Politecnico di Milano

Urban Young Mother's Online Shopping

Service System Design Research

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Type of degree: Laurea Magistrale

Degree Course: Product Service System Design

Academic year: 2011/2012

08.07.2012

Abstract

A new baby boom was embraced in 2006, indicating that the mothers born in 1980s will gradually become the new generation of Chinese mothers. As the young mothers were bon in the reform and open-up period, they have their thoughts and values greatly different from the traditional ones. Among the young mothers as the driver of the new society, the urban mothers show the distinct features. Therefore, to de-structure the demands and ideals of the new generation, it is the inevitable road to analyze the urban mothers. However, the urban young mothers are growing up in the Internet atmosphere, as a result, the online shopping is an indispensable aspect in their life. The thesis is to make an in-depth discussion over the urban young mothers based on the thinking of "human-centered", understand their online habits and shopping habits and design the product service system meeting their demands and visions.

Starting from the angle of methodology, the thesis re-organized how the "human-centered design" thinking guides the study of urban young mothers in terms of online shopping, and plan the overall study thinking based on the service system theories as the framework. Through the study of second-hand materials, quantitative analysis and qualitative analysis, an in-depth and meticulous study is conducted for the object, the brand core value is extracted through the emotional thread and several behavior models and user modes are summarized through all the data obtained. On the basis of brand core value and the behavior models, the feasibility and availability is tested in the focus group tests while conducting the prototype tests, leading to the final complete concept. In the end the product service system framework is utilized to realize the compete blueprint.

In the end, the previous study is summarized and outlook is made for the issues under implementation.

Key Words: urban, young mothers, online shopping, human-centered, product service system

ASTRATTO

Nel 2006 in Cina è stato registrato un nuovo boom delle nascite. Questo dato indica che le donne nate negli anni '80 diventeranno gradualmente la nuova generazione di madri cinesi. Le future madri sono nate durante il periodo della riforma, dell'apertura dei mercati e delle frontiere e hanno sviluppato un modo di pensare e un sistema di valori che differisce notevolmente da quelli tradizionali.

Le donne che vivono in città si distinguono maggiormente e si pongono come un fattore guida per le altre. Questo gruppo di utenti che vive nelle aree urbane, è stato preso in considerazione per comprendere a pieno lo scenario corrente e interpretare i bisogni e i desideri delle nuove generazioni di mamme.

Le urban young mothers sono cresciute ricevendo una forte influenza dal mondo di Internet; ne deriva un forte interesse per l'online shopping, che è diventato un punto forte del loro quotidiano.

La ricerca svolta per sviluppare la tesi è stata condotta adottando un approccio di tipo human-centered. Attraverso questa metodologia è stato possibile investigare sulle loro abitudini di acquisto on-line e comprendere in che modo utilizzano il web nella loro routine giornaliera.

L'approccio human-centered ha rivestito un ruolo fondamentale durante la fase di ricerca e ha determinato le linee guida per sviluppare un product service system che soddisfi le esigenze delle urban young mothers interessate all'online shopping.

I dati raccolti durante la fase di ricerca sono stati interpretati e utilizzati per definire una design direction, al fine di sviluppare un product service system che soddisfi i loro bisogni e generi una offerta che sia significativa per il gruppo di utenti analizzato.

La ricerca è stata condotta raccogliendo dati sia con metodi qualitativi, che quantitativi. Una desk research è stata condotta per comprendere a pieno lo scenario attuale; a questa investigazione è stata affiancata una ricerca sul campo per comprendere a pieno i valori del brand preso in esame, il comportamento, il problemi e le necessità degli utenti.

Il sistema sviluppato in fase di progettazione è stato prototipato durante un focus group, al fine di poter meglio comprenderne le potenzialità e i difetti.

Il risultato di questa analisi ha portato allo sviluppo del blueprint definitivo.

Infine, lo studio condotto e i risultati acquisiti sono stati raccolti e categorizzati al fine di ottenere delle linee guida per future implementazioni e miglioramenti.

