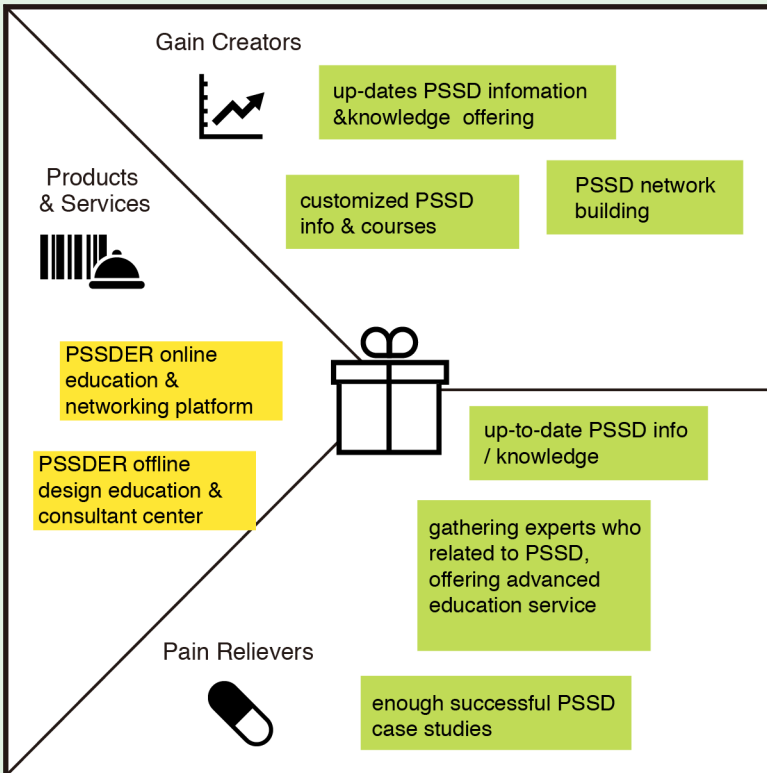
(2) Mastering the PSSD updates at any time, any where

(3) Improve design ability in a simple and professional way

Value Proposition Canvas
(For Entrepreneurs & Managers)



Value Proposition Canvas
(For Designers)



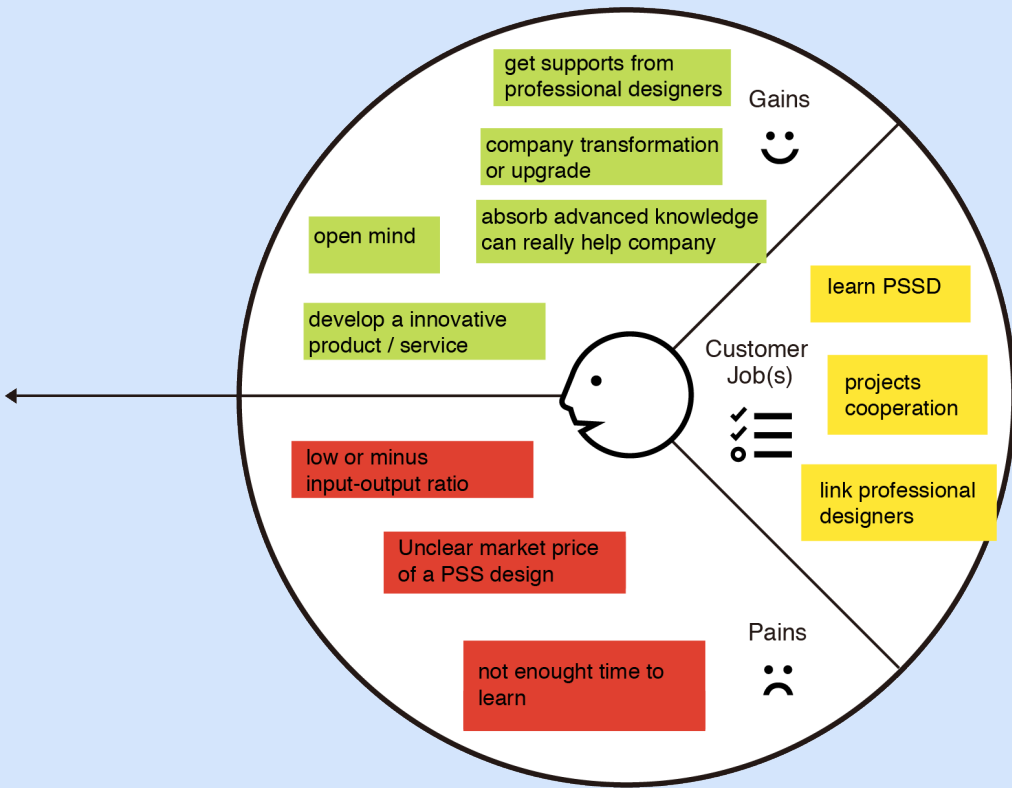


Figure 6.7

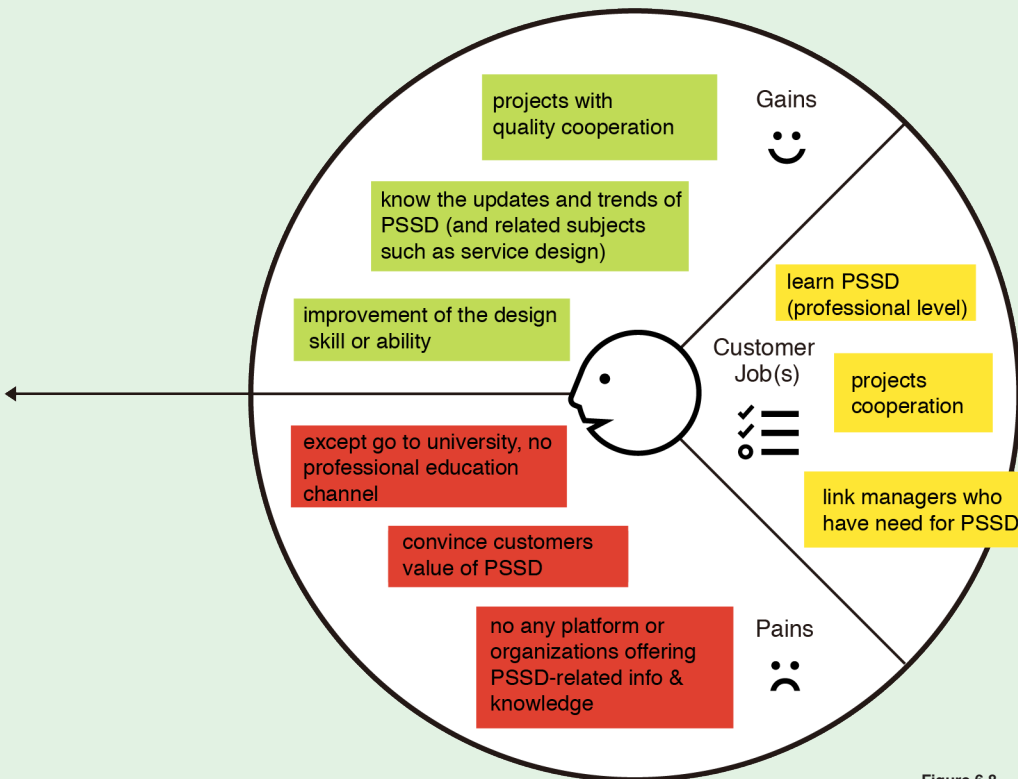


Figure 6.8

6.3. Concept Description

6.3.1 Product & Service System Design

As it mentioned before, I should building a Chinese PSSD network through providing online services and offline services. The network was designed based on two important principles:

1. The network should be like a “bank”, it could not only “store” the PSSD-related knowledges and information, but also make knowledges and information can be flowed and used among people. 2. The network should link all PSSD-related potential stakeholders, fercilitating an PSSD eco-system of people. Therefore, from the general product / service system map we can see, whatever it is online service or offline service, the design focus on people’s link, knowledges link, and at the same time enabling them to interact positively in the network. (See Figure 6.9)

Next, I will describe this system design from aspect of online services, offline services and links and interactions between online and offline services one by one.

6.3.2. Online Product & Services

I defined that the online services are realized mainly by application (APP) on mobile device such as mobile phone or iPad. People can also visit website to receive relative services, but website is not the main place offering services. This application is consisted of three main system, they are information system, education system and networking system.(See Figure 6.9)

Information System mainly provides the service of delivering of knowledge and updates about PSSD. The contents of it are produced by PSSDER and some partners. The partners include design medias and organizations such as IXDC (Chinese outstanding media or organization focusing on user experience design), CSDN (Chinese Service Design network), some famous design teams such as Tencent CDC (Customer Research & User Experience Design Center), Fjord Design company, and academics such as Qinghua University etc. The previous partners can provide more about up-to-date news or perspectives or activities about PSSD, the later one bring more about case studies and trend analysis, and the last one could contribute to basic theory, methodology and tools. Under this partnership, PSSDER could build like a “PSSD information centre” covering all aspects of PSSD information, where managers and designers can read what they interested in at any time and any where.

Education System supplies online education service for managers and designers who want

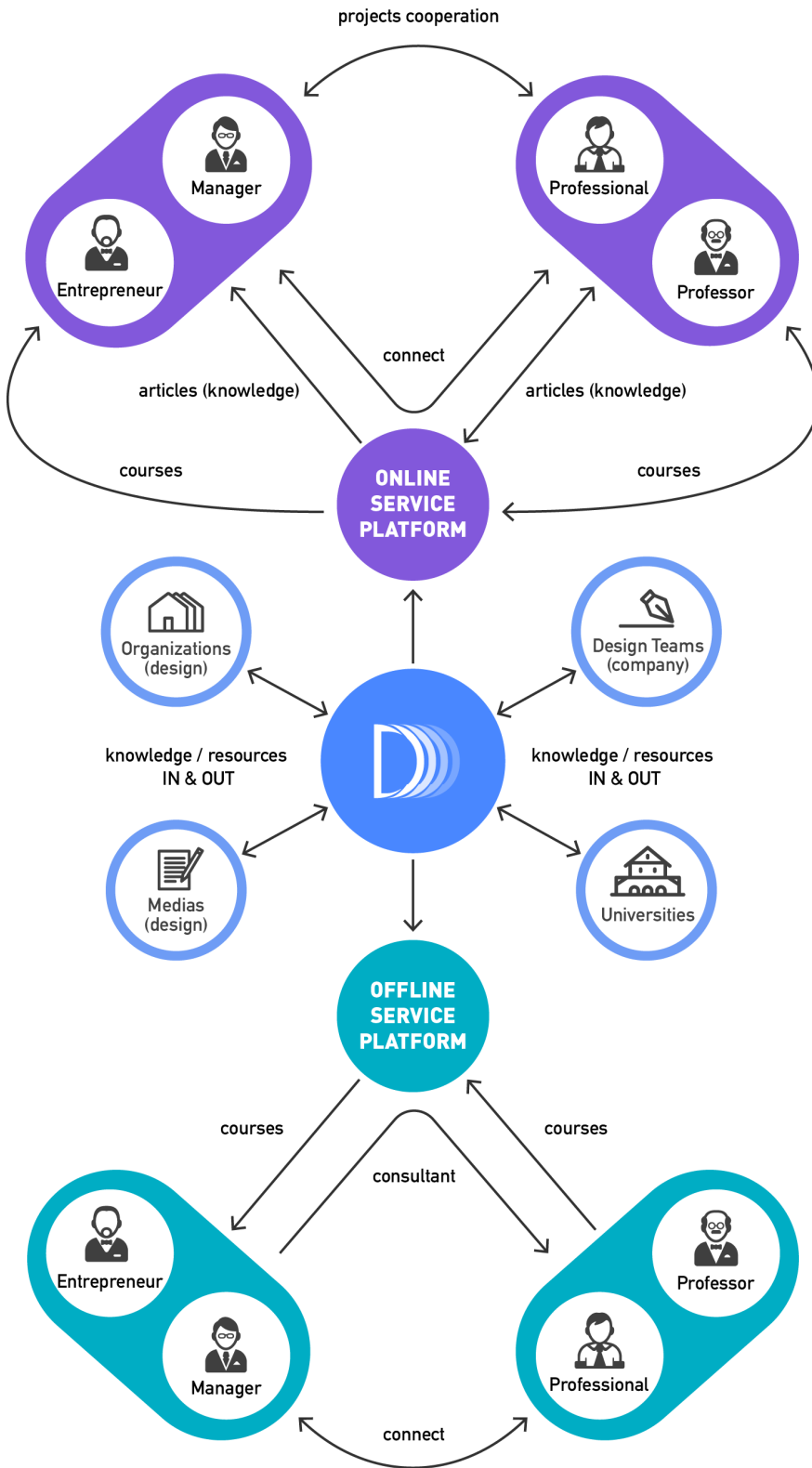


Figure 6.9 General Product Service System Map

to learn more and deeper about PSSD. Professional, flexible, light education experience is what this service like to take to users. Therefore, in this part, to make sure of professional and diversity, the professors in Universities, the senior designers in design companies or managers who finished a successful PSSD projects will be invited by PSSDER, planing the online courses together. Meanwhile, it is more effective to cooperate with some online education brands like lynda.com . The online courses are “small” but quality. For reviewing and further learning, all references of course such as sliders or related essays will be attachment in every online course page to downloading.

Networking System is the key tool for building the PSSD people network. The main value is connecting or linking. All users can register and enter the individual information into the system, and then to be a PSSDer. With the tech-support form google map, every people verified by system can be like a landmarks in map. User can accord to their needs to find and build links with the appropriate designers or managers. If users want to have a project cooperation, or a discussion with the connected people, the system will also support a simple online chat or talk pages for these “stakeholders”. The networking system is a bit like light version of “LinkedIn”, it was designed to encourage more PSSD interactions and PSSD project cooperations, breaking the isolated transitional career cycles. Besides, the most important thing is forming the PSSD people network equals developing and constructing the PSSD knowledge system.

6.3.3. Offline Services

The offline services will be offered by PSSDER design centers located in different cities in China.

Offline services have two: education and consultation. For offline education, PSSDER invites the professors or senior designers as tutors, mainly teaching the managers who were interested in PSSD but did not touch it. Depending on needs of managers (transformation of company, or new retail, or smart city building, or social innovation), different customized courses can be chosen. The contents of workshop are mainly made up of perceiving stage, practicing stage and sharing stage. The purpose of this education service is not training their design skill, but making them to own an enjoyable PSSD learning experience. Through the experience, letting them realize the value of PSSD and clarify the importance for company, and then developing or engaging in PSSD projects, being one of “PSSDers” in Chinese PSSD network. With the offline education service, connections with professionals and professors are built. Consultation service can be launched automatically.(See [Figure 6.10](#))

In addition to the regular services, for marketing and arising attractions, the PSSD activities are hold by PSSDER from time to time.

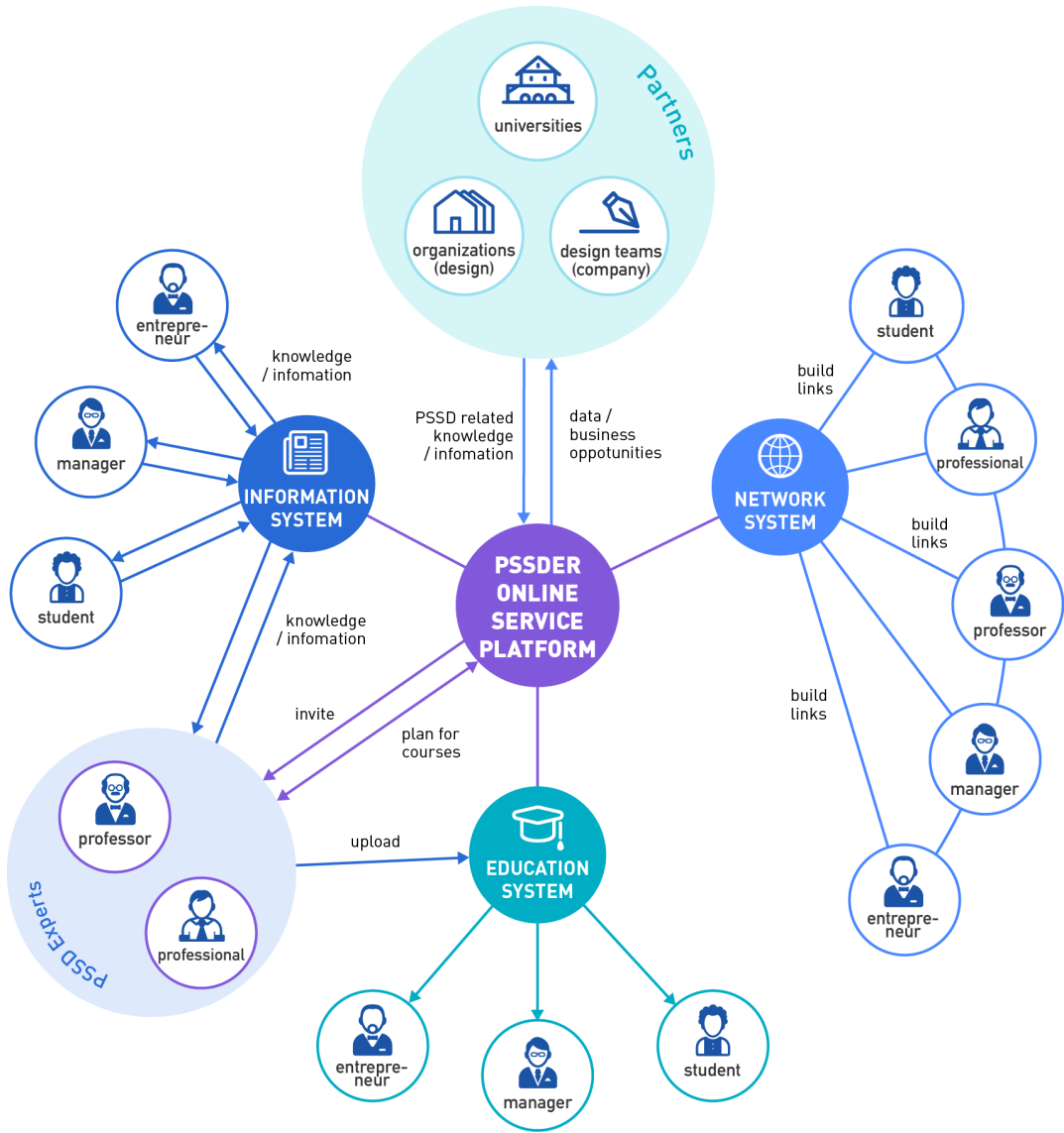


Figure 6.10 Online Product & Service System Map

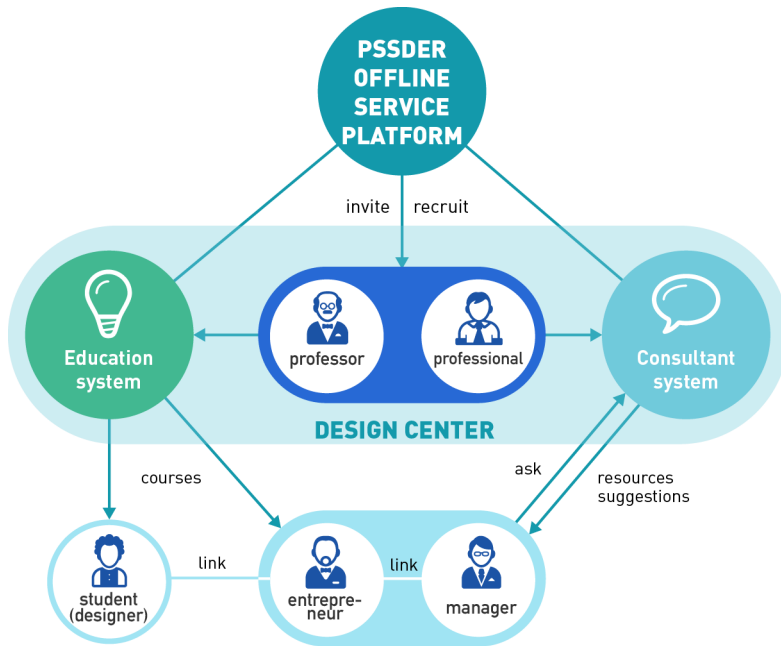


Figure 6.11 Online Product & Service System Map

6.3.4. Links & Interactions between Online & Offline Services

The first important link is in offline and online education system. When people attend the offline courses or workshops of PSSDER, a series of customized, arranged online courses will be given for free to your application. These online courses can be as knowledge supplement and extension of offline courses or workshops, giving people a completed professional education experience. Additionally, the services of the live broadcast and recordings of offline course or workshop will also can be found in individual's application or website, which makes entrepreneurs or managers who cannot come to class or miss some classes because of busy business to have second chance to attend the offline class or workshop.

The second link is about network. When people finish the offline courses/workshops, his/her identity in PSSD network will be verified directly and at same time be marked a special symbol. This symbol means this person have got the professional trains of PSSD, which could bring the person opportunities to touch more resources or collaborations in network.

The third is about follow-up services. After offline courses, PSSDER will do a series of follow-up services for individuals. Following the progress of the manager's or designer's PSSD project and giving the relative guides, suggestions and resource are partly delivered by online services. When the project finishes, the service providers of PSSDER will help to make the project into a professional cases study and then to exhibit it in information system. This can increase the individuals influence in network and take more potential benefits. (See Figure 6.12)

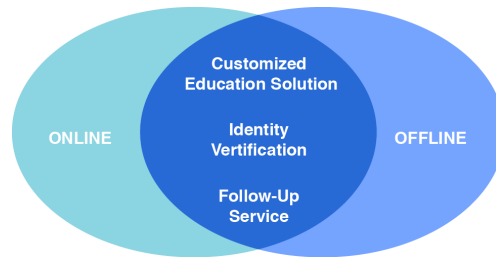


Figure 6.12 Links between online & offline services

6.3.5. Business Cooperation

Design Teams



TANG



S.POINT
指南创新



IBM Design

CONTINUUM

designaffairs



Google Design

frog



Microsoft

ThoughtWorks®

精中
CBI China Bridge

Organizations



ixDC



SDN∞

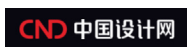


FUTUREGOV

Universities



Medias



6.3.6 Fund Streams

PSSDER will mainly get profit from online & offline courses service offering. Customers need to pay for these courses or workshops. Consultant service is another profitable way. Besides, with partners, there are many different kinds of cooperations such as advertising or holding activities together, which is one of key fund stream in system and could bring profit as well. In the other hand, PSSDER need to pay for tutors work, platform developing and offline space renting. (See Figure 6.13)

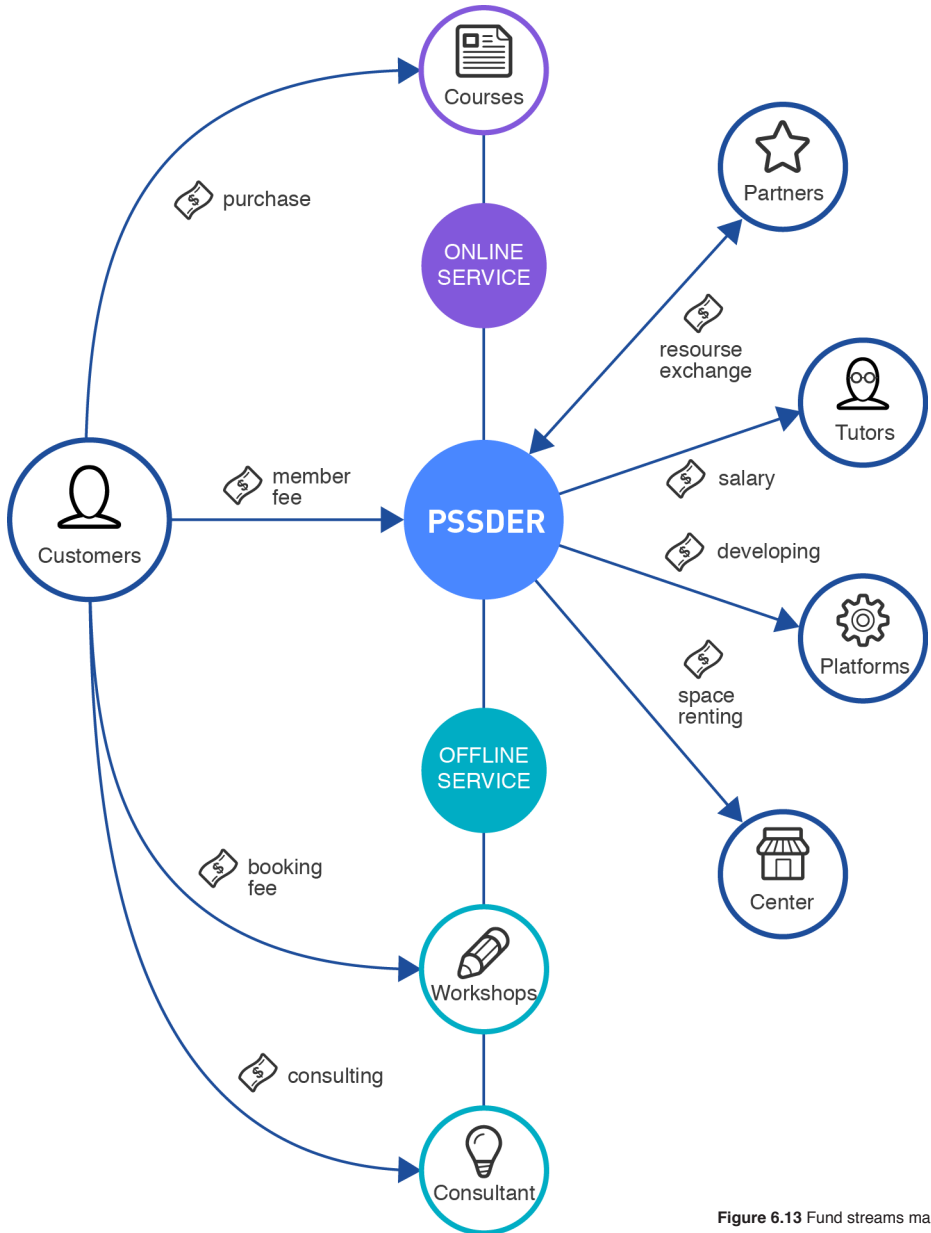


Figure 6.13 Fund streams map

6.4. User Segment & Personas

As it mentioned before, There are 7 types of people who have large amount of possibilities to use PSSDER's services. Below is personas of these 7 types people and they supported the customer service journey design and touchpoints design later.

Persona 1

Bio:

Ding is a young manager in this local traditional fabric manufacturer. The factory has ran for almost 50 years, the main business work is producing textile and fabric and then selling. Recently because of the economic globalization, they also do OEM (Oriental-Equipment-Manufacture) for some fashion brands such as ZARA, H&M, GUCCI etc. His father is last manager of this manufacturer. After he retired he just gave the right of management to Ding.

Nowadays, his factory is not run very well because the market competition is fierce and he can only use the "price war" to win the low profits from business. Therefore, he always discussed about how to plan the new strategy or do transformation to win the more profits with some bosses around him. During the discussions, he knew the possibilities of design and created interest on it. But as he had few resources in design cycle, he did not know how to think or do and still lack the confidence on the changes the design could bring. His greatest wish is some design expert can have some courses for them and then build a reliable cooperation with them to upgrade his company. Additionally, he also hope to have lots of relevant design successful case studies to read. He said this could help him to build confidence.



Yaping Ding

Age: 38

Title: General Manager

Work Unit: Changzhou Fabric Manufacturer

Hope: [Earning more profit through transformation of company](#)

Persona 2

Work Unit: Cynoware technology Co. Ltd.

Hope: [Making their technology and products to be a service system](#)

Bio:

As a Chinese technology company, their focus on developing different sensors and big data. Because he previous job is technology manager in Turin Networks in silicon valley, he know his company need to transfer their technology into not



Wei Wu

Age: 59

Title: CEO

only products but services. However, in China, his networks are limited and still know few about relevant design talents and knowledge. He now is cooperating with design school of Jiangnan University but he think it is not enough. He want to be with more exports, discuss and do some awesome business, offering a systemic solutions for their customers and then occupying the main market.

Persona 3



Weiguo Chen

Age: 52

Title: Head of Urban Development Department

Work Unit: Government of Jiangsu Province

Hope: **Creating more smart and good infrastructure and public services for urban citizens**

Bio:

Chen's department is responsible to making plans and related policies for urban development in Jiangsu province of China. What he did is not simply establishing one-by-one buildings, but coming up with one-by-one smart city solutions which can provide happy city life to people. With the development of urban city, people are looking forward a better and better public services and living condition. He found the old infrastructure and public services plan cannot fit people's needs anymore. Smart city building strategy is his main job direction right now. He had a team of technology, but after several projects, he realized technology in one part of smart city solution and also need the supports from designers because the satisfaction of citizens to new services or infrastructure is not good enough.

Persona 4



Jie Huang

Age: 38

Title: General Manager

Work Unit: Associate manager of CSR Department

Hope: **Doing charity or funding in an innovative way, creating the social value and enhancing the brand's influence at the same time**

Bio:

Because of the MBA background, Huang can assist the general manager to plan the CSR strategy well by her professional business management knowledge. As a export manager, She understand the importance of social innovation in CSR. She know that comparing with donating or unilateral giving, a good social innovation can not only solve the social problems more sustainable and effective, but also can produce a very positive and huge brand influence. Therefore, for this points, she want to learn some knowledge about PSSD and service design, cooperating the professional service designers or PSS designers are also necessary.

Persona 5

Work Unit: Politecnico di Milano

Hope: Working for strategy design, projects and researches. Expanding the Chinese Market.

Bio:

Fois like China and Chinese people, willing to build connection with them and have been China many times. Now he have a reveal design projects in China. But he is a Italian and have not much resources in China, thus he want to build a his network like in Italy, connecting his Chinese students and partners in China. Besides, he also like to know the design environment situation in China. He think these things could get benefit for his project and business in China.



Luca Fois

Age: 69

Title: Professor & Advisor

Persona 6

Work Unit: ThoughtWorks

Hope: Promoting self-abilities, accumulating more practical projects experiences and then to be specialist designer in this field.

Bio:

After graduation from Polimi PSSD, he worked in ThoughtWorks in China. ThoughWorks company culture creating a positive self-learning environment. Apart of working, every workers in there are learning something new everyday and try to be better. Therefore, Wan hope to learn and know knowledges and updates about PSSD, service design, experience design and strategy design using his spare time. Of course, he also like to build his partners networks, because this would benefit for his career development.



Jun Wan

Age: 28

Title: UX Designer

Persona 7

Work Unit: Politecnico di Milano

Hope: To learn advanced design knowledge, to further her master-degree study on service design in future

Bio:

Li is a product design student in Guangzhou Academy of Fine Arts. But in studying process, she found her interest was on UX design and service design. She thus prepared to go to aboard to get a master-degree study in future. Now about all product design studios' works in school, she just did some relevant service design or system design for its product intentionally. She also want to know some seniors who also studied service design or PSSD in foreign school, because she think the sharing studying experience can enable her to do righter decision for her career.



Feifei Li

Age: 23

Title: Design Student

6.5. User Journey Map



DURING

PSSD Elementary Acknowledge

Register / Book a Workshop

Customization

Online & Offline Study



Website Application

Website Application Design Center Staff

Website Application Design Center E-mail Study Plan

Website Application Design Center Tutors Staff Other Students

Read the information & knowledge on PSSDER online service platform

have some online courses and online / offline speeches

Feel it is necessary to learn deeper about PSSD

See the information about workshop / offline course on PSSDER website or Application

Pick the course type based on individuals needs, then book by APP or call

After book, the PSSDER staff will do a short talk with user, knowing his/her expectation and insights

Receive an E-mail or info in platform about the schedule and customized online and offline courses (special study solution)

Have courses and workshops in PSSDER design center

Have the relative expansion online courses

Open mind / know the up-to-date perspective & knowledges

Build connection with professionals and other entrepreneurs

Can know the benefits of classes / workshop

Have a confidence to centre

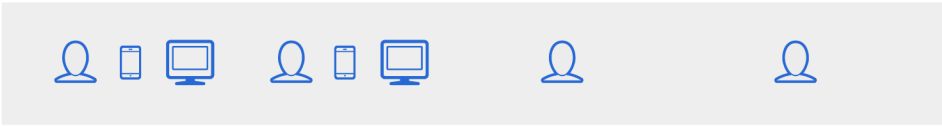
Get the personal and customized service

Meet the needs

learn something useful for their company

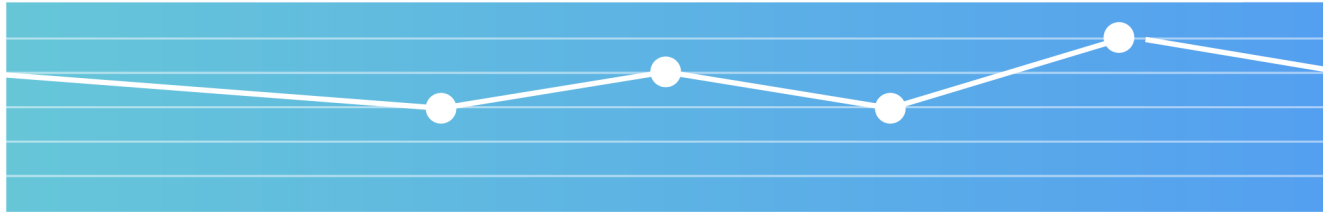
build connection with professionals and other entrepreneurs

DURING



Website Application Tutors Desingers	Website Application Design Center Staff	Design Center People linked	People linked
---	--	--------------------------------	---------------

By studying, realize the value of PSSD Have a plan to do PSSD project	Use the network function of application, knowing and linking people who are PSSD experts from different field Deisgn Center also can give some helps for good linking Chat and discuss each other	Business Meeting (can be in Design Center) Doing project together	Project Finish, Win the profits
--	---	--	---------------------------------



listien to innovative suggestions from professionals find the detailed current chanlenges the company encounter and know the futrue plan	Get the positive cooperation environment Efficiency and Effectiveness	Make money Promote brand influence
---	--	---

AFTER

Follow-up Service

Share Result

Link More



Staff
Phone Call
E-mail
Application



Website
Application



Design Center
People linked

Short interview,
expressing feedback
to PSSDER, for
better service later

Share the case in
PSSDER platform,
winning attention from
others

Link more and more
people in network, for
future projects
cooperation

Share success
experience to
PSSDER staff, the
project would be a
case study that can
read by others

CONTRIBUTING TO DEVELOPMENT OF PSSD IN CHINA

Better service offer
Branding

Marketing

Expand people
network, for future
cooperation

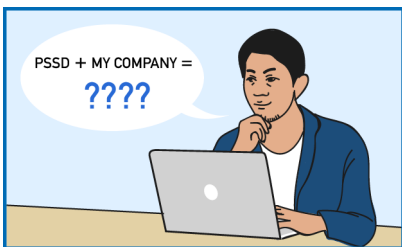
6.6. Storyboard



1. Ding is a young manager in this local traditional fabric manufacturer. Because this company was inherited from his father, thus the company is old and the business started to decrease. Ding was worried about it.



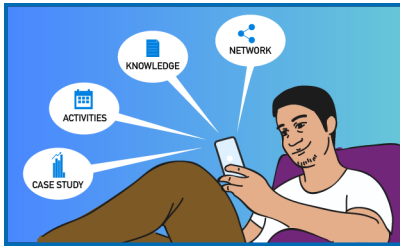
2. When Ding visited the website of ICEO.com, he found and read the articles about PSSD and PSSDER services. Then, when he attend the conference and party organized by CGCC (China General Chamber of Commerce), he heard the information about PSSD from other managers' sharing.



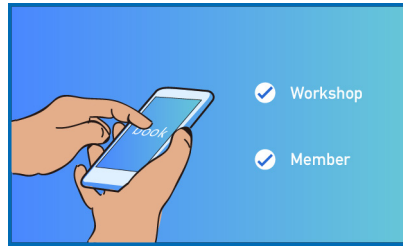
3. Thus, Ding started to have a curious on PSSD and interest on it. He was thinking if he can use this design knowledge to help his company's upgrading or transformation, then getting performance growth.



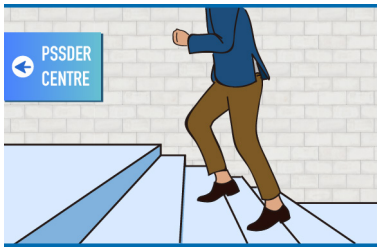
4. He checked the relevant information on website and then found PSSDER, feeling it is good, and then downloading the relative application.



5. He used his spare time to read the case studies, professional perspectives and knowledges about PSSD. These information strengthen his faith on PSSD.



6. Therefore, he got to know there were some offline workshops and courses for manager like him, then booking the courses and a workshop according to his need. Meanwhile, he register PSSDER's membership, thus he can watch the online video courses.



7. The workshop days coming, Ding went to PSSDER Design Center, waiting for a exciting studying experience.



8. Before workshop, PSSDER staff asked Ding some individual information and needs, and discussed with him. The aim of this is offering later customized education services for Ding. Staff said to Ding they would arrange relative offline and online courses for him according to his need.



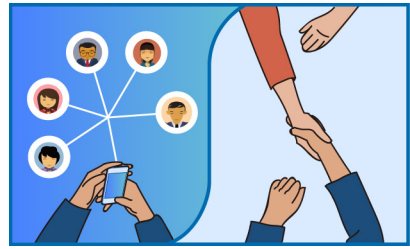
9. Workshop starting, Ding had speeches, discusses and practice experience in workshop. The most interesting part he think is practicing part, he like to cooperated with other managers and designers to interactive and to have ideas together.



10. In PSSDER education progress, there were not only offline courses(in workshop), but also online course. Ding had a "cross-over" studying experience that made him feel very good because these customized study materials were planed well by PSSDER.



11. After workshop and a period of on-line studying, Ding had convinced PSSD and thought it was the time to integrate PSSD into his company's transformation project.



12. Ding used the PSSDER network to find the people he need in this project, including PSS designers, professors and some other people such as other companies CEOs who also attended the PSSDER's workshops. Then, linking, chatting, discussing, and cooperating.



13. Ding organized a meeting to kick-off his transformation project, inviting the stakeholders he built a link in network. He would like to using PSSD to make a difference.



14. The project lasted for a half year, his company was successfully conducted servitization of manufacturing. His company got rid of the situation where winning low profit from only manufacturing. Now he can get 3 times profit increasing by offering different other services.

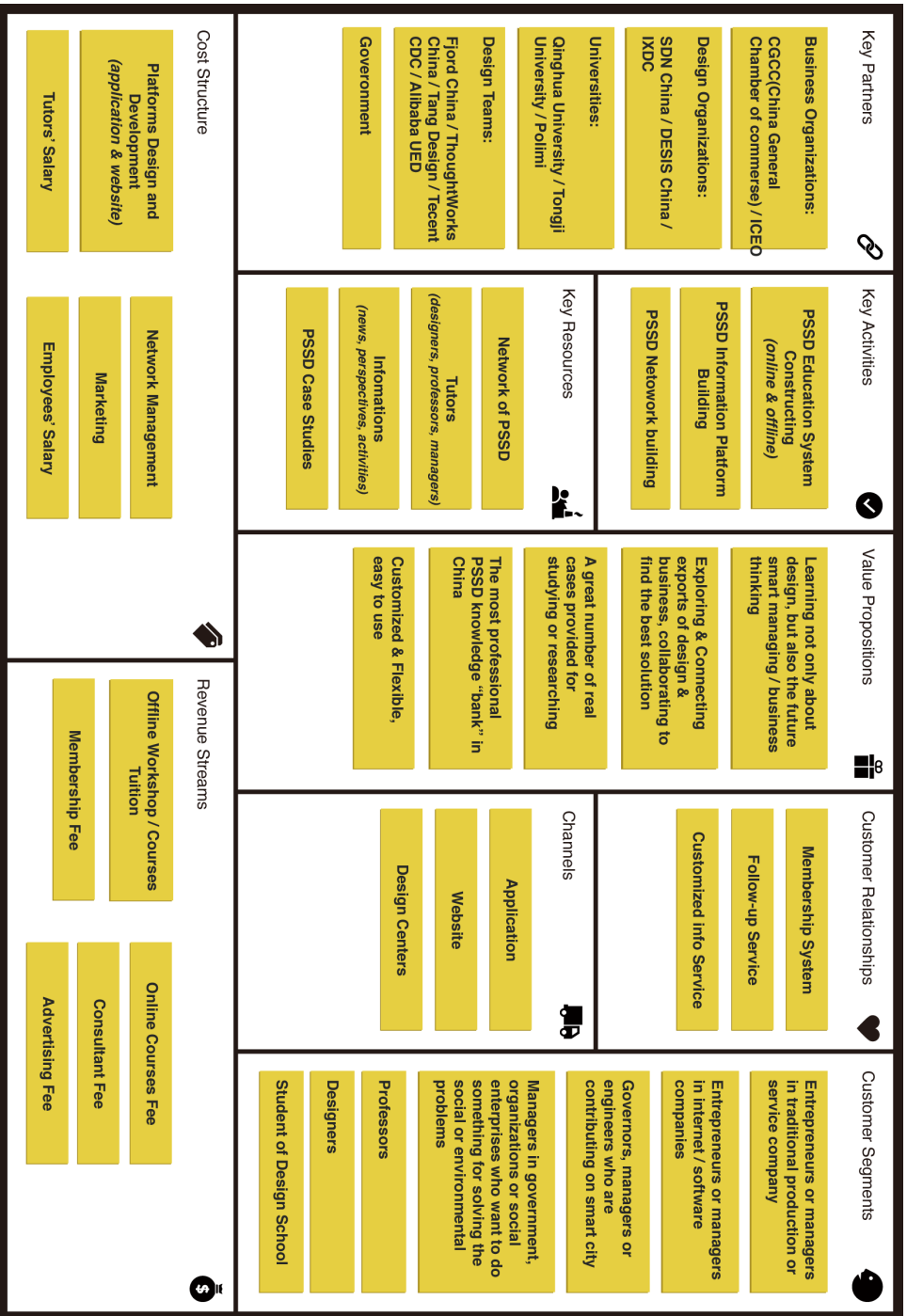


15. PSSDER staff did the follow-up service for Ding. The staff gave Ding some suggestions about PSSD after project. Meanwhile, she recorded Ding's success experience, and then writing a article as a new case study for the PSSDER platform.



16. By the power of success and PSSDER network, more and more knew Ding from his enterprise transforming project. Ding got more business cooperation than ever. He believed PSSD indeed make a difference on his company.

6.7. Business Canvana



7.TOUCHPOINTS DESIGN



7.1. Application Design for Online Service

7.1.1. Why APP

In China, PSSD is in the beginning stage, thus making it to be easily accessible and cognizable is the main task to development. Especially, the target groups, entrepreneurs and managers, designers, they always are busy so that have been used to absorb or learn knowledge by mobile devices because of flexibility. In addition, with the development of IOT and experience design, more and more things can be done by linking the mobile devices. Compared with the “website” product, APP is obviously a future trend that could bring people more exciting experience with the interaction between offline service and online service.

Therefore, APP was chosen as my design focus. Perhaps application cannot offers a deep study or interactions between people for PSSD, but just as the roles of the online service should play I mentioned before - touching and linking, it could do a good job.