Parole chiave: Urbano, giovani madri, online shopping, human-centered, product service system

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Chapter I Introduction

1.1 Research Background

Since 2006, China has entered the fourth wave of baby boom and over 20 million new babies are born every year. Up to now, there are 130 million babies and infants aged 0 – 6 years old in China, which is beyond comparison by any other countries in the world and is also superlative in amount for other industries in China to catch up.

As the new generation of social forces and the witnesses of social changes and development, the 1980s generation have gradually been engaged in the marriage, forming families. The mothers born in 1980s have gradually been becoming the principal forces of young mothers in the society. As the generation after 1980s was born after the reform and open-up and under the family planning policy, the mothers born in 1980s have defined the behaviors, psychology and social images of the new generation mothers.

Under the context in this era, Chinese mothers as the most important driving force take the responsibility of their children's education, cultivation and consumption and in nearly 90% of Chinese families, it is the mother that takes responsibility for children's consumption. As we may see that in present time, the mothers in China show great difference from the traditional mothers: they are the women born in a new era, have a high education background and play a dual-role in family and the workplace.

From the data we may conclude that the proportion of Chinese mothers with high education is increasing per year, so is that of mothers in the workplace. We observe that such a group of mothers have dramatic changes in terms of their values. For the mothers today, self-devotion is not a virtue any more and children's success is not the only expectation, they have their own career and emotional life beside their children and devoting themselves to their children no longer serves as the mainstream values. More than a half of mothers in China object to compromising of taking care of her husband for the sake of her children or giving up her career. Chinese mothers who stop sacrificing themselves will no longer pin their success entirely upon their children.

New generation mothers had a childhood in the peak development period of electronic technology, and as a generation in an era of popularized Internet, almost all the young mothers have respective online shopping experience. E-shopping websites aimed at the new generation mothers are increasingly popular. However, the online faithfulness issue is gradually emerging in the online shopping environment enjoying rapid growth, and concurrently online shopping raises higher requirements for the young mothers' judgment while providing convenience and low prices.

As a young mother of the new generation, she is the core in the family during her pregnancy and what she decides to use will influence other people in the family. After her child is born, she becomes the manager of the family and the selection and use of the products are at her discretion. As a result, if it is possible to make her choose the website during the pregnancy or before her child turns 3, it will help her form the loyalty and will greatly contribute to recommending or selling new products to her in the future.

In 2012, the author participated in the cooperation project between Continuum Innovation Consulting and a famous daily chemicals company, which was mainly targeted at the online shopping service system design for the young mothers born in 1980s from the period when the couple plans to get pregnancy to the period when the child turns 3. As the author was majored in product service system designing in Tongji University & Politecnico Di Milano, the author undertook the part of service system design in this project. The author hopes to take advantage of this opportunity and ultimately design a service system offering convenient online shopping for young mothers by the means of utilizing the service system design theories as the framework, combining the highlights of Continuum design with respect to the innovation approaches and innovative thinking, and carrying out the research on the online shopping habits and psychological demands of urban young mothers.

1.2 Research Objective and Significance

Under the premise and on the theoretical basis that many prestigious companies at home and abroad have conducted in-depth researches on the urban mothers, the principle objectives of this research are as follows:

1. Define the new generation young urban mothers: she is not only the mother of her children but also has multiple roles. For example, she is a professional woman, a

talent in her workplace or a family runner, or a wife of her husband, her parents' daughter, etc. The research works with the aim to define the roles of the new generation urban mothers and produce an appropriate service system according to the roles.

2. Understand the behavior changes of the new generation mothers in their pregnancy and identify what chain reaction the changes would bring about, for example, the change of lifestyle or the family.

3. Understand the online habits of the new generation urban mothers and extend to the understanding of the online shopping habits.

The significance of the research lies in:

Seen from the research object, the angle of product service system design provides a new thinking model and approach for the online shopping of new generation young mothers.

Seen from the social and cultural aspects, definition of new generation mothers, especially the research of the online consumption habits of the new generation mothers plays an important role in the understanding of the 1980s culture and the culture of the new generation.

Seen from the disciplinary development, the new targeted people generated in the service system of online shopping expand the branch of the discipline with respect to the inclusiveness.