7.1.2. Design Principles

The application includes 4 systems, 3 of them are service systems - information system, education system and network system, the left one is individual account management system. For these 4 systems, the principles of the design (Figure 7.1) are as below:

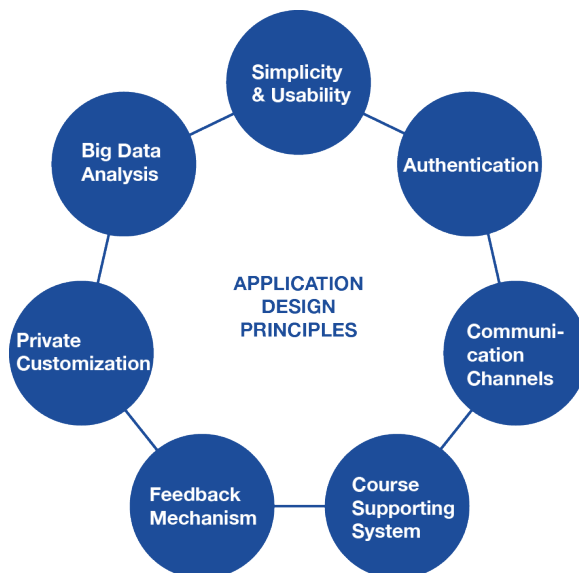


Figure 7.1 Application Design Principles

1. Simplicity and Usability

Because the application is 3 in 1 product (system), the design should be as simple and usable as possible. To keep the light of product, the application only focus on the main function of each system and then do the simplest interactive design for them. The application was designed to give user a linear experience. The information architecture is not beyond 3 layers.

2. Big Data Analysis

The biggest difference between online service and traditional service may not be in its form of expression, but in the integration and regeneration of data. The user's learning behavior and habits in the system can help us adjust information and courses products and optimize the online service system, which is of great value to customization, research and continuously upgrade of system.

3. Private customization

Most of the traditional teaching methods are one-to-many. They cannot be individually customized according to the individual circumstances of each student. Private one-to-one preparations are too costly, and online education systems can be very good at a constant cost. Meets the needs of private customization.

4. Feedback Mechanism

Numerous experiments have demonstrated the importance of feedback mechanisms in learning. Online education systems can set up feedback in many places to keeping abreast of the learning progress and learning situation which allows students to be motivated to learn. Every time there is a good feedback after the training or after class, the learning effect will be greatly improved.

5. Course supporting system

The course system includes recorded courses, live courses, and course products. The concept of curriculum products is a free combination course format, supplemented with data, and is not limited to live or recorded formats. A course product requires a sufficient amount of teaching and research in educational institutions to become a qualified educational product.

6. Communication channels

Learning is lonely. Finding like-minded partners and mentoring teachers can bring persistence in learning.

7. Authentication

This is a application in professional field, thus the professional and authentication is very important for user experience and exception. Only if keeping the authentication, user can get real knowledge and helps from real professionals and the PSSD eco-system could be formed positively.

7.1.3. Features & Architecture

(See figure 7.2)

The application has 4 basic systems: information system, education system, network system and individual profile management system. These 4 system can be switched through 4 different icons/tabs in main tab bar. In every system, the user can get the linear using experience, aiming at creating the light feeling to users even if it is a 4 in 1 application.

After signing in, users would be into the information system primarily. Like news application, user can check and read the updated information about PSSD every day. The information system has 2 layers. In education system, users can browse the online course products, then getting, managing and having online classes. Besides, user s can watch the public speeches related to PSSD in this system as well. The information construction of this system is consisted of 3-4 layers. Network system has the same layers as education system, but it looks more like a social tool. Users can know, find PSSD stakeholders in network and then talk with them. The final one is individual information management system. In here, users can manage all information that relating to the previous systems here. The layers of it are 2. The function tabs drawer, searching, filter and talk alarm would appear in every layers , which enable users to find the information they want conveniently.

7.1.4. Wireframe

(See figure 7.3)

The purpose of wireframe was to determine the layout of application. Similar with principle of application logical and information structure design, the layouts of pages were designed as simple and clear as possible, making users to read and interact in every page easily. The wireframe also helped on understanding of interaction logic.

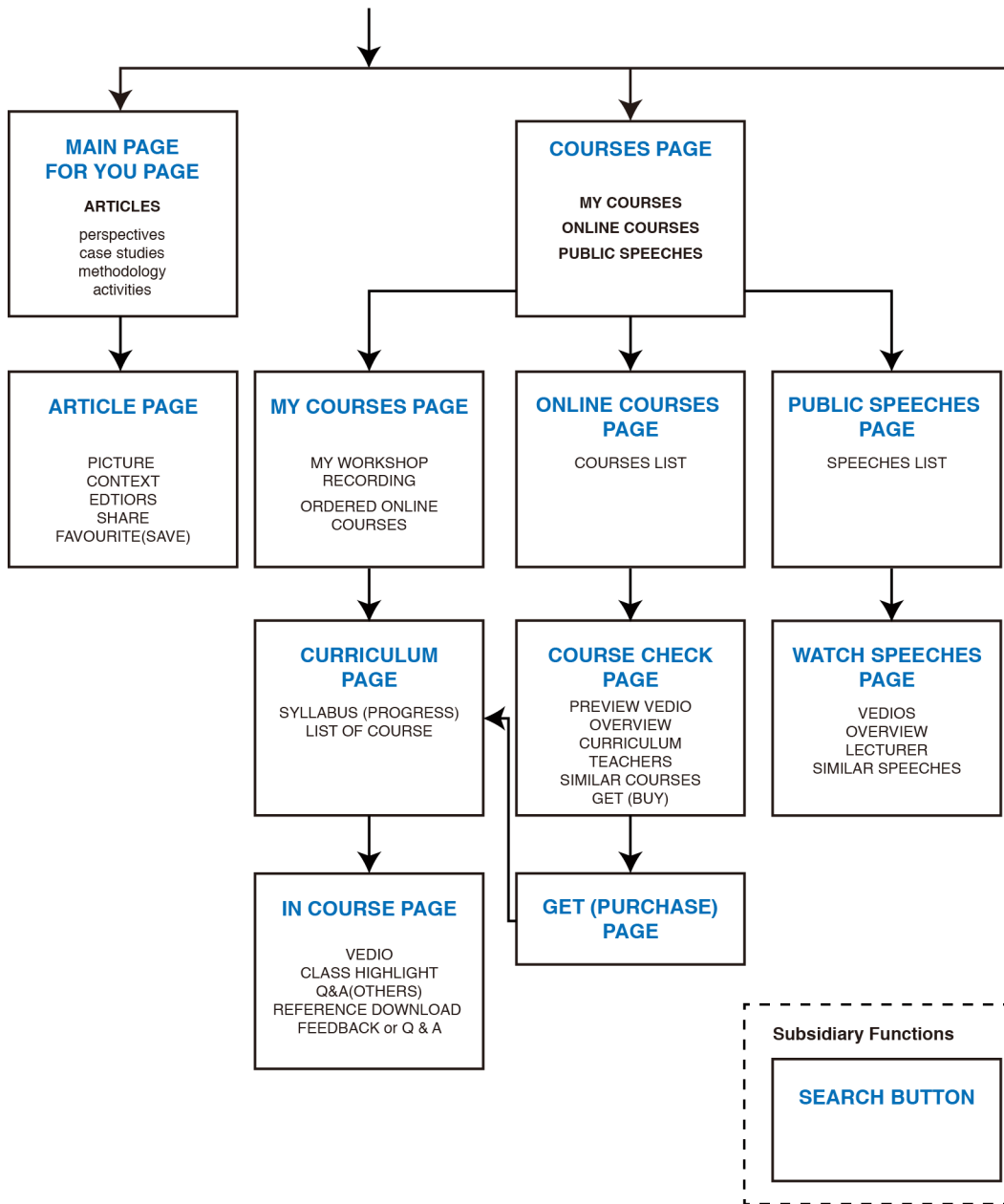
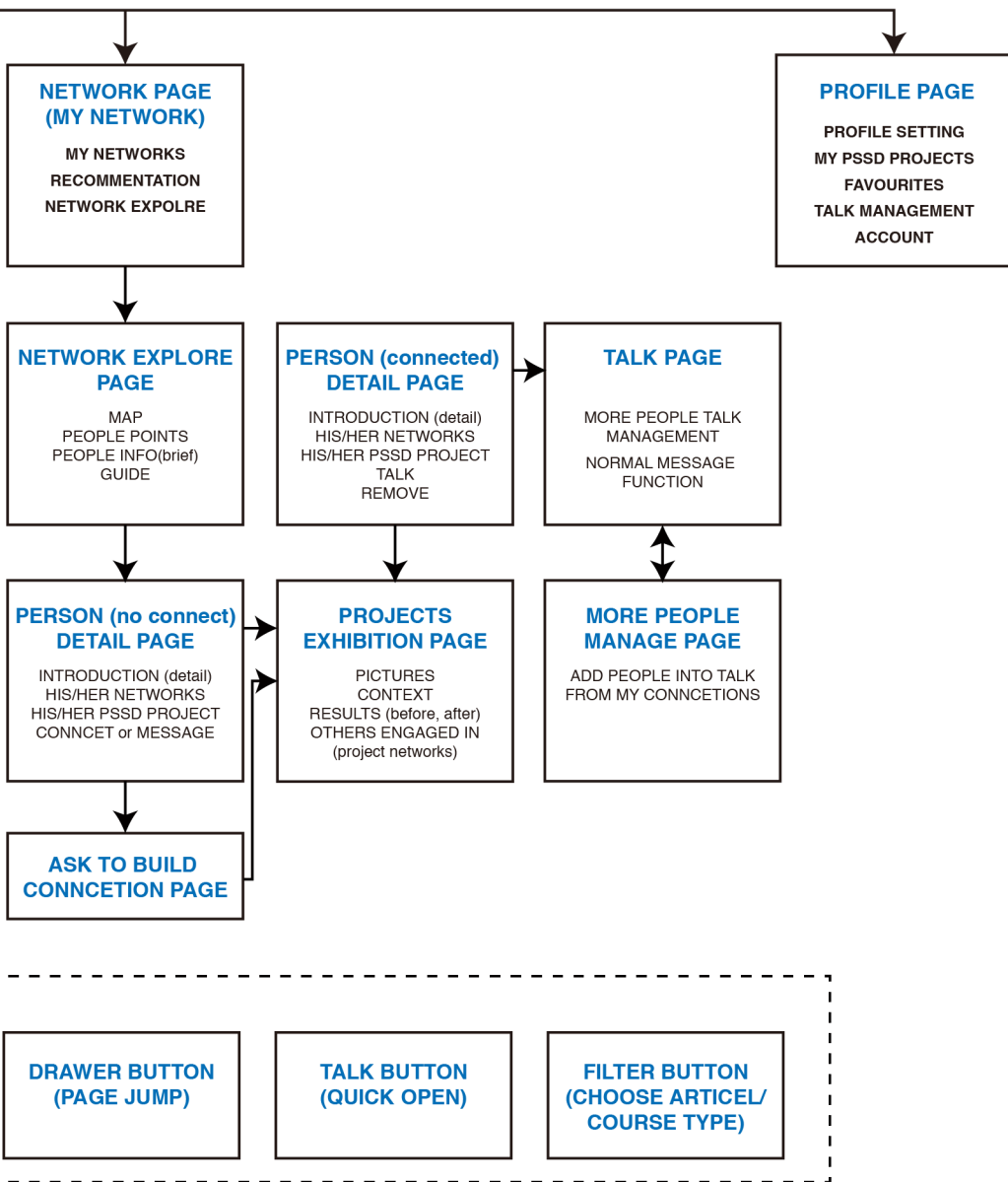


Figure 7.2 Application Architecture & Logic Map





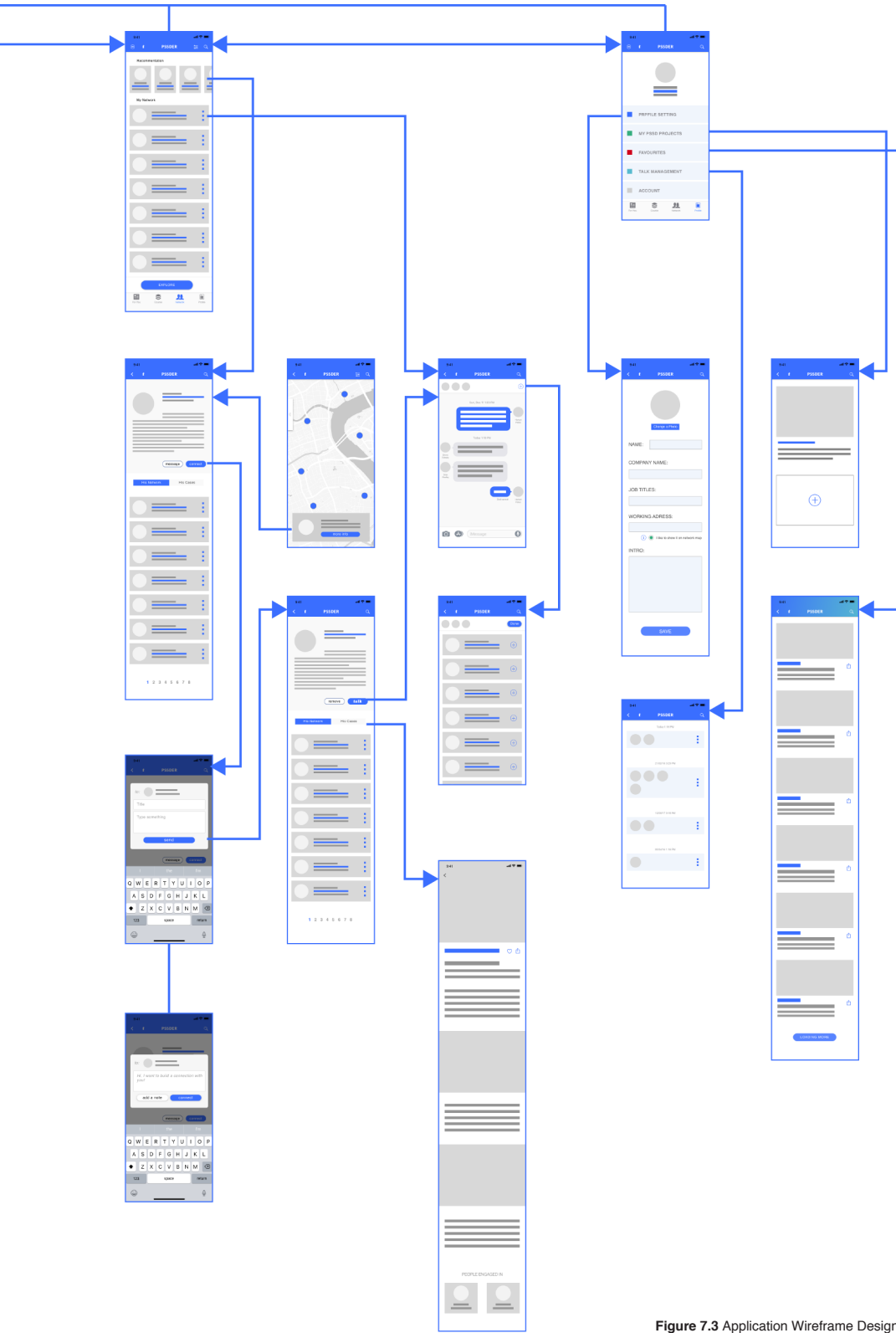


Figure 7.3 Application Wireframe Design



Xin Xiangyang
Design School of JN University

Xin Xiangyang
Professor (Interaction / Service Design)

My Network

Chen Yan
General Manager

Chen Jian
Project Manager

Zheng Yuting
Senior Service Designer

Zhu Liyan

Learning Experience

CONTINUE STUDY

- 1. What's Service Design
- 2. Make-or-break Moments
- 3. Building Brand Consistency
- 4. Be Easy to Do Business with
- 5. Using Service Design Cards

CHIQ
CHIQ TV APP - CHIQ Vision

PS50 / DESIGN STRATEGY
CHANGHONG CHIQ System

Making the products of brand to be the eco-system which can realize a various of user's value

MY COURSE

ON-LINE COURSE

PUBLIC SPEECHES



Yaping Ding

My Courses

My Network

My Favorite

Perspective

Methodology

Case Study

Activities

Online Courses

Public Speeches

PSSDER

MY COURSES

Graniuca Loparco

0% COMPLETE

Zero UI



Design Thinking: Data Intelligence

Andy Goodman

Charity Hiker

CHARITY HIKER From Tencent Design

100 million dollar donation collection in 3 days, creating a donation miracle by PSSDER

Website

https://www.service-design-network.org

If you for your studying!

ask questions to our tutors or give suggestions, please let us know!

Hi, I have a project about improving service system of my company. Do you feel interested to help me?

OK! Tell me more about it please.

I am sorry I can't. But I will recommend you a friend who is professional.

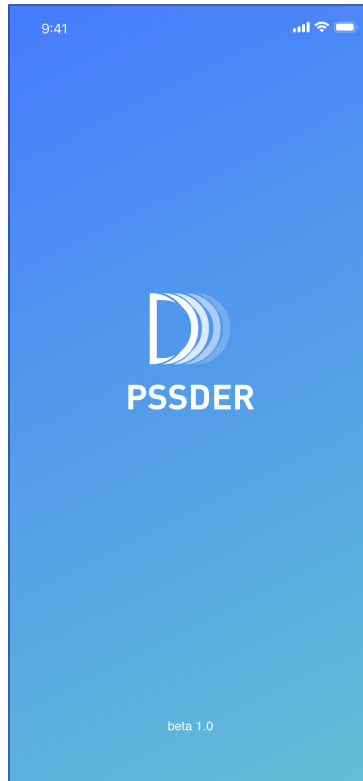
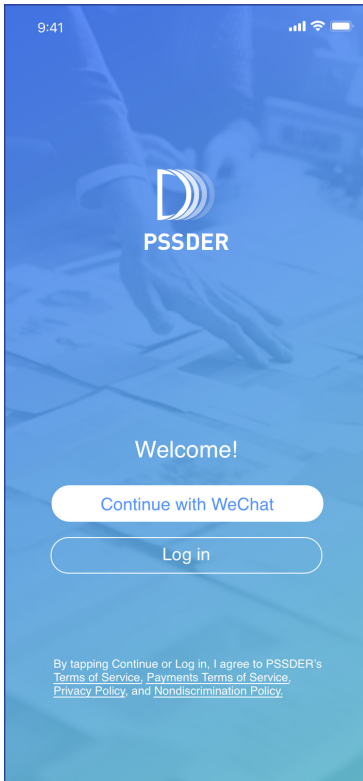
Thank!

7.1.5. Final Prototype

In the final step, the vision part was taken into consideration. The layout, interaction and contents were designed in details. In this Phase, every page in application will be introduced:

REGISTER & LOADING PAGES

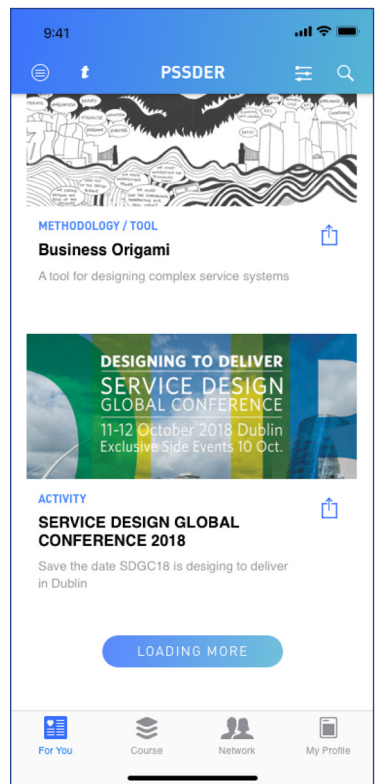
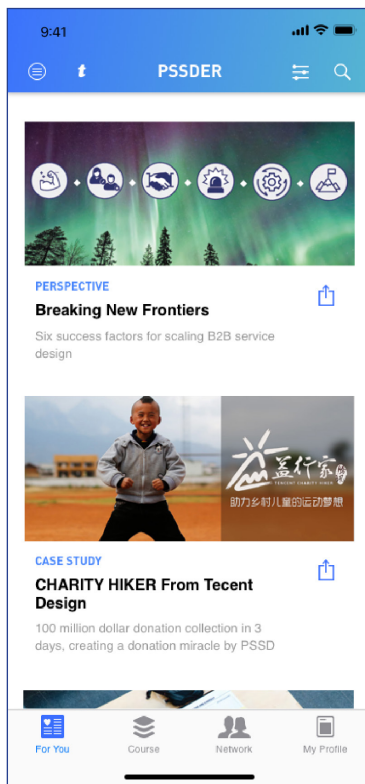
When user firstly use PSSDER, he/she will enter individual's data and register a PSSDER account for him/herself. Because authentication is necessary to PSSDER system and networks. Every time the loading page will show the logo and value of PSSDER to users.






MAIN PAGE (FOR YOU PAGE)

The main page is also called “For You” page. In this page, user can see all information related to PSSD as soon as opening this application. These information includes PSSD-related perspectives, PSSD case studies, new PSSD-related methodologies or tools introduction and offline activities information. Considering the possibilities of PSSD in China, taps about new retail, organization transformation & upgrade, smart city building and social innovation were labeled in each article. “For You” is as the title because in this page all information because in this page all information were customized by big data collected from users’ individual information and browsing habit. The target of this page is enabling users can get update knowledge and information at any where and any time.



ARTICLE PAGE

If user tap a article he/she feel interested in, he/she would be into "Article" page. In this page, user can mark the article as his/her favorites and share it to other people. Apart form the article, the avatar and information of editors can seen at the end of article. User can enter the editors' individual page to try to build a link with editors. Additionally, "maybe you also like..." can lead users to explore more similar articles.