1.3 Research Object

"Urban young mother" is not a conventional or strictly defined noun, however, in the objective of the project, P&G defines the urban young mothers as the mothers-to-be and mothers aged 25-34 in the first/second tier cities. Literally speaking, urban young mothers live in the cities in the first place, mainly in the first-tier cities such as Beijing, Shanghai and Guangzhou or large second-tier cities. The reason to choose such a group is that citizens in such cities have the most unobstructed communication with the outer world and the most developed consulting services and they generally represent the most advanced ideas and the future development trend. If it is possible to capture the psychological tendency or trend of the citizens there, basically it may predict the development trend in the second/third-tie cities. "Being young" is a concept of time to define the situation of a generation, and the young

mothers referred here are "the generation born in 1980s". People growing up in 1980s have a unique growth experience that any other Chinese generations did not have. The 20 years is the time witnessing the fastest growth of Chinese economy, the most acute transformation of Chinese social structure and the most rapid development of science and technology. In the two decades, people's minds begin to emancipate and the values develop towards a diversified direction. When people are still arguing whether the generation born in 1980s is the beat generation, there are many young women born in 1980s who have made their debut on the social stage, playing the historic role of the new generation mothers. Under the particular historic context, it is inevitable to produce multiple contradictions and conflicts when the growth experience runs into the traditional role "mother". To study the psychological features of the new generation mothers and the contradictions and conflicts of the roles they play will provide a favorable reference to the consumption group with respect to the offering of products and services.

To young mothers, shopping experience serves as a significant challenge and task between her roles. First, along with the development of online shopping and most domestic products are purchased online, price comparison and saving money has becoming an important task for them, the managers of their families; in the meantime, as the counterfeiting prevails online, it is required for them to have clear judgment when making the purchases, learn to select the most valuable products with good qualities. For example, so many mothers strive enough to buy milk powder. On the one hand, they must purchase the most economic products due to the huge consumption of milk powder, and on the other hand, they are concerned about their children's health as the continuous burst of poison milk powder, polluted milk powder and milk powder scandals. To the research, it bears great importance of the research on the online shopping experience of the group with complicated psychology for the reflection of the overall safety or faithfulness of the online shopping.

1.4 Research Methodology

The research methods adopted in the thesis include:

A. Literature research. Based on the online shopping experience of urban young mothers, the thesis is to fully and adequately understand the issues to be studied through the information summarized from the literature. The literature research is

employed to: (1) understand the history and current situation of the issues concerned; (2) form a general image of urban mothers, facilitating the observation and interviews; (3) obtain the materials to compare with the reality; (4) help to understand the urban young mothers in an all-dimensional way.

B. Qualitative analysis. The qualitative analysis is the most research method in this thesis. It is employed to analyze the "qualify" aspects of the research objects. Induction and deduction, analysis and synthesis, and abstraction and generalization are utilized to process all the materials obtained so as to discard the dross and select the essential, eliminate the false and retain the true, proceed from the one to another, and proceed from the exterior to the interior, thus recognizing the nature and revealing the inherent law. The qualitative analysis is mainly the deepening interviews and the analysis afterwards.

C. Quantitative analysis. In this thesis, the quantitative analysis is employed to further obtain an accurate recognition of the urban young mothers, so as to reveal the principle, master the nature, summarize the relations and predict the development trend in a more scientific manner.

D. Interdisciplinary study. In this thesis, multi-disciplinary theories, methods and achievements are applied to make the comprehensive study, which is also referred to as cross-disciplinary study. The law of scientific development indicates the science forms a unified unity through high differentiation and high integration. According to the statistics of experts, there are over 2000 disciplines in the world and the differentiating trend is getting aggravating, while the inter-relation between different disciplines is getting more close. There shows a gradual unifying trend with respect to the language, method and some other conceptual aspects. In this thesis, sociology, psychology and brand science are applied.

E. Case study. In this thesis, a specific object among the urban mothers is to be interviewed and analyzed so as to identify the features and the forming process. Three basic types of the case study are: (1) individual investigation, i.e. to study a specific person in the organization; (2) group investigation, i.e. to study a specific organization or group; and (3) issue investigation, i.e. to study a specific phenomenon or issue. In this thesis, the first and third types are employed.

F. Simulation (model). Simulation is a describing method which is to create a similar model based on the major features of the prototype, and indirectly study the

prototype through the model. In this thesis, a prototype model of shopping system will be built for testing at the final testing stage.

1.5 Research Framework

The thesis has a clear research framework:

It first carries out the feasibility analysis, proving and construing of the topic, with an aim to seek the methodological support conforming to the topic.

Then, it makes a research on second-handed materials for the current situation, and makes quantitative analysis of the research objects, while making qualitative analysis by choosing some samples.

It forms the overall trend and the guiding model oriented by the consumers' demands such as sensation model and shopping experience model by the analysis and summarization from the results obtained from the research. In the meantime, it also refines the core values of the brand and system.

Surrounding the core values, it proposes designs including service system design, experience design and visual design, and ultimately carries out the prototype testing.
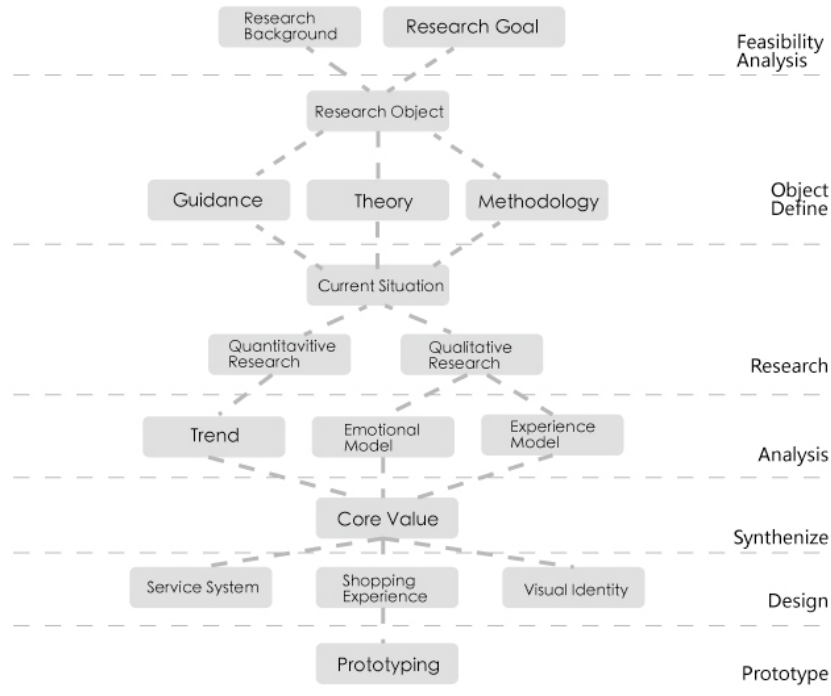

Fig 1.1 Research Framework (Designed by the author)

Chapter II Human-Centered Design

2.1 Philosophy – "Human-Centered Design"

"Human-centered" refers to that people's interest and demand shall be taken as the most fundamental issue and as the dimension to measure the output in the design.

2.1.1 Study of the Relation between the Online Shopping of Urban Young Mothers and the "Human-Centered" Design Thinking

"Products must help mothers to solve the practical problems in the daily life", Zhuang Shufen, CEO of Ogilvy Relationship Marketing Group Great China, pointed out, "If the brand can consider helping mothers to solve problems at the first place, the sales will be much easier and more effective. So based on the study, we look into and get an insight of how the urban mothers observe the surrounding world at present time and which position they have in such a world."

"As we discover, the image of many Chinese urban mothers is marginalized in the communication," Zhuang added and emphasized that the gap between many brands and the consumer group is increasingly expanding.

The foresaid conclusion is obtained by Ogilvy and Discovery through a long-term research on urban mothers. As they said, many brands and their advertisement do not start from the real situation of the urban mothers, but instead they abuse the brand characteristics and product features to exaggerate and give the words or features that the urban mothers are not expected to bear. The words such as "Perfectly balance your family and career" can do nothing but fail to reflect the inner desire of the urban mothers, as they do not wish there would be a brand to save them, and save their life. They only hope to achieve their inner desire and ideal through the pain-taking endeavors. As for the nature of the desire and ideal, there are few brands capable of really understanding.