CASE STUDY ♥️ 📄

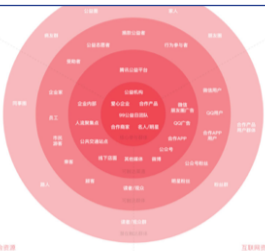
CHARITY HIKER From Tencent Design

100 million dollar donation collection in 3 days, creating a donation miracle by PSSD

New challenge

The new changes brought new opportunities and also brought with us new design challenges:


1. How to better connect resources and give play to the advantages of resources?
2. How to better engage users?
3. How to better express the activity brand of 99 Public Day?




RESULT

Expanding the forms of participation beyond donation and donation, further reducing the barriers to participation and making it more convenient and simple for more users to participate.

EDITORS



Yan Chen
TECENT
Design Manager of UX Department

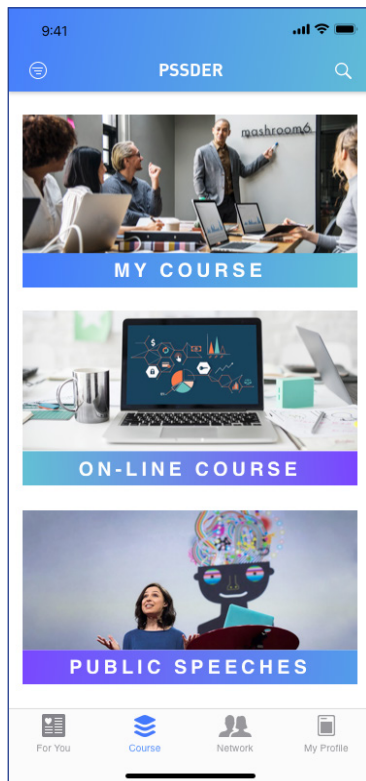


Zhen Kai
TECENT
Senior Designer of UX Department



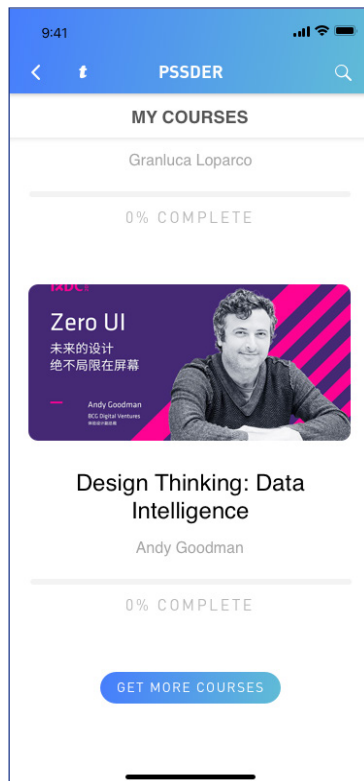
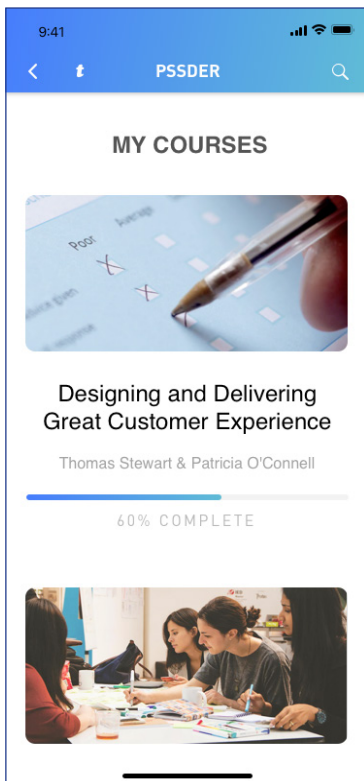
COURSE PAGE

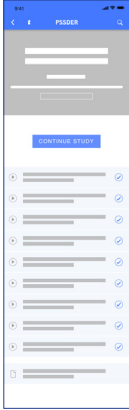
The second tab in tab bar is about education system. User can watch and manage his/her online courses they have in “My Course” page. In online course product page, user can browsing all online course product and add the course products they like into his/her “My Courses” page. In the public speeches page, user can watch the different speeches about PSSD online for free.



MY COURSE PAGE

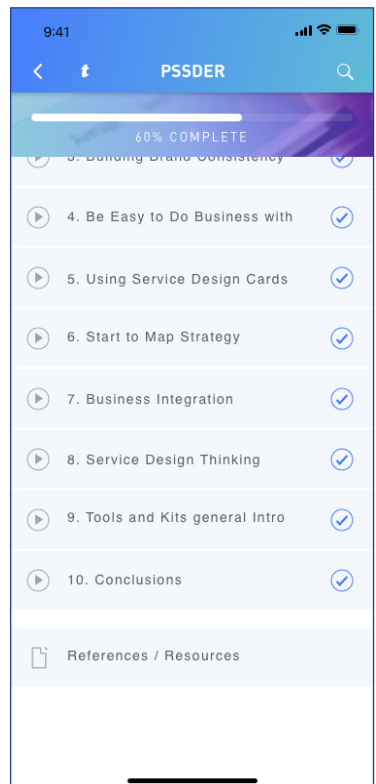
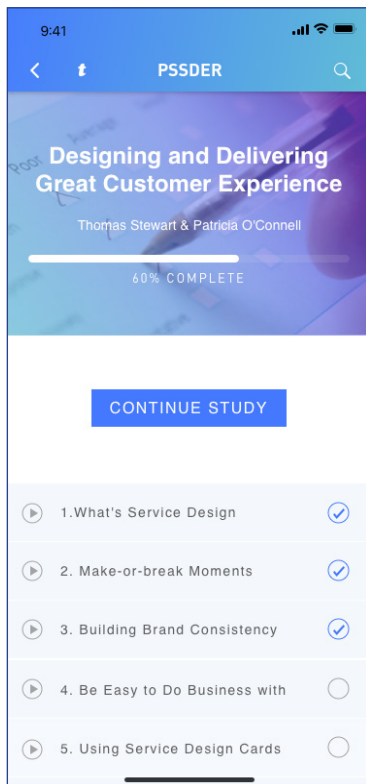
Entering the “My Course” page, all courses products user had were listed and user can see the progress and basic information of courses here. When user want to get more online courses, he/she can use the link in the bottom to jump to online course products page directly.





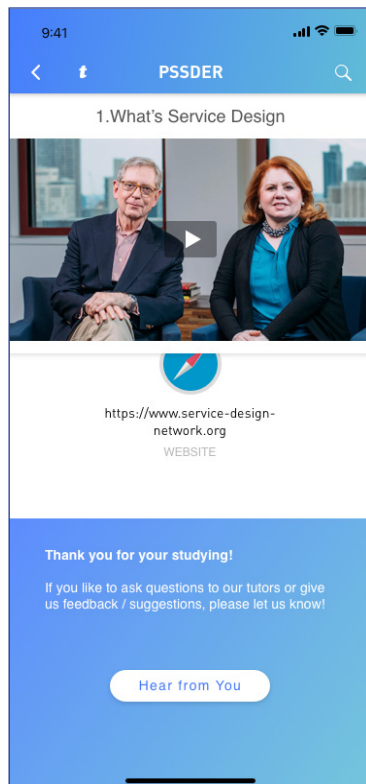
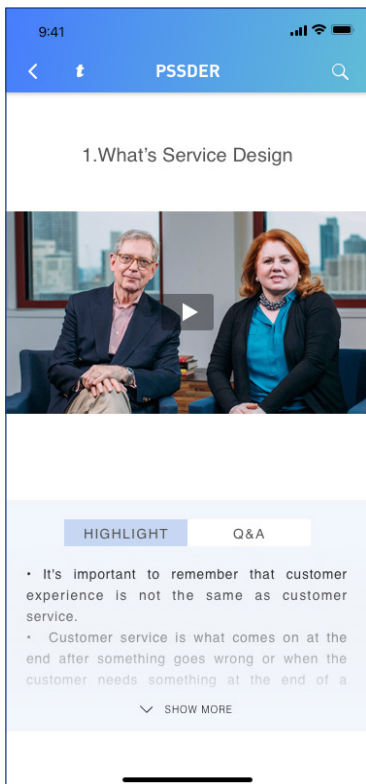
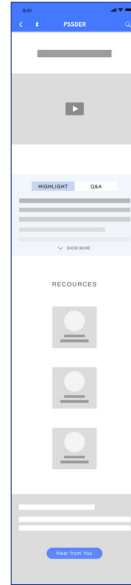
STUDY PREPARING PAGE

When user choose (tap) one course product the page will jump to next layer where user can check the curriculum of this product, process of studying and related reference.



ONLINE STUDYING PAGE

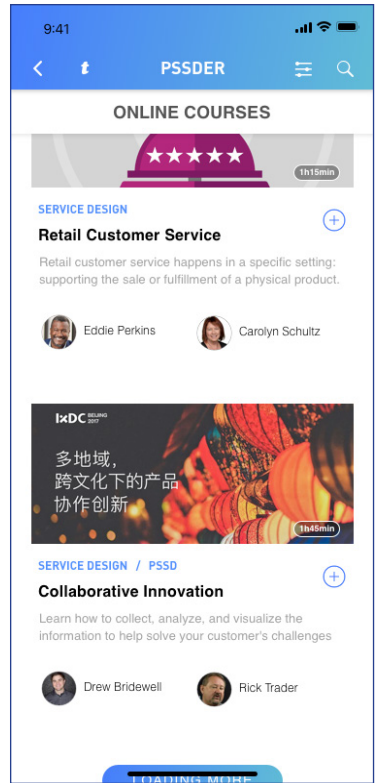
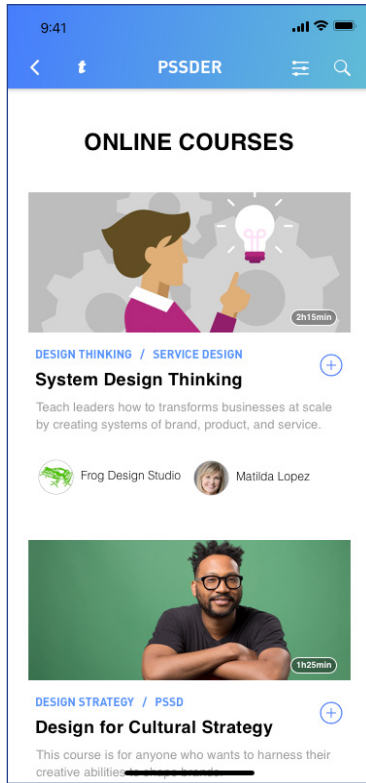
The next layer is online studying page. When user choose one class title and then enter this page, he/she will see the page is made up of 4 parts. The first part is class video. The second is class highlights where user can see the key points of class by the drawer interaction. Meanwhile, user can check the Q&A at the same part by tab interaction. Here questions were asked by other students(users), user can check it and then get to know the answers of almost questions which could have during the class. Next is tutors' introduction and information, followed by feedback system where user can asking tutor questions and have a interaction with other students.





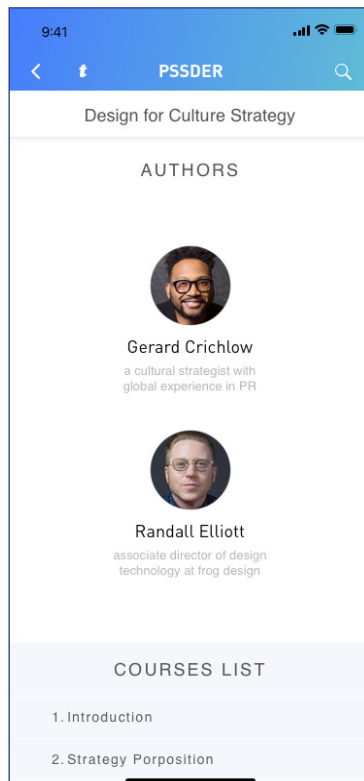
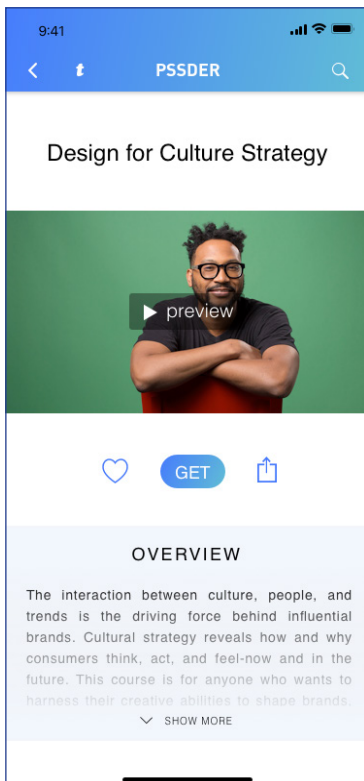
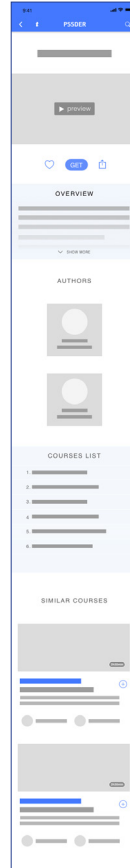
ONLINE COURSE PRODUCTS PAGE

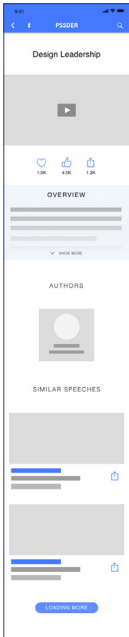
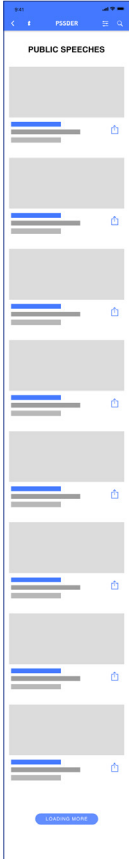
In online-course products page, user can check different courses products recommended to him/her by system (big data). These course products show users the basic information including picture, title, subtitle and tutors. If user like to book or get one course product he/she only need to tab “plus” icon at the left of the course title.



COURSE PRODUCT INTRODUCTION PAGE

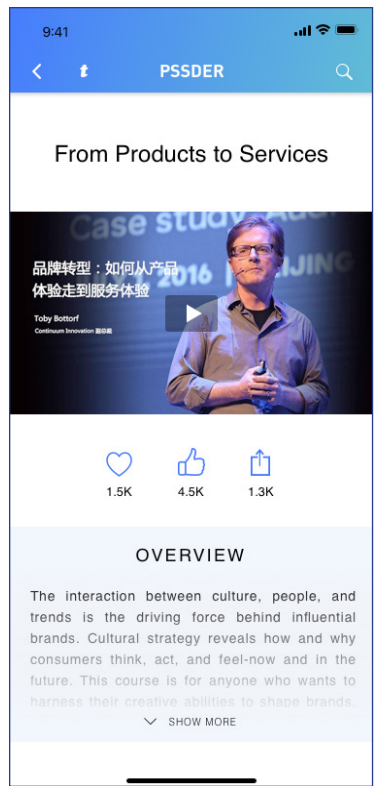
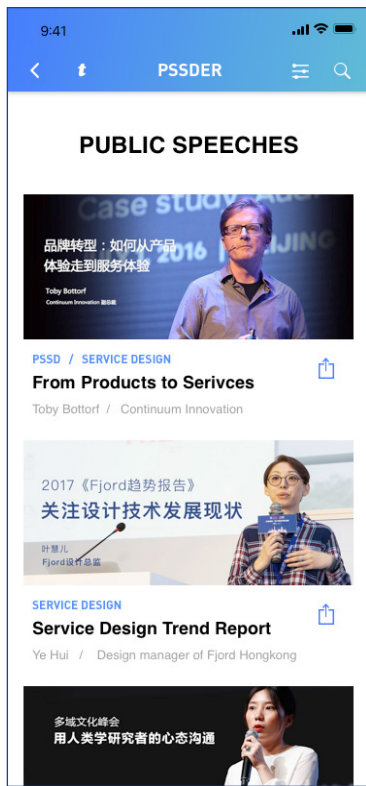
In detailed course product introduction page, user can have a overview for the product. There is a preview video which equal to an introduction (the first part) of series classes. Then, the brief and tutor introduction are followed by. Finally, the curriculum can checked by users at the end of page. If user have a interest after checking, he/she can buy or get (for member) by “get” button.





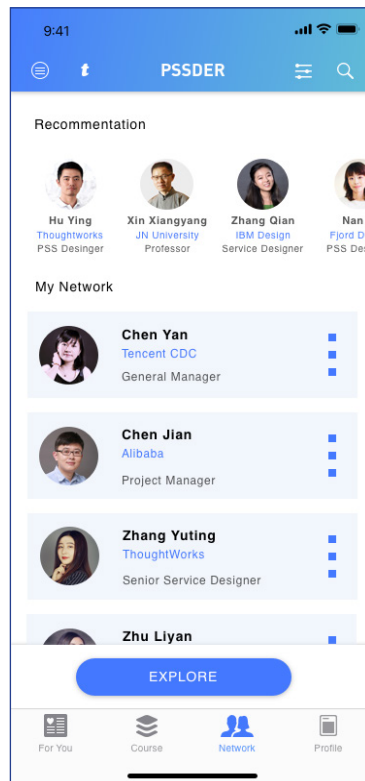
PUBLIC SPEECHES PAGE

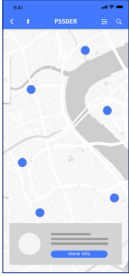
Public speeches page is similar to course products page. All speeches are listed in same page, user can scroll and check. The only different place is the “plus” icon that replaced by “share” icon. The layout of speeches-watching page is similar to online-studying page, the difference is that in speeches-watching page is tend to “socializing”. User can share, thump up, comment and do some other interesting interaction with others in this page.



MY NETWORK PAGE

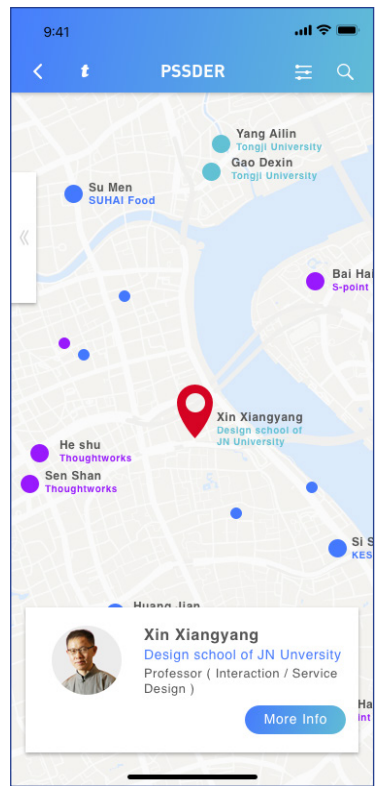
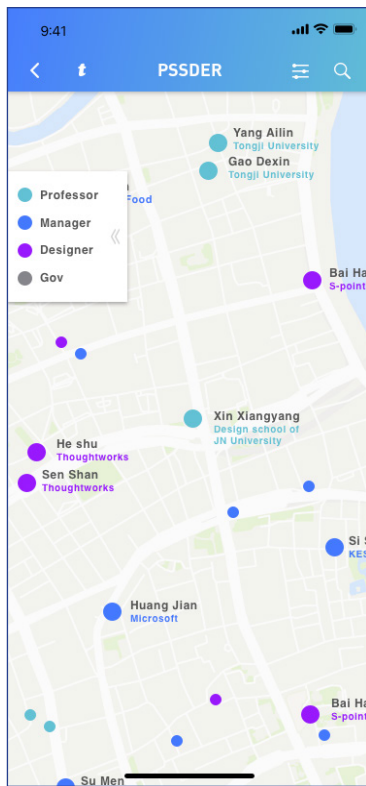
Network system is the third tab in main tab bar. When people jump to network system, the first layer they will see is “My Network” page. In this page, the people user has built the link with are shown as a list here. The system will also recommend “people you like to know” in PSSDER network to user according to individual data. In addition, the link to “exploring” page is always shown on screen. User can go to find people he/she want to connect by this link.





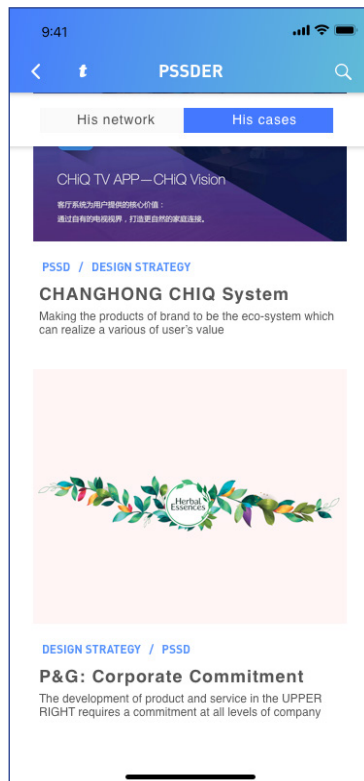
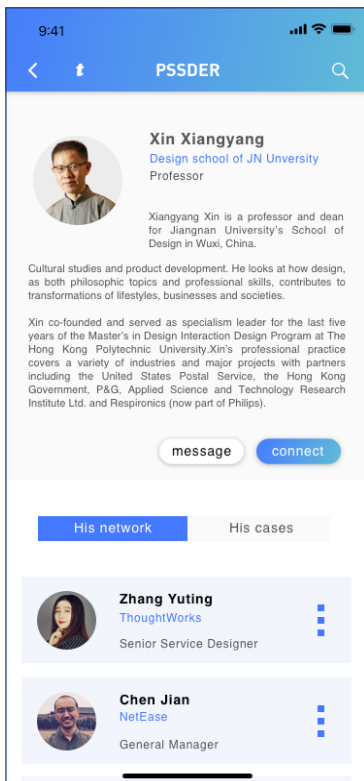
EXPLORING PAGE

“Exploring” page seems like a map. Differing from google map, it only show all people in PSSDER network on map. Different colors refer to different roles in network. On this online network map, user can easily find the appropriate stakeholders he/she like to connect for potential cooperation.




INDIVIDUAL INFO PAGE

When user have a interest to someone on map and want to connect with him/her, he/she can enter this people's individual page to check the details. In addition to the basic introduction about this people, the details include also the people's individual networks and his/her PSSD projects (ongoing or finished). If the person is the "right" one, user can send the message to ask for connection.







CHIQ TV APP—CHIQ Vision


系统为用户提供的核心价值：
通过应用与电视连接，打造更自然的家庭连接。

PSSD / DESIGN STRATEGY


CHANGHONG CHIQ System

Making the products of brand to be the eco-system which can realize a various of user's value

By redefining the structure, form, and relationship of multiple terminals such as TVs, refrigerators, and air conditioners with people as the center, a multi-terminal collaboration, convenient interaction, and wide connectivity are realized with a complete set of technical architecture and ecosystem. Changhong's "Home Internet" is a tradition. Appliance companies started a new blue ocean.




Changhong promotes the "home internet," the most fundamental core is to make home appliances really "become a personal consumer belonging to each specific consumer", so that home appliances provide personalized experience based on individual preferences and habits of consumers. Zhao Yong believes that Changhong's role has long been more than just a traditional home appliance manufacturer, but also includes new roles such as technological innovation and integration providers and system solutions service providers.



the new "three-coordinate" strategy is far-reaching for Changhong, indicating that Changhong is undergoing a tremendous transformation - from the traditional home appliance manufacturers to home appliance giants with internet genes, from the simple to the consumer sales terminal in the past Users provide personalized service experiences and services. The landing of this strategy also indicates that the new business model of Changhong's "terminal + data + content + service" has been clarified.

PEOPLE IN SAME PROJECT



Genjun Ye
General Manager of Design Department, Changhong


INDIVIDUAL'S PROJECT INTRODUCTION PAGE

ASKING TO "CONNECT" PAGE

9:41

PSSDER

Xin Xiangyang
Design school of JN University
Professor

to:  Xin Xiangyang
Professor

Hi, I want to build a connection with you!

add a note
connect

Institute Ltd. and Resprionics (now part of Philips).

message connect

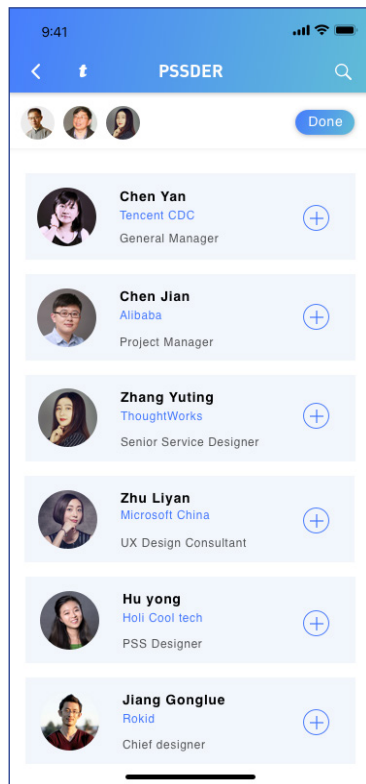
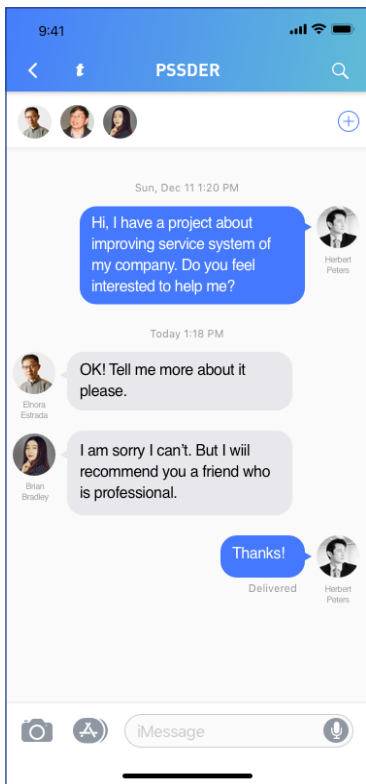
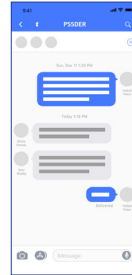
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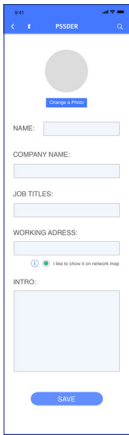
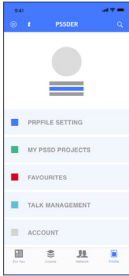
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M

123 space return

“TALK” PAGE

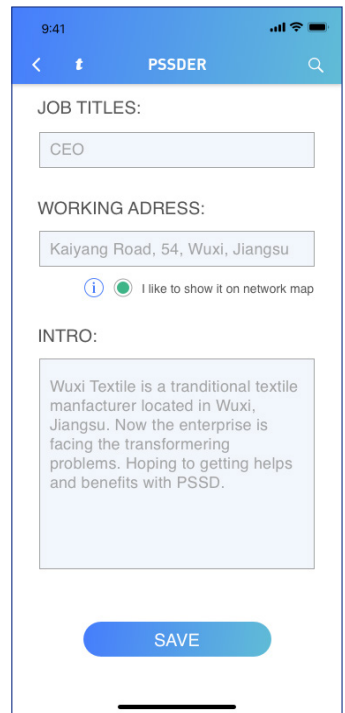
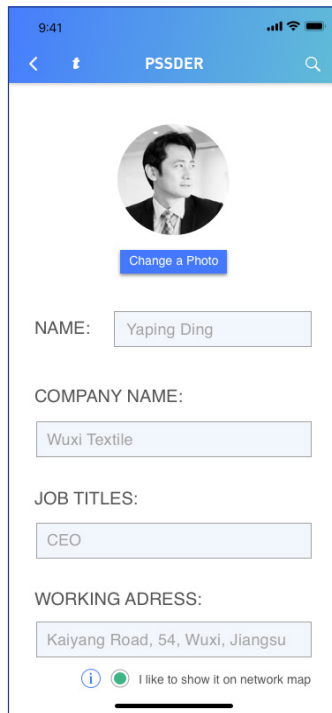
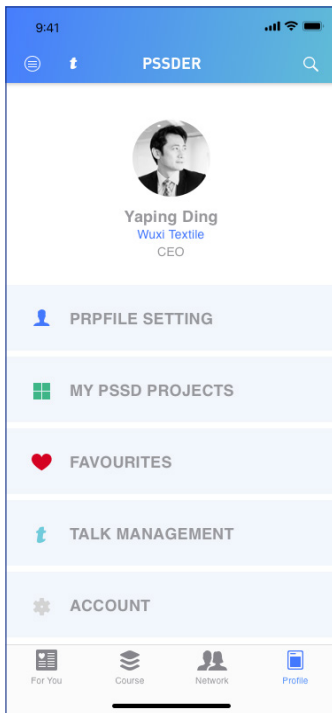
After connection, user can have a talk with this people by the “talk” system. This system works for “linking” but not for “interacting”, thus it is designed as simple as possible. The deep communication or interaction will be carried out by offline service system.

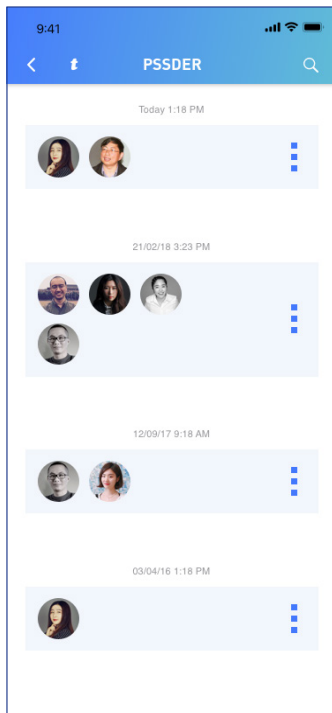
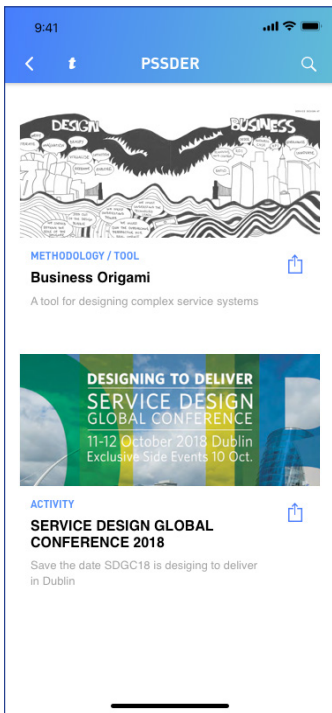
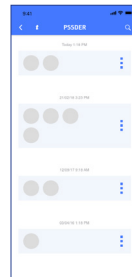
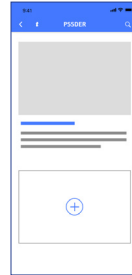
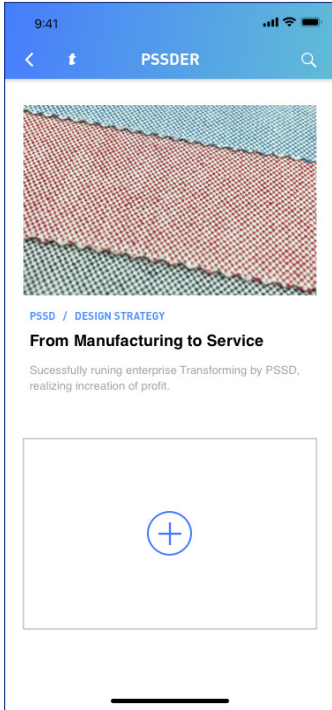


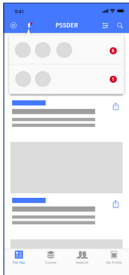


PROFILE MANAGEMENT PAGE

The forth and last tab is for profile management. Users can manage their account and profile information in this page. The contents which can be managed or edited are individual information, “My PSSD projects” (portfolio for designers), the article marked favorite, talk dialog boxes and individual account.



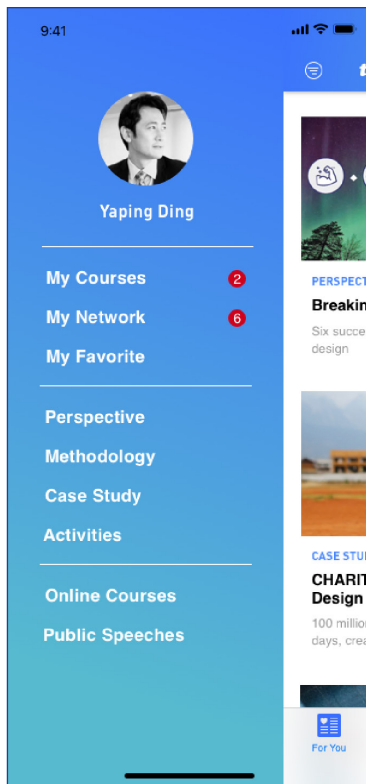




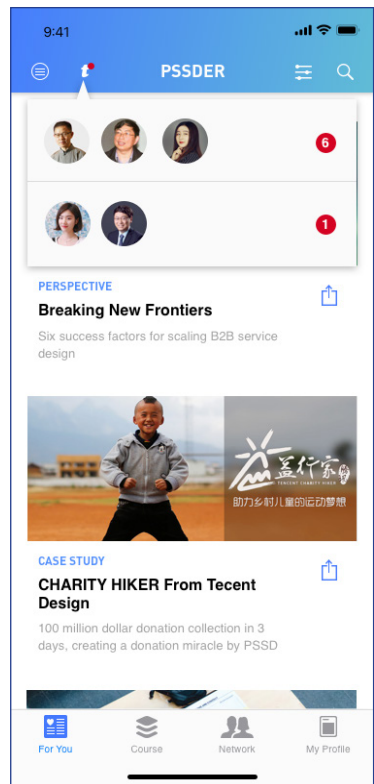
NAVIGATION BAR - 4 FUNCTIONS

On navigation bar, there are 4 function tabs. The first one at the left is the “drawer” that user can use it to enter the different pages and layers directly. The “talk” tab is near by, this function can alarm users to know that other people had new message to them and make them to can talk with others rapidly.

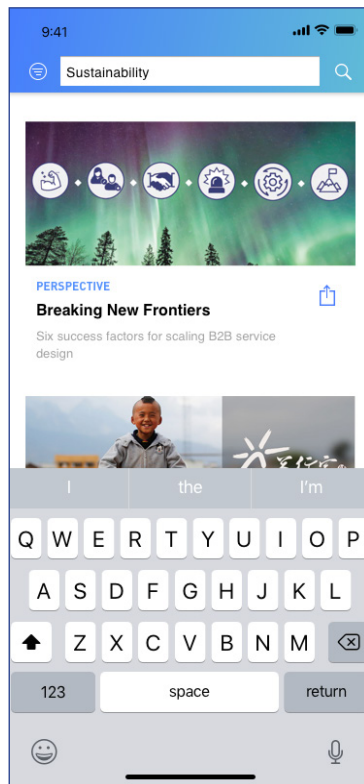
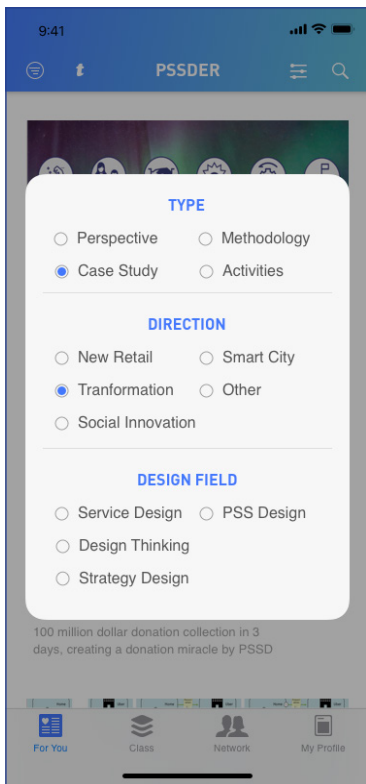
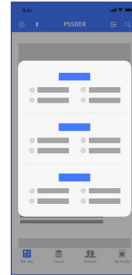
DRAWER



“TALK” ALARM



On the right of navigation bar, the function “filter” tab is here. It appear mainly in information system and online course system. The information and courses are classified by different design subjects (PSSD-related), developing directions and types (only in information system). This filter can lead people to find what they want quickly and accurately. The function “searching” is the last, enabling user to search the content at liberty.



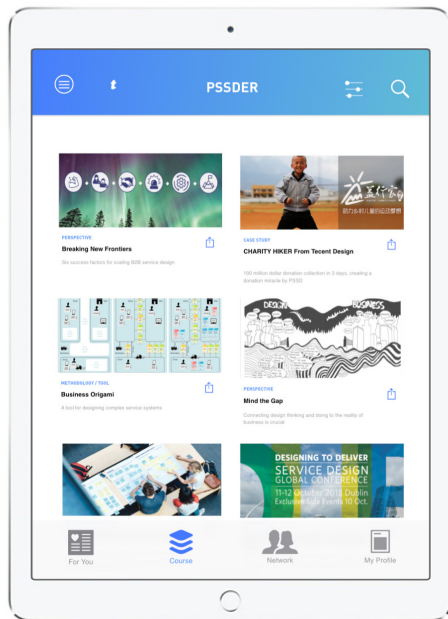
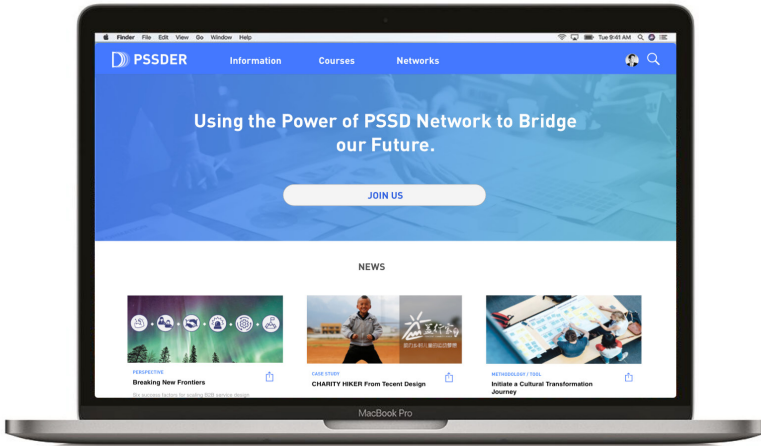


Figure 7.4 Performance on different devices

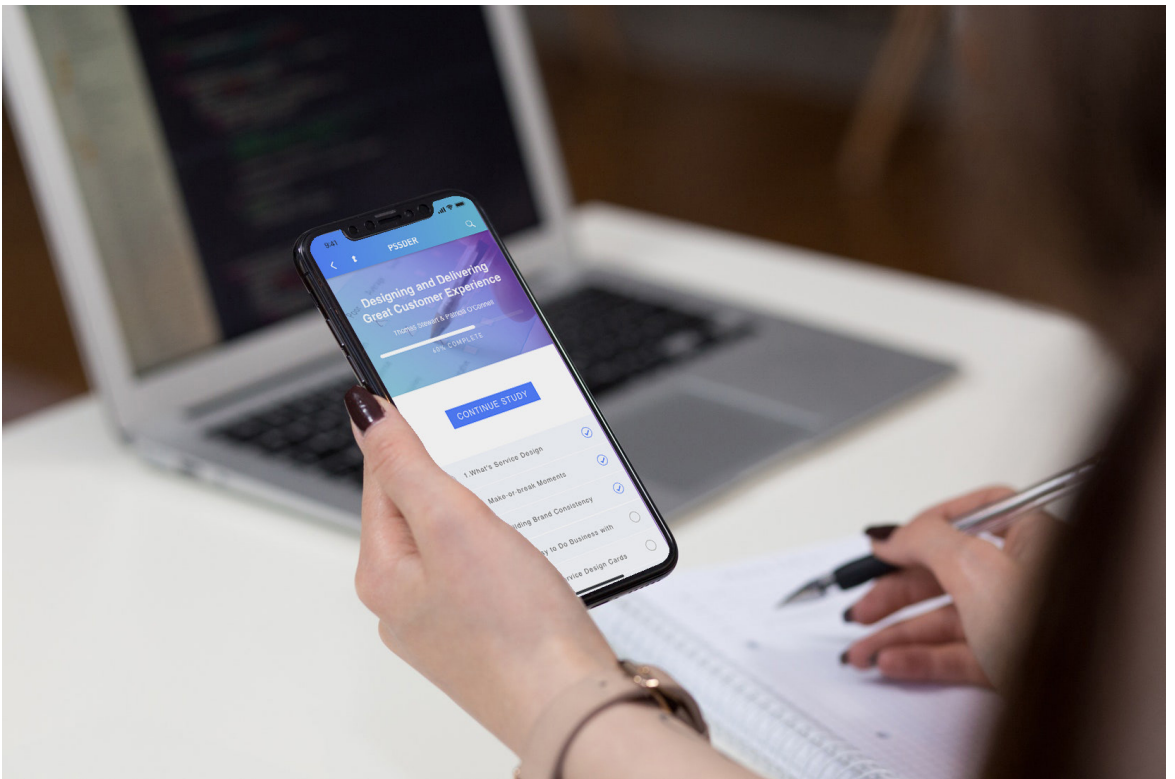


Figure 7.5 Effect in real environment

7.2 Offline Service: Workshop Design

7.2.1 Targets Deification

Before planning and designing the materials and process of workshop, the target of workshop should be clarified at the first stage. Offline service are customized to different groups by their different need, thus the targets of course are generally same but a bit different. Here I listed general 5 targets (Figure 7.6) of workshop as follow:

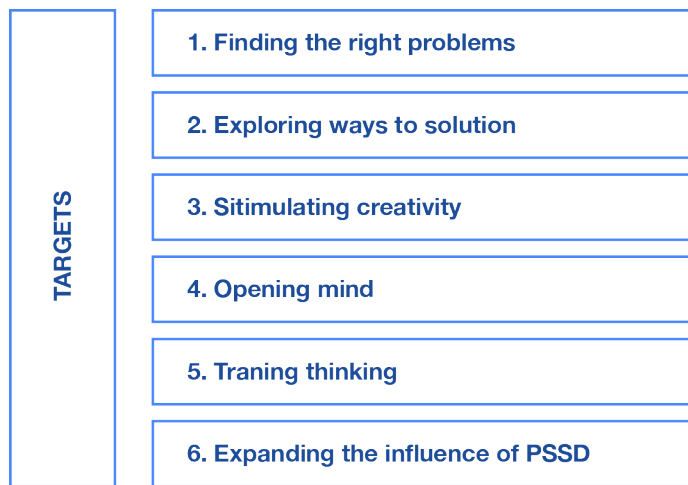


Figure 7.6 Targets of PSSDER Workshop

- Leading to find the “right” problem

Comparing with finding the solution, helping “students” to find the “right” problem is more important.. Thinking and method of PSSD should lead students to explore the nature behind the problems and insights of people. Only do a right problem identified, the later solution and design would be more effective and valuable.

- Way to solution

PSSD itself just is a new solution for current issues. Therefore, the principles, tools, thinking, processes of PSSD should be introduced to students and and them make them practice, letting them to get a new scientific, innovative, co-creative way to get the solutions and can applied it into their works later.

- Stimulating Creativity

The workshop is not only teach student the PSSD knowledge tools or methods, the more important is changing their attitude to innovation and training the ability of collaborative innovation, enabling them to be with leadership of innovation.

- Mind-Opening and Thinking-Training

PSSD is an emerging discipline that breakthrough a lot of conventional thinking and working process. By the workshop, breaking through students' inherent way of thinking and enabling them to see the different and advanced perspectives they never thought before is considerable.

- Expanding the influence of PSSD

Workshop participants are generally composed of people who have different background. Therefore, it is equivalent to popularizing concepts and values of PSSD in their companies or organizations. The workshop can make more people to understand how PSS designers usually work and think. If the output of workshop can greatly help solving the problems that their company / organization is currently facing, the PSSD can be recognized by more people.