According to the explanation in the "human-centered" design toolkit of IDEO, the human-centered design (HCD) will help you **hear** the real demands of a new field and new user; **create** innovative solutions to satisfy these demands and **deliver** the sustainable solutions on the basis of a feasible cost.

For this reason, the premise of the study conducted here is to engage the mothers in the whole design links and repeatedly verify their potential demands and ultimately engrave the design in their hearts by discarding the brand attributes and product limits and starting from the psychological and physical demands of urban mothers in a practical manner.

2.1.2 Principles for Human-Centered Design

1. Three Filters for Human-Centered Design

Human-centered design (HCD) is a set of technologies used to create new solutions for the world, including products, services, environment, organization and the interactive modes. It is regarded as "human-centered" because the design process originates from the users applying our services. At the inception of HCD, tests of users' demands, dreams and behavioral habits are conducted. Users will also directly influence the proposed solution.
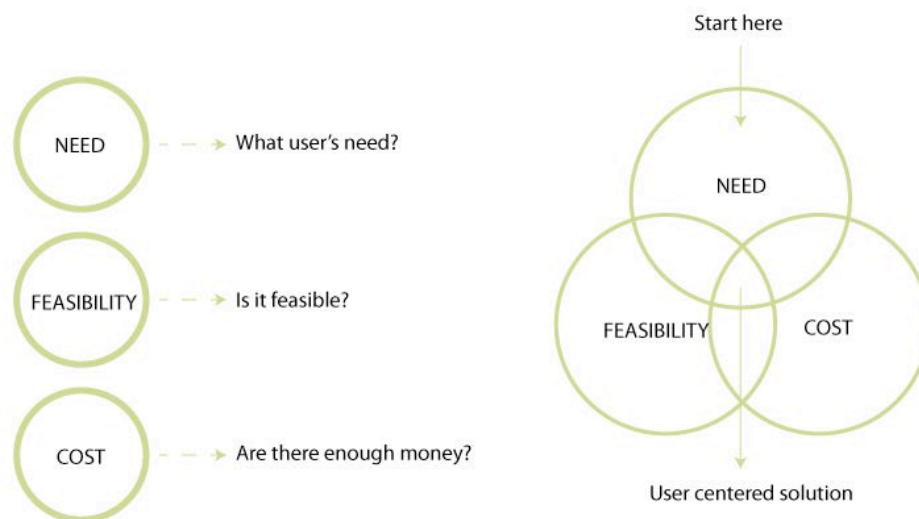

Fig 2.1 2.2 Three filters of HCD (Designed and translated by the author)

We hear the public opinion and understand their demands which we call as demand filter, see Fig 2.1 and 2.2.

Once we have identified the range of demands, we will filtrate our solution by the feasibility and cost filters.
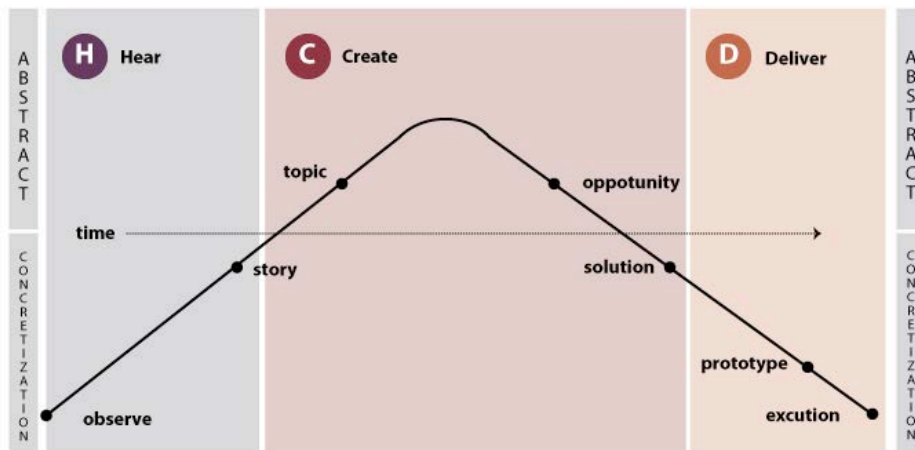
2. Human-centered design process

Fig 2.3 HCD process (Designed and translated by the author)

The human-centered design process mainly involves three stages: Hear, Create and Deliver.

At the stage of "Hear", the design team collected users' stories and keep the inspiration. It mainly focused on the preparation and the on-the-spot study.

At the stage of "Create", the team worked in collaboration in the form of workshops and designed the general framework, solution and prototype by analyzing what they heard. At this stage, the collaboration turned from the concrete into the abstract. By abstracting the ideas, the team determined the theme and looked for the opportunity to solve the problems and finally returned to the concrete solution and prototype.

At the stage of "Deliver", the team achieved the solution from low-cost modeling, capacity assessment and plan implementation.
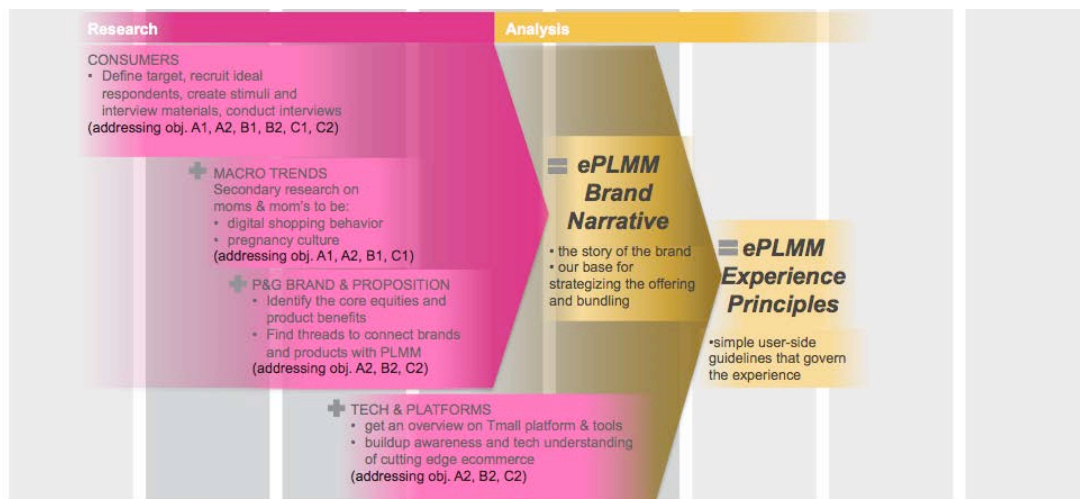
Fig 2.4 General thinking under the guidance of human-centered (Designed by the author)

In the study, the three steps of hear, create and deliver evolve into investigation, analysis and design.

In the step of Hear, in-depth research is adopted: the team made detailed interview outlines and scenario materials and interviewed and investigated the target users, potential users, leading users and expert users. In the meanwhile, the analysis of the second materials on macro-trend, brand values and the research of technologies and platforms were concurrently carried out. We have obtained a well-interpretation of the three filters of HCD and also measured ourselves while investigating the users.

In the step of Create, we created the brand story first and utilized the brand story derived from the summarization and analysis to re-define the system we are going to create. As for the technology, we drew up the online shopping journey of users and created the new ideal experience model based on the previous behavior analysis.

In the step of Deliver, the output of opportunity & idea and the testing are the most important link. The system was in principle set up after several modifications after the prototype testing.

2.2 Theoretical Framework –Product Service System

2.2.1 PSS is Result-Open Design Study Process

Currently, the world design discipline is facing the transformation from "material design" to "strategic design", from "design practice" to "design thinking". The "expanding" design may offer strategies for "expanding" issues, becoming an interpretation for the innovative development and also an exploration into the brand-new and unique fields (Bistagnino,2008). In the middle and late 1990s, the United Nations Environment Programme (UNEP) proposed the concept of product service system (PSS), the key philosophy of which is that what an enterprise offers its consumers is the function or result of the product and the users may not own or purchase the products with physical forms. PSS relates the tangible products with the intangible services, aimed to solve the environment issues from the angle of system theory. The concept creates opportunities to turn from the separate production cycling to the integrated production and consumption cycling.

(1) PSS can be summarized as an innovative strategy for enterprises. It needs to plan PSS system, including the mechanism, tools and implementing methods, from the angle of enterprise strategic level.