7.2.2 Preparation

Before workshop, except planing the workshop contents and process, there are some other preparations important as well, they are:

1. Semi-Proposition to Proposition

The proposition should be not only based on planner's idea, but also should based on demands of students (Figure 7.7). At the beginning the topic can be semi-proposition and then determine the topic according to some students detailed demands, which can make students to have more real and immersive experience when studying and practicing. For example, in the stage of enrollment, the workshop's topic could be "Designing for transformation", the content of workshop could be general and flexible. And then, during the early period of enrollment,

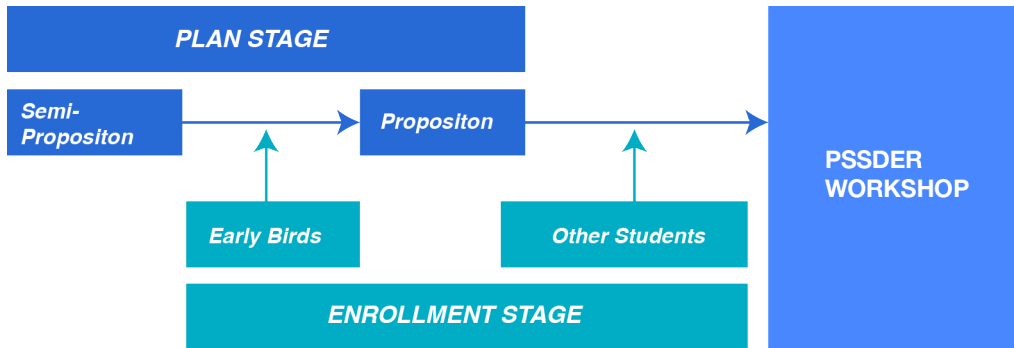


Figure 7.7 Process for Proposition of PSSDER Workshop

planner can pick a specific student and know his/her detailed demand(usually is an entrepreneur or manager), for instance, the students is a manager of restaurant who want to do a service transformation or upgrade. After that, planner could determine the topic as “Designing for transformation: creating an awesome food experience” and planing relative special courses and practice.

In this way, the contents of workshop will be always different and interesting. Participants also can receive a more real and immersive experience because the topic is just from the other participant nearby. Besides, helping other to solve his/her problems can be a good motivation of cooperation and teamwork. Of course, the way of proposition should told to applicants of workshop in advance. Schedule plan is also important. I believe this could be a new model of workshop.

2. Participants Identification

A success workshop definitely need a great collaboration between different people, therefore, in preparation stage, identifying the participants matters. I classified participants as students, guider (host), professionals and supporters.

-Students

The best studying in a workshop is not learning knowledge from tutors, but learning from other students. For this reason, the constitution of students is very important. According to different backgrounds, demands and topic of workshop, different students (entrepreneurs, managers, governors, designers even professors) are arranged into the same workshop. In this way, when it is in communication, discussing or project cooperating stage, students can get more valuable perspectives and insights from different angles. To one thing or problem, they can have a more holistic acknowledge which is demanded by PSSD. Therefore, having a great analysis on students individual data and doing a smart arrangement in workshop-preparing stage is necessary.

-Guider (host)

The role of guider / host is always played by workshop planner. He/she needs to have a good understanding of the goals and the whole process of the workshop. He/she also needs a good eloquence and logic, ensuring the progress of workshop. In addition to the host, it is better to have a few assistant guides with great PSSD knowledge. They can “walk around” in the workshop, helping the team when they face to problems.

-Professionals

In addition to host and assistants, the different PSSD professionals such as famous senior designers, professors or success managers with rich PSS experience should be invited to attend the workshop to do a speech for students in different workshop stage. In the end of workshop, they also can be as the judge who can comment on every teams results. Their participation can increase the attraction of workshop and bring students different and more course experience.

-Supporters

Supporters contains recorder and logistics. Recorder’s job is taking the photo and notes in workshop, supporting the marketing and platform building. At the same time, recorder is also an observer, he/she can record the good or bad points of workshop to support the improvement of offline service.

3. Place and Materials

The venue needs to accommodate several sets of tables and chairs to ensure that members can be grouped in the design process. Each team should have blanket PSSD tools or maps such as customer journey map, system map and so on according to needs of workshop and planner. Basic materials such as Marker, N-time sticker, A4 papers, a large whiteboard are necessary. PPT, projector and timer can be prepared depending on the situation.

7.2.3 Workshop Components and Process

The workshop was designed as 5 parts. Students can learn and act in different ways in these 5 parts (Figure 7.8). Except the first part “Icebreaking” and the final part “Application”, the left three parts constitute the main contents of workshop, they are “Perceiving”, “Practising” and “Sharing”. The offline service emphasizes enabling users to acknowledge knowledge by great interaction, thus these 3 parts will appear alternately in workshop to ensure the most effective learning result (Figure 7.9). The 5 parts are introduced respectively as below:

0. ICEBREAKING		
<p>1. PERCEIVING</p> <p>What is PSSD? What benefits could it have? Successful case study</p> <p>Basic PSSD design thinking and process PSSD tools and kits introduction</p> <p>PSS design management and strategy The role of PSS designer in company The design group for PSSD system How to use PSSD to improve user-value-oriented innovation</p>	<p>2. PRACTISING</p> <p>Team up Cases analysis Design tools / kits practices Real project introduction</p>	<p>3. SHARING</p> <p>Individual business stories sharing Class experience sharing Idea / Concept discussion Final concepts sharing (presentation) After-class sharing</p>
4. APPLICATION		

Figure 7.8 Contents of PSSDER Workshop

0.ICEBREAKING

Icebreaking stage is the first stage making participants know each other and create a initial link, which could increase the effectiveness of team-up in practicing and sharing stage. In icebreaking stage the host should organize participants to play some games such as cup stacking or paper balls, help participants to be relax and become happy to socialize and learn from each other.

1.PERCIEVING

Perceiving part aims to enable students to receive related systemic education on theory about PSSD. This part is distributed in different stages in workshop, taught by host and professionals invited. The teaching contents of this part include introducing “what is PSSD”, “what benefits could it have” and “what are the successful PSSD cases in market”, which could answer the main questions in entrepreneurs and managers and even designers’ mind and enable them to start have a trust on PSSD.

When the sense of trust built, the professional design thinking and methods can be given to students, such as basic systemic and holistic design thinking, process, tools and kits and so on. Students gonna learn them with practices.

After that, the education can go into the next advance step. The knowledge about PSS design management and strategy could be taught by tutor depends on students demands. The knowledge can involve the role of PSS designer in company, the design group management in PSSD system, how to use PSSD to improve user-value-oriented innovation, forming company innovative culture and so forth.

2.PRACTISING

Teaming up is the first thing should be done because PSSD always need the co-creation and close cooperation between people with different background. Case study and analysis is necessary to support “perceiving” part, making students to think PSSD in real scenario. During tools and methods introduction phase, some short practices should be done for acknowledging better the function and using scenario of these PSSD tools and maps.

The most important phase in practicing part is asking students to finish a real project (for long workshop only). Because of PSSDER’s special way of proposition, the project always is from specific student’s problem or expectation. The scenario could be like “every team help their classmates to find the solution”, the process of that could be more emotional and interesting. The final result also can be more meaningful to every participants.

3.SHARING

Learning, practicing and sharing, they are a positive education cycle. Sharing could occurs at any time in workshop. At icebreaking part, host can give some time to let students discuss and share their individual information and stories. At perceiving part, tutors can do the class experience sharing meeting where students can share what they understand on knowledge per-

ceived after speeches. Apart from project presentation, during practicing any idea and concepts could be shared between all participants consciously or unconsciously. After workshop, student can use the online platform to share their PSSD applications or new perspectives to PSSD. In workshop, I believe that sharing is for better learning and practicing.

4. APPLICATION / FEEDBACK

This can be seen as a extension of workshop or a part of PSSDER offline follow-up service. After workshop, when students back their companies or organizations with PSSD knowledge, PSSDER would continue to follow the student and contact with him/her, assisting him/her to integrate the PSSD knowledge into his current works or projects. Meanwhile, by communication, PSSDER also can know the feedbacks (said or unsaid) of student and then promoting the workshop quality based on these feedbacks.

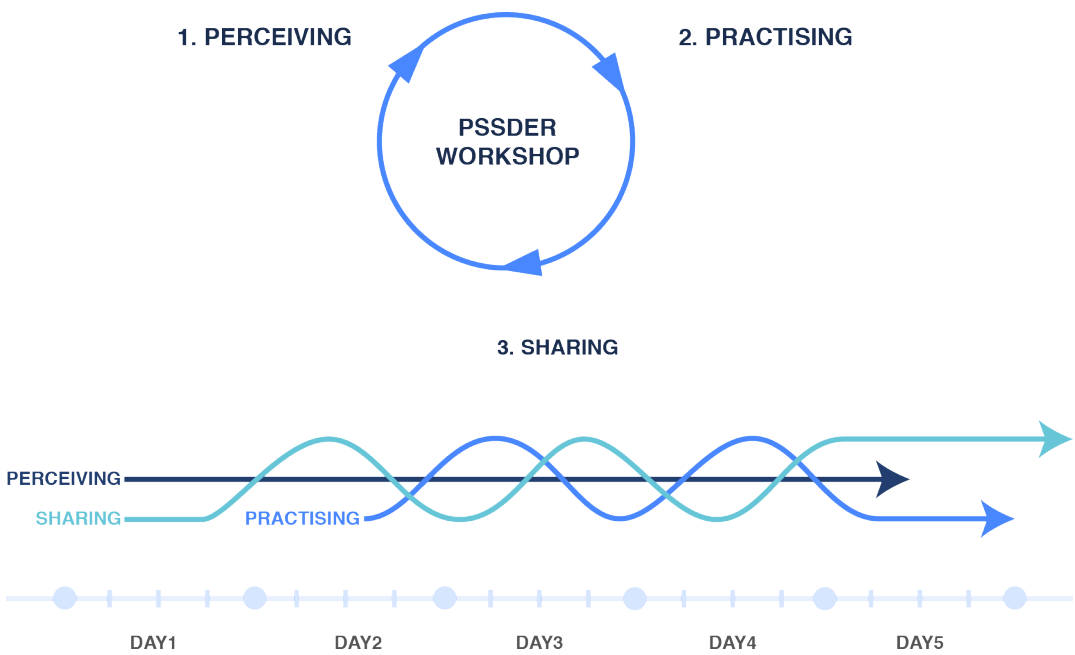


Figure 7.9 Process of PSSDER Workshop

7.3 Others



Figure 7.10 Business card design



Figure 7.11 Hand bag design

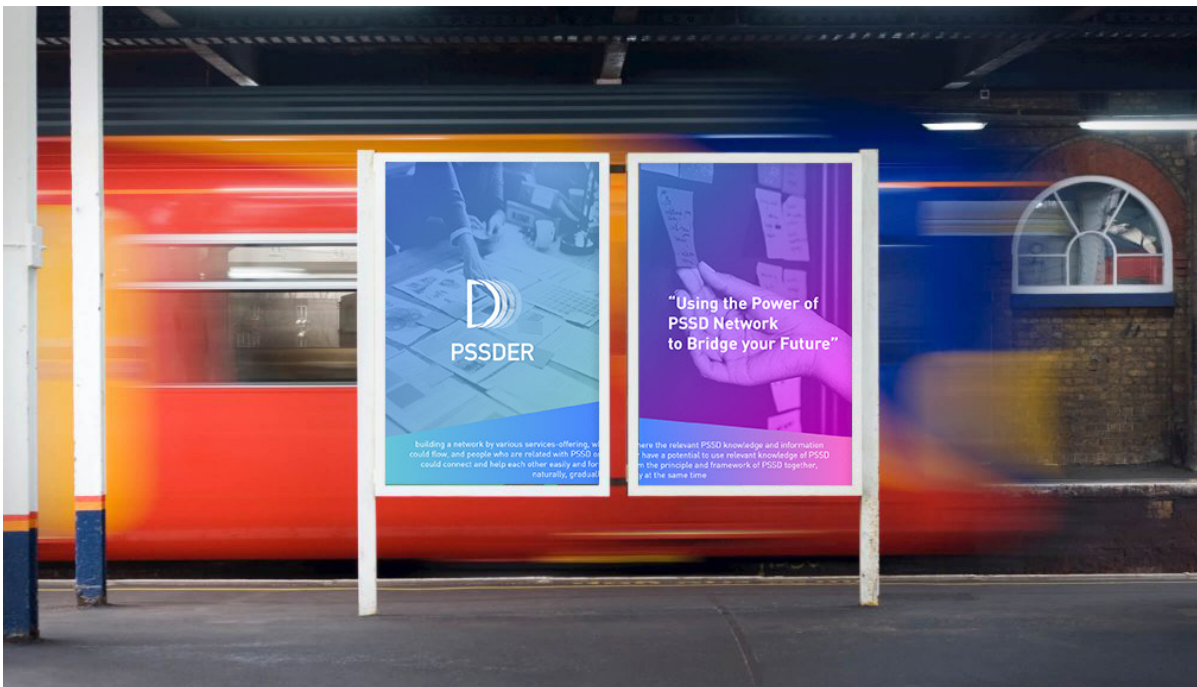


Figure 7.12 Station poster design

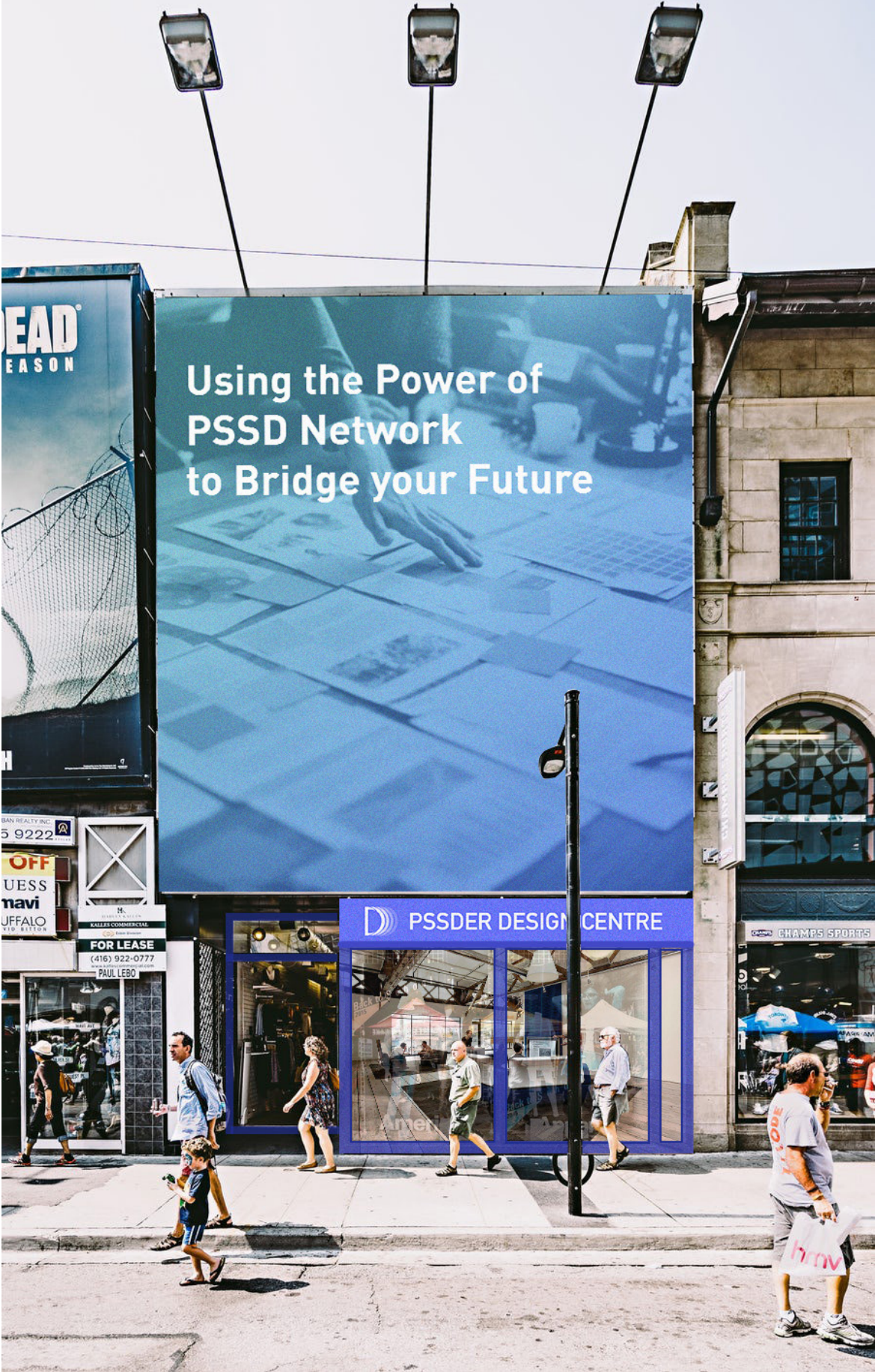


Figure 7.13 Design center design


8.DESIGN TEST



8.1 Methods of Test

After design, I worked for testing for my design. Test objects are mainly chosen from my interviewees such as Wu Wei (CEO of CynowareTech), Lianzi (manager of policy making department), Ding Yaping (Manager of Changzhou Textile). My designer friends also are invited by me to attend the test. As the online service is main based on application product I have done the demo design, I can directly send the demo to tester to evaluate directly, While on offline workshop aspect it is hard to enable tester to have a real practicing. Therefore, I used the two different ways to test my online service and offline service respectively.

For testing online service / product (PSSDER application), I set 4 objectives of evaluation: usability, satisfaction(contents), utility and feasibility. Because the services have offered by 3 different systems, I just required testers to try to them one by one, and give a mark(0-10) to different system according to 4 objectives of evaluation respectively. (Figure 8.1). After that, data collection and analysis are necessary. Beside, if the mark is relative low, I will ask the tester the reason and his/her thinking and expectation.



APP测试评价表

APP Evaluation Form

对象系统 systems	易用性 Usability	内容满意度 Satisfaction (contents)	实用性 Utility	可行性 Feasibility
信息系统 Information System				
课程系统 Course System				
圈子系统 Networking System				
整体评价 General Criticism				

0 -10打分 (score)

建议(suggestions): _____

Figure 8.1 Form design for evaluation of application

To evaluation of offline workshop design, I just found testers and talked to them my workshop concept and some detailed information. Asking some simple questions about workshop was followed by. I can know about their thinking to workshop and feedback by their reflection and answers.

Questions of Evaluation for Workshop Design

1. *"Will you attend to PSSDER workshop? Why?"*
2. *"How do you think to the process of workshop? Do you like it? Why"*
3. *"which part of workshop is your favorite? Why"*
4. *"Do you have some suggestions for PSSDER workshops or some expectations?"*

8.2 Result of Test

The demos of PSSDER Application were sent to 5 different people, 3 managers and 2 designers. To information system, they all thought it is great (average score 8.5) for them and the information and knowledge are very interesting for them. The system itself is simple so they can use it very easily. To course system, the designers thought it is OK but the managers thought the quality and contents of courses are not very good. The system still very clear and easy to use but the quality and variety of course products should be improved. The managers willing to listen other successful managers' course rather than only professional designers. Now their (designers) courses are too much, so to manager the scores of satisfaction on contents and utility on this system are a bit low. Whatever managers or designer all thought the network of PSSD is a very good idea and express willing to join it and use the function. However, the score of usability of this system was low even if other objectives of evaluation got almost 10. The reason is the network system let them feel the logic has a little bit problems and these problems made them cannot enter the pages they want to go easily.

Currently, the average general score is around 8, which demonstrate the people (in managers, designers circle) do have demands on PSSD and the product can satisfy these people's needs. But the network system, as the core function (Link) of application need to be improved to be more friendly of usage to users. The course products also need to be rethought. A supporting system and teams should be built to offering more right and quality corse products to target groups.

To offline workshop, these testers all thought the concepts of proposition and workshop process were very good. But they had a confusion on schedule. They thought they always are very busy, especially to managers and entrepreneurs, How can PSSDER arrange a workshop in right time and in right people combination is a big challenge. General speaking, the comments on workshop were better than application because they think it is more useful to them. Therefore, the first workshop could be launched as soon as possible and then improving the quality by rapid iteration.

9. CONCLUSION

The background features a vertical gradient from dark blue on the left to light teal on the right. Large, semi-transparent geometric shapes, including triangles and polygons, are layered across the bottom half of the page, creating a modern, architectural aesthetic.

Conclusion

China, as the biggest developing country, is showing the huge demands on economic transformation, industry transformation and innovation. Meanwhile, with the rise of Chinese brands like Alibaba, Huawei, China is also showing the world the power and potentials of innovation in Chinese huge market. Nowadays, few people know the word PSSD in China, but development of concepts related with PSSD never stopped in China. Government, academia, and industry all are exploring the concept of product & service system even if they did not call it as PSSD. Therefore, PSSD as a developing trend is obvious in China. As long as PSSD can be perceived systemically by Chinese people, it will develop very fast and release a huge power in Chinese context.

Assisting Chinese industries to realize transformation can enable PSSD to fully release its potential. In China, countless companies in transitional manufactural and service industries are desiring for transformation and upgrading. Developing one new concept always need to have a great media and carrier. To PSSD, in current China, the best carrier is “new retail” - the popular concept focused on designing holistic shopping experience by online & offline product service system design. With the help of “new retail”, PSSD can rapidly take a transit from theory to industry, showing its values to Chinese. In addition, because of the dramatically urbanization and development in China, the needs of people are increasing and the social problems are growing at the same time. PSSD, a design discipline considering sustainability, humanistic care and social innovation, is a obviously great tool or guide to making a difference for current Chinese situation.

The opportunities of PSSD are apparent, but the challenges are obvious as well. Due to the slow development of design science, the basic design knowledge systems and networks are immature. Now in level of Chinese knowledge accumulation PSSD is hard to develop very well. Therefore, It is necessary to strengthen the research and construction of design knowledge systems and networks in China. Besides, seemed developed but isolated information system in China was limited the effective diffusion of PSSD. This lead to distrust and misunderstanding to PSSD among Chinese. The related platforms for developing PSSD are also lack, which aggravated the issue of negative development.

Therefore, based on the situation, possibilities and challenges, the concept of PSSDER came. PSSDER is a project trying to construct a PSSD networks and eco-system, in which the PSSD knowledge can circulate and stakeholders can link and interact with each other freely and spontaneously. The target of PSSDER is creating the healthy environment for PSSD development, so PSSDER need to offering different services and platforms, leading more and more people to forming the network together (co-creation).

PSSDER project is made up of online services and offline services. Online services are based on application which can let people access PSSD and step into the PSSD circle easily. Offline services are based on PSSDER design center where people can acknowledge PSSD by the offline courses, workshops and interaction with others. Online services and offline services can interact with each other, forming a holistic information, education, and people resources system in terms of PSSD, and facilitating continuous quality PSSD development.

The research part of thesis was based mainly on interviews and author's observation and thinking, thus the output cannot be very accurate and complete. The PSSDER is in an initial concept stage, the datas from users and stakeholders are still lack. Therefore, about future works, exploring more PSSD possibilities and having a deeper research on different possibilities could be done for supporting PSSD's practices in different industries. It is required to identify and clarify the challenges of PSSD further as well. About PSSDER project, the further development and examination are necessary at the same time. Engaging users and stakeholders in developing process, collecting more datas, evaluating the feasibility and usability of whole system and conducting continuous improvement should be next step.

APPENDIX

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Full interviews' transcripts

Xin Xiangyang

Professors in Design School of Jiangnan University

01 Feb 2018

What is the status of PSSD in China?

In China many design knowledge including interaction design, user experience design or service design are not listed in standard subjects index of the ministry of education, but many design schools have put them into the relevant curriculum. The situation in fact is the same at foreign countries. Few but top Chinese design schools have noticed the importance of PSSD, thus I believe in academia PSSD is going forward a good direction.

Currently, to Chinese enterprises and even society, PSSD has a bigger impact on products or services themselves. In other words, most Chinese people think PSSD as a method or tool that can deal with the issue about more and more obscured design objects, but they ignore the another important function of PSSD - building an ecosystem to minimize the waste of resources. This phenomenon is resulted from the high-speed development of internet technology in China. Now it is hard to image a physical product without a supportive app. App is fact a relative services, which can offer customer a longer and more effective service and bring company more profits beyond a simple product. This is what every companies want to get though the design of product service system.

What is "PSSD" in your eyes?

PSSD, I think the most important reason this subject formed is people started to aware of environmental protection and sustainability. To avoid the excessive waste of material resources and to enable the tangible products can be used more effectively, the scholars thus proposed this PSS concept. This is the starting point of PSSD. Now, PSS has more functions. One is like before, PSS can be designed to reduce the consumption of material resources; Another one is it can work on the development of service-oriented economy. Thanks to the development of technology, nowadays the line between physical products and virtual products started to be vague. This change makes a product can be seen as a service or a service as a product. The aim of PSSD just is to solve the problems in current complex vague situation. Therefore, from my perspective, PSSD is the holistic transformation in terms of design objects and design methodologies. It emphasized to thinking of the products and services both together.

What are the barriers and challenges in the development of product service system design in China?

Development of PSSD will absolutely meet an obstacle in China. Because it contains the considerations to products, services, user experience, technology, sustainability, etc., PSSD

plays a very complex design decision. This design decision can be built based on relative scientific methodology, but in current China the basic design knowledge base is lack. Furthermore, the mainstream design education do not conducive to the forming of PSSD knowledge base. It still stayed at educating for graphic design and industrial design. If you want to develop PSSD well, the relative knowledge base is necessary.

Can you talk more about knowledge base? What kind of knowledge should be reserved?

Our design objects nowadays have changed a lot, from original tangible objects to intangible objects. PSSD is a typical one. We must clearly know when a product has “contents,” the product is not a simple product any more. This product will be a platform which need to offer continuous contents, user experience to customers. To build a platform, the knowledge of management, business, psychology, design and so on should be included. However, I must say, the cross-discipline cooperation is not enough, the more important thing is knowing how. Before, we had a great collaboration with engineers because we know that a physical product need to have a lot of functions, some of these functions only can be realized by engineers to support the design. The relationship between industrial designers and engineers is clear. But to a product service system, we cannot clarify the purpose of design, the relationship between platform and content, and we also cannot define the roles of the collaborators such as business managers, psychologists. Therefore, this uncertainty certificates that now we still lack the mature knowledge base or system to support the development of PSSD.

What thing can we do for overcoming these challenges right now?

Before, design decision is mostly for illustration, product, building, mostly for manage people, we were making decisions more about forms, forms in terms of color, material, and sometime structure. But now, when we think about information architecture for a website, for an online application or for a system. Information architecture is not simply visual architecture, is not simply visual representation of an architecture, but why these information architecture connection is separated from the other and how are they connected, how can all the parts put together to support holistic of flow of all experience. These new design decision should be took into consideration and researched deeply.

Another important thing we should do is changing the our design education system. Nowadays our design education is too conventional, we have classes like plane formation, color formation and three dimensional composition, but you can think of which class can help you to do interaction design, user experience design or your PSSD? The education also was a construction of knowledge base, so it is necessary to re-build our design education system.

What are the factors of PSSD development?

Basic theory of design research. Why the USA can lead the world in design field? Because they had a lot of basic design theories which can support their further design research. When they are facing a new design object, they have more basic theories which can support them finding new design methodologies as fast as possible. Similar to mathematics, design is also a basic discipline which is worth being researched. Therefore, I think the key factor is basic design

theory or research.

How do you think of the prospect of PSSD in China?

Because of the well development of interaction design in China, the concept of the service design, PSSD also stated to be acknowledged by more Chinese. I think PSSD is a necessary design trend in China. In fact you can seen many cases following the concept of PSSD, such as shared bicycle, shared car and so on. In my point of view these cases just are the good PSSD practices and they really combine the designs for products, services and environmental friendly at the same time. Therefore, this trend in China is obvious.

Currently how did you contribute to development of this subject and how will you do in future?

I organized ICID (international conference on interaction design) and Re-Design Design Education Conference in China. I also helped to building IXDC (international experience design centre). These conferences or centre I thought all helped the development of PSSD because in conference in fact many speakers talked about PSSD many times, PSSD actually is a big interaction in my view. I said before if we want to have a real development of PSSD, the education system should be changed. Re-Design Design Education Conference just was for diffusing these kind of advanced design education concept and new design class, hoping to facilitate the design research in China.

In practical layer, I did the design for HongKong's public service system. For example, I designed the service system about benefits paid and received and the system about how normal local people can find the job for government. In addition, I designed for HongKong Pok Oi Hospital. All medical procedures and patients experience in hospital were designed by me and my team. Meanwhile, I also accepted some projects from enterprise such as Changhong Electric.

Ding Wei

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02 Feb 2018

What is the status of PSSD in China?

In fact, 20 years before, the Chinese design pioneer - Professor Liu had emphasized the design for system, but at that time there was no PSSD and he called this as "making objects and then planning system". You can find Chinese previous generation designers have advocated that we need to carry out this transformation. In current several years, the concept of service design and PSSD actually were also popular, but the relevant successful cases created by designers were still lack. So, I think although in China many people in design industry had a general awareness on PSSD, there was no big breakthrough on practice yet.

What is "PSSD" in your eyes?

Before, we emphasized the physical product, because it can bring you simple function and you can use it to solve some problems in life. Currently with the development of internet of things, products integrate the internet, and then everything changes. Many new concepts emerged, such as industry 4.0, smart city, wearable device and so on. When information attached on objects, objects will have "sensing"; Data will be produced and transferred during the interactions between people and objects, thus relative services appear, which is a natural process. For example, MOBIKE, the new concept of sharing bicycle, through linking the physical bicycles with internet, people can get more interesting services because of the data binding between individual information and products. I think it definitely is a future direction. The traditional product will definitely add the property of "service" in future decades.

Additionally, in my point of view, the PSSD has still another developing direction, that is new retail. New retail refers to relying on collaboration of online service and offline service to offer more amazing customer experience during their shopping journey. A good PSSD example in China I think is FRESHHEMA, it re-defined the retail industry of seafood, combining the many other service such as restaurant, express delivery and online shopping into one seafood store, which brought a brand-new experience for customers. Therefore, now designer cannot only have the concept of designing for "objects" but also need to have the design thinking for system, environment and networks

What are the barriers and challenges in the development of product service system design in China?

Frankly speaking, this challenge is oriented from the general acknowledge of public and Part A. For example, if government find you to do a space design or architecture design, you can quote clearly to them, because you can count price in one square meter or in construction area. But if government ask you to design a PSS for them, you cannot give a clear quotation, right? Moreover, If you design a product, the product can be sold and bring your Part A profits;

if you do a branding design for a company, the company also can evaluate the brand value. But if you design a PSS, what real value your Part A can get? I believe you and Part A both cannot evaluate it according some principle. Therefore, simply saying, because of the unsystematic knowledge and weak realization on PSSD, the advanced concept cannot develop well.

Transiting from products consuming to system and experience consuming, this is a big trend in the market. For this reason, the current designers are facing more challenges. They need to have not only skills of modeling and sketching, but also knowledge of service, technology and informatization, etc. Therefore, I think we cannot see designers as a role whose job is making hardware any more, we should view them as a director role. Their main responsibility in an organization should be coordination and innovation. In addition to that, a top designer also need to be with outstanding ability of insight-finding and decision-making. Soft skills are more and more important to designers nowadays, but meanwhile these soft skills also are harder to foster than hard skills.

How do you think to overcome these challenges?

I recommend that PSSD should conduct a bond with one of traditional design fields such as space design or industrial design firstly. During these design process, designer can consciously add the concept of PSSD. By this way, the value of PSSD can reflect gradually and then be admitted by society. For instance, my team once accepted a design requirement for an industrial park. In original design process, we only need to do the reconstruction of building facades and interior space design. But if we add the concept of PSSD into this project, everything will change. We may more consider the relationship between this industrial park and around business environment. In addition, we also will focus on people's experience when they have a journey in this industrial park. The PSSD could give space a "time" concept, and give hardware design a "software" design concept. In this way, the value of PSSD could have a good reflection and more and more people will accept PSSD. I think this integration process is very important to development of PSSD in China.

How do you think of the prospect of PSSD in China?

I think it could work in 3 fields in future. The first is in business, especially in new retail construction. PSSD can help the store to build a brand new scenario, enabling Chinese consumers who are used to online shopping can walk into the physical store again, feeling new and smarter shopping experience. The second is in manufacture industry. The industry 4.0 emphasized that the technology should integrate with share-economy, sustainability, so PSSD obviously have a potential in this field, right? The final one I think PSSD could relate with our daily life, I means it can bring positive change for urban life for citizen. Last month the government of Shanghai call a group of designers together, hoping them to walk into the community and design for community. The design sphere covers Shanghai people's daily shopping life, entertainment life, travel life and so forth. From this we can see , Chinese government has realized the design can help them to build better public service for their citizens. The design here just refers to service design, PSSD. Therefore, the concept of PSSD matters to current society because it indeed can contribute to the development of society. We should believe it is a future design trend definitely.

Currently how do you contribute to development of this subject and how will you do in future?

6 years ago, I help the government to promote the development of small towns by social innovation. The project's name is "design for country," planing to re-organize the social resources, by linking local relative backward manufacture industry with the countries to designers, design companies and design centers, to actively encourage the development of country. I think this project was my initial attempt on PSSD.

Then, 4 years ago, I proposed a concept called "4 chains amalgamation". In fact it is very similar to concept of PSSD, meaning that product chain, brand chain, payment chain and service chain — these four chains should be combined and took into account together, to realizing the systemic breakthrough innovation.

Last year, cooperating with Shanghai history museum, my team was required to design for their gift shop which has 200 square meters. The manager of museum hope their 200 square meters space can have 2000 square meters efficiency, so it is hard if we only design the offline service according to conventional design principle. Then we just collaborated with Alibaba new retail team, combining their advanced technologies solution, such as face recognition, holo-graphic projection, scene marketing, building the online & offline service system, to creating holistic shopping experience to customer. Customer will stay in the store for longer time (5 times), which means the sales will increase. I think this is just a good business PSSD project.

Gong Miaosen

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01 Feb 2018

What is the status of PSSD in China?

In China, sometimes you may find some people who are doing things which are similar to PSSD, but they did not name it as PSSD. So it is hard to say the detailed situation of PSSD in China. In academic world, some of top Chinese design schools are promoting the concept of PSSD. They did relative researches and opened the relative classes at the same time, leading the design education and industry. In fact, in market, you also can feel the huge needs to PSSD from industry circles. In recent 2-3 years, I was asked by many enterprises and organizations to do the consultation and cultivation on PSSD. Many jobs entitled “services designer” also are offered by Chinese company. Design schools are looking forward recruiting the talents with PSSD background as well.

Service design seems developed better than PSSD in China, because service design entered the Chinese context earlier than PSSD. Additionally, there are many overlaps between service design and PSSD, which limited the development of PSSD to a large extent. In a sense, PSSD covered by service design in China. However, although few people talk about PSSD, in fact the concepts, methods and tools of PSSD have integrated into different design classes and field, such as popular shared-economy in China.

What is “PSSD” in your eyes?

The concept of PSS came from the people’s discussion to sustainability. At the beginning, people talk more about how to make the product to be sustainable. But as time goes by, they gradually realized they need to enable whole system to be sustainable.

Nowadays when people talk about a solution, they could think more that solving a problem by services, systems, environments but not only by products anymore. It is hard to find a using only a product as a solution currently. Mostly, products and services are bond together and appear in front of customers together. Therefore, whatever it is a product design or a service design, it in fact just is a PSS design that designers should think of nowadays.

What role PSSD should play in design industry?

From my point of view, PSSD is just a design principle, a design method and a design tools. Every people can use it to innovate and find a smarter solution. Of course, I think PSSD, in most instances, refers to designing for a system in which the product plays a key role, while service design should work for a system where the service plays a key role.

What are the barriers and challenges in the development of product service system design in China?

The slow development of PSSD in China to a large extent is because the fast development of service design has covered PSSD. I think the concept of PSSD highlights the relative complex systematic innovation, thus most of the time it is appreciated and diffused by people with engineering background or systematics background. While service design is tend to be design for creating better user experience, which is easier to be conducted by designers and to be accepted by society.

Another problem limiting the development of PSSD I think is from Chinese designers and design students. Nowadays in China, designers and design teachers or students are mainly divided into two types. One type's people refused to accept the emerging design concept, which enable them losing in design developing stream. Another type of people are parrots. They like to absorb the new knowledge and think it is good but they did not know why it is good and how to use it in a right way. More serious for this kind of people is that for pursuing the new things blindly, many of them even lost their basic design skills as a designer such as sketching. Frankly, these two types of people are regular seen in China.

Moreover, our many students who entered the large enterprises are working for a small design part such as beautifying interface but cannot touch with the system design even if they attended the classes of PSSD or service design. I think this phenomenon also made an effect on PSSD development in China.

The last is as a PSS designer you should have all-around quality. In addition to design skills, PSSD requires designer to have a great communication skill, strong perception and flexible and holistic thinking to an object. Thus in China the education system cannot satisfied the demand of cultivation of this kind of talents yet.

How do you think to overcome these challenges?

I think Chinese design schools should clarify the objective of cultivation. The classes of design should be re-design by schools and then make students to learn the relative skills to meet nowadays' social demands.

In addition, we know when right design tools or methods use on the right design objective, the effect and efficiency of innovation could be maximum. However, because of nowadays' wider and wider design objectives, the huge number of different design concepts, methods and principles emerged in recent decades. People would confused by these concepts and always put the boot on the wrong leg. For this reason, the efficiency of working and studying is low. Therefore, there should be the education system which can lead people to use the appropriate design tools or methods on right place, maximizing the innovative efficiency.

How do you think of the prospect of PSSD in China?

PSSD and service design attracted the awareness of Chinese government. Because Chinese government has found the importance of innovation and has regarded innovation as

the national strategy of development, Chinese enterprises and universities both are learning and practicing various innovative knowledge and methods covering PSSD in recent decades. Meanwhile, as I know manufacturing service industry is also a industry Chinese government like to rapidly develop. Thus I can say more and more Chinese people will view innovation as the core competitiveness in nest decades. I believe whether PSSD or service design, their real values would be accepted by more and more Chinese people in future.

Currently how do you contribute to development of this subject and how will you do in future?

In school, for PSSD, I focus more on the social innovation. Now my main research direction is designing for social innovation and meanwhile I also teach the class of social innovation for graduate students.

In business, recently the new retail is popular so I also was invited by some companies to do relative service system design for them, helping them to create more value of user experience. I think these new retail cases just are typical PSSD projects. Additionally, some product design projects were actually typical PSS design as well. For example, I designed a vending machine which would be put in guest rooms of hotels. It seems a product design but in fact I designed whole back-office service system for this product such as cloud-platform system or how to exchange the goods in machine.

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24 Jan 2018

What is “PSSD” in your eyes?

To me, no matter it is a product design, service design or a PSS design, their nature is a scientific innovation process which can help us to understanding information and then solve a specific problem. PSSD is only equal to a part of division of “design”, taking responsibility on macro design, to design for systems. Of course, only is designing for systems not enough, PSSD also underlines the consideration for customers’ feeling and social responsibility. Therefore, to me, PSSD is not only an emerging design concept, but also is an advanced concept of humanism. It advocates people should have empathy, sympathy and social responsibility, right?

Additionally, I have marketing background, so I know the concept of service design and PSSD were actually derived from marketing. If you can think of it carefully, you will find that PSSD or service design just is a tool that can assist enterprises to build better brand shape and to increase customer retention.

What is the status of PSSD in China?

In 2013, I started to refuse the concept of PSSD in China. At that time, this was a total new words for China, thus many people feel this concept has a hidden distance from them. Many people touched and knew PSSD, but they did not willing to understand or practice it further. Of course, the definition of PSSD was also not clear yet at that time.

Now the level of awareness to PSSD was higher than before, but the awareness still limited to knowing. In fact, in China people had few channels to get the knowledge of new design concept like PSSD, perhaps they knew the word and knew it is good from somewhere but did not know the real framework of PSSD and the value of PSSD. For this reason, they had no confidence to do the PSSD projects; Designers also cannot convinced entrepreneurs or governments investing on PSSD projects.

As I know, several famous Chinese design schools such as Qinghua University and Jiangnan University were also paid attention on PSSD and did relative contribution on it. But you also can see the effect of development was not obvious because in fact they did not have a continuous researching or practice outputs for PSSD.

What are the barriers and challenges in the development of product service system design in China?

If you want to develop a new design concept, I think firstly the various channels where people can get to know the knowledge should be built. PSSD is an emerging advanced concept from west country, so the relevant references or website about PSSD should be translated well and then making Chinese to be easy to access and understanding. But there were few people

who are working on this work of translation. In IxDC (international experience design conference) of China, I don't know if you found they actually talking the similar knowledge about PSSD every year. There were no deeper research or new progress for PSSD. I think this phenomenon was just resulted from the lack of access channels of information.

Moreover, factly, Chinese big companies such as HUAWEI, OPPO, or Alibaba all are doing service design or PSSD, but they did not entitled these projects they are doing as service design or PSSD. So if you want to introduce to others case studies of PSSD or service design, you will be hard to explain and then convince others.

Another challenge I think to PSSD is most of Chinese people like to see the short-term benefits. If they ask you to do a design consultation, most of them hope your design can create profits in one month. But obviously the value of PSSD cannot be evaluated by short-term profits and it also is hard to assess accurately that how much money it could bring. After all, because of serious competitive environment, most Chinese companies are in a "make a living" situation.

How do you think to overcome these challenges?

I think a good quality education of PSSD should be given to Chinese designers or some enterprises, enabling them to have a deep understanding what PSSD is. The education should be in a clear and attractive way such as case study, metaphor or workshop, letting people know the benefits PSSD could bring and have motivation to use it. After that, the relative design process and methods could be taught to them.

Of course, understanding is not enough. Practicing matters. Many Chinese designers and entrepreneurs actually have been trained well and they know how to use PSSD. But most of the time they did not use PSSD because they have had own peculiar way of doing things and experience have certificated their way make sense in many situation. It can be seen that they still lacked the confidence on PSSD. Therefore, perhaps setting up their confidence to PSSD is more important than understanding from my perspective.

How do you think of the prospect of PSSD in China?

It is hard to say, because PSSD is not like graphic design or product design that you can do well if you got the relative skills and a good aesthetic sense, it has a high requirement on individuals. PSSD requires you should have more conditions on "softwares" such as a keen business sense, a good understanding ability, innovation talent, curiosity, etc. Without these softwares, you cannot get success on PSSD project. In a sense, it is easy to enter the door of PSSD, but it is very hard to be an excellent PSS designer. Besides, nowadays there are no people who is really doing a continuous contribution on PSSD in China. For the reasons above, I cannot sure PSSD could have a good prospect in Chinese future.

Currently how do you contribute to development of this subject and how will you do in future?

At previous years, I hosted the service design workshop in International experience design conference (IxDC) every year. Now I am not focus on service design any more and taught the

classes of design for innovation. Because I think either service design or PSSD both in fact are a series of thinking ways and methods which could guide people to do the innovation. I hope people can re-think the nature of design but be blinded by various emerging design concept. After all, thinking the nature of design is the most essential thing for innovation.

San Guo

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02 Feb 2018

What is “PSSD” in your eyes?

I think this subject is a bit like Chinese medicine, it gives people a bit feeling of empty. Although it had not a detailed scientific explanation yet, it indeed works for people’s health and disease treatment. Similar to Chinese medicine, PSSD need to have a large numbers of actual application cases as support. I understand PSSD definitely has its functions and values nowadays but it just still did not find a good using scenario yet. For example, which situation should we use the knowledge of PSSD in? How to use PSSD in different situations? These questions are not very clear to this design subject.

To many enterprises, they maybe face a problem of transformation. In this time I think PSSD just could make a difference. In other words, the managers and leaders in company need to have this business (PSSD) to support their transformation because of today’s competitive market.

What is the status of PSSD in China?

as I know not many Chinese design companies or organization can hold this business (PSSD) very well, which lead to the trust loss of managers or leaders of companies. Therefore, everyone in China know PSSD is good, but its development is limited in a sense. Besides, there are some so-called “PSSD professionals” who did lots of PSSD projects in China, but in fact they do not very understand PSSD and not be trained well. In their hand, these PSSD projects failed a lot, which also bring PSSD subject a bad reputation.

For example, one year before a big Chinese company realized the importance of PSSD, and then spent one millions RenMinBi to asked a famous local famous design company to design a whole set of service and system for them. As I know this design company is good at marketing but not at PSSD. After one year later the big company cannot see the obvious promotion of turnover and found the problems happen before exist still nowadays. So they started to rethink whether at beginning they did not think clearly why they need PSSD or this design company’ capability is weak? It is hard to evaluate it and gradually managers and leaders in industry will lost their trust on PSSD.

What are the barriers and challenges in the development of product service system design in China?

Because I worked in the USA before, so I can combine the situation of the USA to answer this question. The market of the USA is a stable market that has a sound and relative mature system. Its developing speed is quite slow but stable. On the contrary, Chinese market is unstable because everything developing so fast. We must know a successful innovation need a early accumulation. The accumulation is not only on knowledge, but also on physical resources,

people network, market acceptance and so on. Therefore, in China, the too-fast development of economy and market results in a basic system is not well established to supporting the development of PSSD. It is a “base” problem, also a “time” problem.

Additionally, another problem I think is about high cost of training a PSSD designer. In preschool education, Maria Montessori theory is an advanced theory which plays a important role in education industry. It has a holistic education system and tools. But why this system which is admitted as an excellent education way by the global cannot be develop very well till nowadays?

I think the core reason is “teacher”. Teacher, as a core component in whole education industry, his/her training cost is very high. Especially, Montessori’s education system is like a advanced class, it requires teachers have basic and great kids education knowledge and working experience. Simply speaking, Montessori’s education system set a high standard to teacher’s quality. Therefore, Montessori’s education system itself’s mechanism decides its low-speed development. PSSD is also facing this problem.

How do you think to overcome these challenges?

I think the first step is making more people to have a deep cognition on PSSD. The best way in my mind is introducing people some benchmarking PSSD cases and then lead them to study these cases. These cases can convince people that PSSD has awesome value at the present day. When they believe in PSSD, they would willing to try. In this trying process, the relative supporting system for PSSD can be framed gradually.

How do you think of the prospect of PSSD in China?

Absolutely good. We can see the trend from that more and more design companies have offer this kind of consultant service and in current design or business conferences people never stopped the disquisition of PSSD. As I said before, it could play a significant role in company transformation and upgrading. More and more our customers are also seeking the PSSD services to us. The need for PSSD would be more and more obvious in China.

Currently how do you contribute to development of this subject and how will you do in future?

ARK Design studio in China is famous on user interaction design and user experience design, servicing different companies to seek Chinese local design solutions. With the development of business and promotion of customers’ trust to us, we were required to design not only an app or web product, but a product system or service system. Thus recently based on rich working experience on UX/UI design, we also expanded our business to service design and PSSD, we have provided many PSSD solutions and service design solutions for different companies, making their customers to having a more amazing and unified experience when they using the relevant products. In future, we looking forward to do more business on PSSD and service design.

Apart from our basic business, every year we also organized a design activity called “Design for Change”. In this activity we invited different industrial biggies, and making them to have a speeches about design trend, making them to discuss. Every year PSSD is a hot topic in our activity and discussion. By this way, I think we also promote the development of PSSD because more people can get to know and think of PSSD through our activity.

Wu Wei

CEO of CynowareTech

23 Jan 2018

How do you think of design?

For my company, design is becoming more and more important. The reason is that this era, the technologies such as internet, artificial intelligence, IoT, big data and so on have integrated into people's daily life, people's lifestyle, behaviors and needs are changing quickly. In this situation, if a company want to live in the market, it must emphasize the value of customers. I believe all companies with strong competitiveness attached importance to customer's experience. The role of design is just creating better experience for customers. For example, because the main focus of my company is research and development of high-tech hardware. Without the design, my hardware maybe is just a black box, people can use it but the experience it offers is absolutely bad. This can directly decide if the customer willing to purchase your product. Therefore, I think no matter you are a hardware manufacturer or software manufacturer, design in fact need to cover whole your business processes. Because their final purpose is providing the end-customers' better experience and earning money, right?

I worked as a hardware engineer at silicon valley in the USA before, thus I witnessed the development of the subject design from original product design, to interaction design, to nowadays business system design, process design. I understand the advanced design concept can help an enterprise to be successful. This is why I viewed design as necessary in my company and keep a long-term collaboration relationship with design school of Jiangnan university.

Did you applied design in your company? If Yes, where is the design applied in company? Why? If not, why did you not need the design.

Yes, design to our company is not dispensable. I think the one advantage of design is that it could make you to keep a holistic view. The designers in my company is like an adhesives. Their responsibility is not only designing for a product or for an interface, instead they need to design for customers' experience from difference angles and in different way. It is a holistic design I think. Therefore, design department is one core department in my company and I told to every engineers or sales that you should respect to designers' thinking and learn to listen their suggestions carefully.

Have you ever heard about product service system design? If Yes, how would you describe it? If not, I will explain what is that.

To be frank, I knew few about PSSD from the collaboration with Jiangnan university. But after listening to your introduction, I think it is similar to what my company doing now. Before developing a new product, our team always started with understanding customers' demands and building a hypothetical scenario of application. Then according to this scenario, we should plan and design the whole business process. In other words, we need to clarify what the linked Eco-system is and then know how to integrated our technology into the Eco-system, making

customers to feel the better experience.

(Explanation of PSSD)

Do you think If something in your company's product/service development process actually fits the academic definitions of PSSD? If Yes, what are they?

I think I indeed am doing similar things. For instance, my company recently cooperated with a Chinese jewelry brand, creating a new retail solution for their stores by our technologies. We put an AI robot which integrated with the face recognition technology at the entrance of store. When a customer steps into the store, this robot will say hello and according to his/her face to identify the purchase preference, and then transferring these data to sales in store, helping sales to do relative private service to the customer. When the customer is picking the jewelry they liked to buy, the sales can use the online games, online coupon, online catalogs, etc., to interact with customers and guide him/her to buy his/her favorite jewelry. After, my company also designed a complete payment system, enabling the managers can master sales status and manage customer relationship at the same time. I think here I just construct a retail system where all stakeholders can get new and great experience and benefits. I think this case just can be seen that it overlapped some parts of concept of what you said PSSD, although I started to do it from a thinking: "How to use my smart products in their jewelry store?".

How do you think PSSD now (after my introduction)?

I think PSSD would be meaningful to project manager. The background of project managers in my company is engineer, so when they talked about customers' needs they always made an understanding from aspect of technology or function. Nowadays the needs of customers are not simple and clear any more because they involve customers' individual experience. Therefore systemic consideration and customer journey management which can lead to good experience in your all business process for customer is important to project manager as well.

Furthermore, we are emphasizing the "internet plus" today. Technologically speaking, "Internet plus" just is linking everything to internet, but it is not enough. How to "plus" and then to improve quality of people's life matter more in the concept of "internet plus". Here "how" just should rely on the power of design in terms of system. In short, new technology is a factor of revolutionary innovation, while system design is catalyst which can decide if the revolutionary innovation can success. Therefore, I think PSSD is a necessary trend in future. It would be important to my company.

However, I think PSSD currently is facing a disadvantaged situation. That is no many people can transfer the theoretical values of concept of PSSD to the real values of practical projects. How to engage PSSD in a project and then making its value to be obvious for managers and customers is very important to you.

Where do you think PSSD could be applied in your business or company?

Now I am trying to do something to realize the "Food Industry 2025". I hope to create an overall solution which can help restaurants or food store to control their whole process of their

foods without any labors (in internet way). For example, we open a bakery. I hope to create a template which produced by my company's different products, telling the managers where the raw materials of cakes are from, different status in baking process, how many customers purchased the cakes and so on. Meanwhile, I also like to create an attractive interaction with customers in different holidays or their birthday, a network which can manage the delivery process, a system which can recording customers feedback to help us improving service and so on. To this whole process, technologies are obvious not enough. I hope to there is a designer specializing in PSSD in my company and he can help me to do an overall thinking and design to this food system, making your food to be more attractive and then making customer to be willing to accept your food.

Are you willing to learn it more and which way do you prefer to learn?

Of course! After the discussion before I think I have an interest on PSSD now. I hope I can have chance to talk deeper with you and your professors, seeking a possible cooperation on some projects. I also like to know some website about PSSD and I can have a deep understanding to it.

Ding Yapin

CEO of Changzhou Textile Co.

01 Feb 2018

How do you think of design?

Formerly, I thought that design only refer to designing a product. But by the communication with my friends in the industry, I got to know that the objectives of design are wide. Not only can product be designed, service, business process, manufacturing process and so on all can be designed as well. Now in my point of view, in the highly competitive market, design can help you to win the occupation of market through giving the customer good using experience and then accessing their loyalty. Design is a tool that can make a transit on customers' mind from "using a product/service" to "enjoying a product/service". Meanwhile, I think design is not only for customers, it should also for my employees, business partners and so forth. It should make everyone in the system to be happy and satisfied.

Did you applied design in your company? If Yes, where is the design applied in company? and why? If not, why did you not need the design.

Formerly, I did not have this kind of thinking that applying the design into my company, because you know my company is a conventional fabric manufacturer. I thought we only need to make the manufacturing quality to be better and better, then customers would buy my products. But recently because of the more and more competitive market and my friends suggestions, I think I indeed need the power of design. My company do need upgrading and transferring to make my partners or suppliers to be willing to cooperate with me, to make my employees to be happy to work for me and to make customer to love purchasing my products. But how to do the upgrading and transferring is still a blank in my mind, perhaps advanced design knowledge can do me a favor.

Have you ever heard about product service system design? If Yes, how would you describe it? If not, I will explain what is that.

No

(Explanation of PSSD)

How do you think PSSD now?

After your introduction, I think I do have interest on your subject (PSSD). The main reason is with the development of Chinese economy, the available social and environmental resources are in fact less and less and government is giving us (manufacturers) a continuous stress on environmental friendly standards at the same time. I need to review my product lines and think how to manage and use my resources more effectively. Here, I think PSSD can give me a great assistant.

Would you use PSSD in your company If Yes, where will you use it. If Not, why?

Yes, I would. In current stage, I think PSSD could help me to upgrade my company and build my enterprise shape in next decades. Nowadays, Amani, H&M and some other cloth brands all view my company as their manufacturing partner. I sold them one meter fabric or one clothe at a price of ¥20, but when they sold it to the customers, they would sell at a price of ¥500. How can they increase the price in several times. I think it is just because by design they bring a lot of added-value for customers, such as great purchasing experience, wearing experience, trustworthy brand and advanced life concept. So, now what I most like to do is integrating design concepts into my products and relevant services and then increasing added-value. Meanwhile, manufacturing industry servieizing is also my aim of development of enterprise. I think PSSD concept can help me on aspects mentioned above, making potential partners to be willing to visit my factory and build a cooperation relationship with me.

Additionally, because my company actually is a manufacturer, the resource saving and environment protection both are important to me. Apart from by technology, maybe I also can use the relative systemic re-design on my producing process, enabling my factory to arrive the different producing standards required by ministry of environmental protection of China in a minimum cost.

Are you willing to learn it more and which way do you prefer to learn?

Up to now I never heard about any successful cases about PSSD. Thus I hope to see the PSSD successful cases from other enterprises and then to do the case studies. I do not like to only know the theoretical knowledge, I rather to see what real value PSSD has brought to other companies. I like to know what a company originally looked like, and what a company turned to be after the engagement of the design. Besides, as a manager of a company, the profits and social responsibility both are always the two important factors I care about, so according to the cases, I can decide if I really need to adopt PSSD and what time I should use it to make sure my company can benefit from PSSD. If there are some successful PSSD cases, I could also learn PSSD easier and will have confidence on applying PSSD in my companies. So to me, offering lots of case studies is the best way that makes me to learn and understand PSSD.

Meanwhile, I also like to often touch with the design specialist and some design platforms. Now except communication with my friends in the industry, in fact I do not know where I can get these design information. Therefore, if there is a chance which I can take part in some training or conference and can communicate with relative designers and managers who has got a success by PSSD, I will be very happy.

Wu Hanwei

CEO of CapsuleTech

02 Feb 2018

How do you think of design?

Because I had a bit design background so I definitely think design is important. I ran two restaurants in China. These two restaurants integrated different design knowledges. I can say the core concept of the restaurants were from design. The restaurants were designed for parents and kids, I hope to parents can bring their kids to my restaurants, having dinner, playing and interacting with each other. I like to enable them to have a happy family-time in my restaurant. So according to this concept I created not only a eating space for adults, but also a different colorful eating space for kids, playing space for kids and shared space for interaction between different kids and parents. Apart from space & interior design, my design team also designed the relevant services based on space. I hope to through these services parents and kids can get a very happy and emotional eating experience in my restaurant. Now the effect is good. People like my restaurants.

Now I also opened a new company which focus on developing the In-Vehicle Infotainment. The design in my new company is more important. Interaction design, product design, user experience design and new service design are all I need for my new company. To me, design is like a telescopic sight on weapon, making you can grasp the customer needs and expectation more accurately.

Have you ever heard about product service system design? If Yes, how would you describe it? If not, I will explain what is that.

No, but I heard about service design, I think they are similar, right? In my point of view, service design can help me to design my service and promote my service quality. In my restaurant design, I think I just used service design, to allow my customers can have a good experience during the dinner time in my restaurant. In service design, a service system should be designed and identified, customer's experience should be underlined and considered. So I do not know if service design is similar with PSSD.

(Explanation of PSSD)**How do you think PSSD now?**

A simple service is easy to be copied, but a constructed system is hard to be copied. I believe "you need to play a deck of cards instead of one card" in business. Once the system is formed, you just can occupy a part of market and win the benefits. So in future, I think competition on system would be more and more fierce and fierce. Therefore, my company, who like to build a holistic entertainment in-card system, including hardware, software and cloud, to bring customers high quality end-end experience, has a desire for PSSD.

Would you use PSSD in your company? If Yes, where will you use it. If Not, why?

In fact I am looking forward to recruit a PSSD talent now. Why I like to do the business (PSSD)? Because I think today's customers are not treated or served well, especially in some scenario that related with user values. So I hope in my company, there is a PSSD talent who can assist us to deal with this pain point. I hope he/she can promote the whole user experience including before driving, driving and after driving. Linking the scenarios and experience and giving customer an unified feeling are important.

Nowadays, look at whole car market, automobile companies have transfer their attention from competition on dynamic system, suspension system etc. to service system, because they all realized their technologies have been very mature and similar with each other for normal customers. So this is trend I believe.

My company focus on the design of the entertainment system in cars. So now I always thought of some scenarios about in-car or after-car entertainment through some knowledge of PSSD. Recruiting a PSS designer is also a thing need to do for me in recent future.

Are you willing to learn it more and which way do you prefer to learn?

Basically, I learned design knowledge from relevant books. But I also look forward to learn it though the classes or speeches where design professionals can teach PSSD and analyze industry.

Lian Zi

Manager of Policy Research & Making Office in Jiangsu Government

25 Jan 2018

Could you please describe your work in government?

I am working in Chinese Policy Research Department. Our department's responsibilities are not limited in policy-making and policy research, we are also playing a important role of brain trust for central government, assisting to do the smarter decision-making. Therefore, only if government want to do significant decisions or measures, we basically would offer relative research reports and suggestions in advance.

The contents of working mainly includes 3 different aspects. One is Drafting working plan reports and speech scripts of the main leaders in government. The second one is researching. We will have a deep research on citizens' life, problems and needs and then based on the research results do a series of decision advices or solutions to government, offering the references as more as possible. The last one is providing information service for government. By the way, now we also focus on reformation, which means we are thinking and researching how to facilitate social development, economical development and cultural development.

Could you tell me how a policy government made in China? Could you describe the detailed methods and principle in policy making process?

The forming of a policy or a decision has two different types. One type is called "leaders-oriented policy/decision". In this type, the initial ideas and concepts of policies or decisions are from leaders' mind. Then, according to these ideas and concepts, we will do the relevant researches to test and verify the feasibility of these ideas and concepts.

Another type is more challenging for us. In this type, we should find the problems and some negative phenomenons appears in society by ourselves and then do the relative researches. This requires us to keep sensitive on social issue and to be good at see the insights hidden behind the phenomenons. Of course, we also need to keep thinking and researching how to offer the solutions for these issues. For example, inefficient land use is a big issue in China, especially recent decades the thousands of industrial parks were built but a large part of them were actually unused space. So for this issue, our department conducted research work 2 years ago. After researches and many times discussion, we had a idea that is these unused space can be temporarily rent to peoples with mobility such as young start-ups. These young start-ups need to have a cheap place to work, live but do not need a very stable place. even if some of them maybe are not "registered" company, but we believe the values of these young start-ups can create are more than the cost of these spaces. Half years ago, we carried out this measure at some areas. Now the great result can be seen by everyone, inefficient land reusing has made the relative areas to be more active on economy and culture. Usually, if a new measures or policy make sense in some areas, we would do a research report and share it to Chinese other local governments, enabling them to think as well and then to combine their local situation to do the promotion.

By the way, we built a talent pool and industries networks many years ago, when some issues are hard to be solved by only government, we will invited different talents such as entrepreneurs, professors in relative field to discuss and find a solution together.

Did you meet some challenges or problems in your working? If Yes, what were they?

Yes, of course. There were a hundreds of decisions or suggestions drafted by us every year, but the effective decisions that can be really applied were few. The reasons led to this phenomenon have two: One is because Chinese government is a huge organization, individual's power is not enough to change something. Especially our knowledge base and vision is limited and sometimes cannot do the very good decision proposal. Or sometimes leaders and us cannot reach a consensus on some issues. So most of our reports and researches were "put on the shelf". Another is the time issue. Here time issue refers to some problems cannot be solved in short time. Some proposals you made get a fall response now but few years later it could be successful because perhaps the right time has not yet come. You need to insisted what you think and modify and improve your proposal constantly.

In addition, the idea depletion also always annoyed me in working time. Sometimes we can find the issues and get insights but cannot have a good idea to deal with them.

The last but not least, in field research part and interview research part, because local officers maybe will take a lie for themselves' benefits and grassroots people do not have good thinking ability in many situation, we sometimes cannot listen to the truth, which can lead to our failed decision-making directly. So how can we get truth is another issues when we do the researches.

If the problems happen, how did you solve them?

Generally speaking, if a serious problems happen, or hard to be solved by one department, we will link with different other relevant departments and organize a meeting. A meeting often can the most of the problems. Left problems which all departments cannot find a consensus of solution will finally depends on the leaders' proposals.

In fact, thanks to this problem-solving mechanism, almost all policies and measures that can be finally carried out had positive influence in Chinese society. In addition to this mechanism, we also have a various of regulatory mechanisms, evaluation systems and supporting system of third research parts, which allow the success on policies and measures execution.

Do you know the policies which support the development of the design industry? If Yes, what are they?

Yes, as I know, Chinese government require different local governments to strengthen the connection between cultural creativity, design services, equipment manufacturing and consumer goods industries, to enhance cultural creativity and enterprises' equipment manufacturing and service design capabilities. The governments must support the development of application

design and cultural connotations based on new technologies, new processes, new equipment, and new materials, and further enhance practical functions and aesthetics.

Promoting the application of creative design elements in the manufacturing of consumer goods is necessary for increasing the added value, and guide consumption upgrades. Meanwhile, governments should encourage cultural and design enterprises to cooperate with manufacturing companies in depth, promoting cultural creativity and design services to penetrate into the whole process of manufacturing product production, sales circulation and promotion.

Did you know product service system design? If Yes, how would you describe it? If not, I will explain what is that.

For PSSD, No, totally No. I know few about design but actually got few chance to touch with it in my daily life. But after listening your description of design thinking and PSSD, I think we have lots of similarities. I believe all successful governments over the world put the people as core position. All policies or measures must be human-centre and serve for society, otherwise the governments just loss their meaning and value of existence. Therefore, when we drafting a policy or planing a measures for some problems, human-centre thinking is necessary. On research methodology you said, such as field research, interview and then find insights, these are very similar to ours.

Do you think PSSD could optimize government's work?

Absolutely, I think PSSD could help government more on public service planing and infrastructure construction. Maybe you can also give more smarter suggestions to government on some main Chinese social problems such as pension issues or food safety issues. These issues has annoyed governments for many years and we are finding a effective solution all the time. If PSSD can help us to make a ecosystem where citizens can feel satisfied with the services governments offer such as education service or medical service, making people have a better life under the management of Chinese government, we will be very happy!

Do you like to know that? and how?

Yes, I hope to have a chance to learn it. I think it is a brand-new concept and new research method which could have positive effect on my work. In government, especially in our department, many worker are old and mature, so many times we cannot touch the new things and new concept which could lead to the future of society. We need to learn the updated thinking from young.

About learning channel, I think if there is a platform on which governments' people, design professionals and even our partners can communicate and learn PSSD together is better. The training class is also necessary, but I hope to the class is not traditional anymore, it should be more interactive and interesting. I look forward to PSSD can give us a new vision and smarter working way.