(2) PSS aims at satisfying the customers' demands and creating new product values while aiming at the sustainable development.

(3) The composition of PSS involves the systematic consolidation of products and services. PSS is not a pure product or service but a combination of the two. There is tangible material flow but also intangible service flow in PSS.

The reason to apply the PSS as the theoretical framework of the study lies in that it is a result-open design study process, and the research object we are discussing is a group emphasizing the products as well as the services. Their demands are not linear but divergent. A website design or product design alone would not satisfy their divergent demands while the integration of material flow and service flow of the PSS will enable the mothers to do at will in this system.

2.2.2 Major Process and Methods of PSS

The design process of the PSS design includes analysis, concept generation, development and prototype testing.

Analysis The tools and methods apply different medias such as videos, audios, photos and words to record the different information under the specific context. It may be obtained from direct user interviews or joint participation in activities to explore the recognition and experience of users. Major tools are my space, user process (see Fig 2.5), direct story telling, emotion diagram, design record, video blog, film diary and story collection.
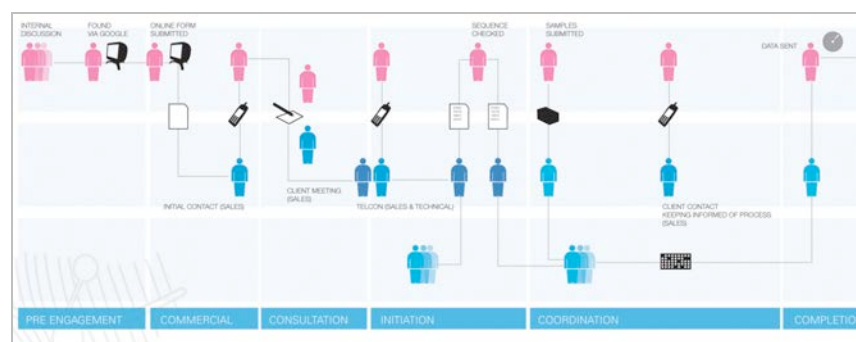

Fig 2.5 Example of user process (Captured online)

Concept generation These tools help the project participants build the design concept in the joint activity through direct or indirect dialogues. By different

visualized measures, the service concept or story is raised. Major tools are idea draft, inspiration diagram and service mood board.
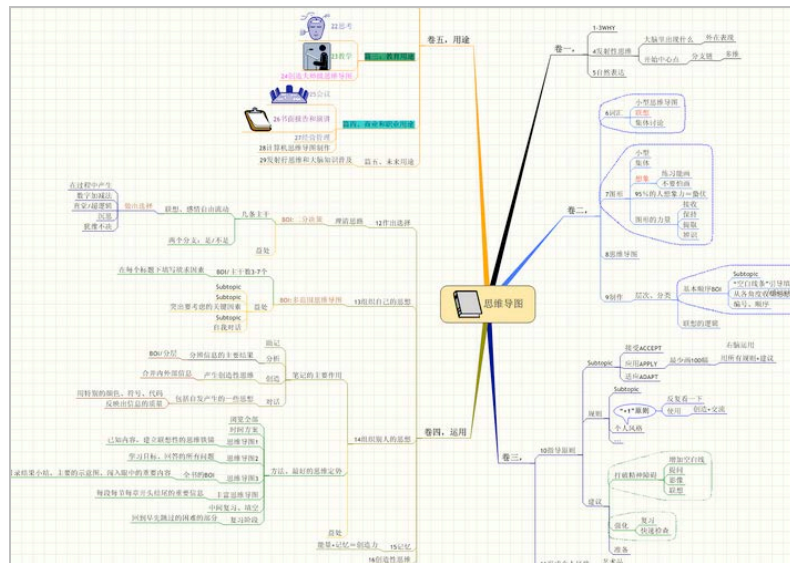
Fig 2.6 Mind map (Captured online)

Development helps build a story and system with more concrete and abundant visual effects. By assessing the feasibility of the services, the designers are allowed to consider the concrete links of the whole service system. Major tools are micro-environment map, story board, service blueprint, visualized service script, system map, service interactive design guidance and feasibility.
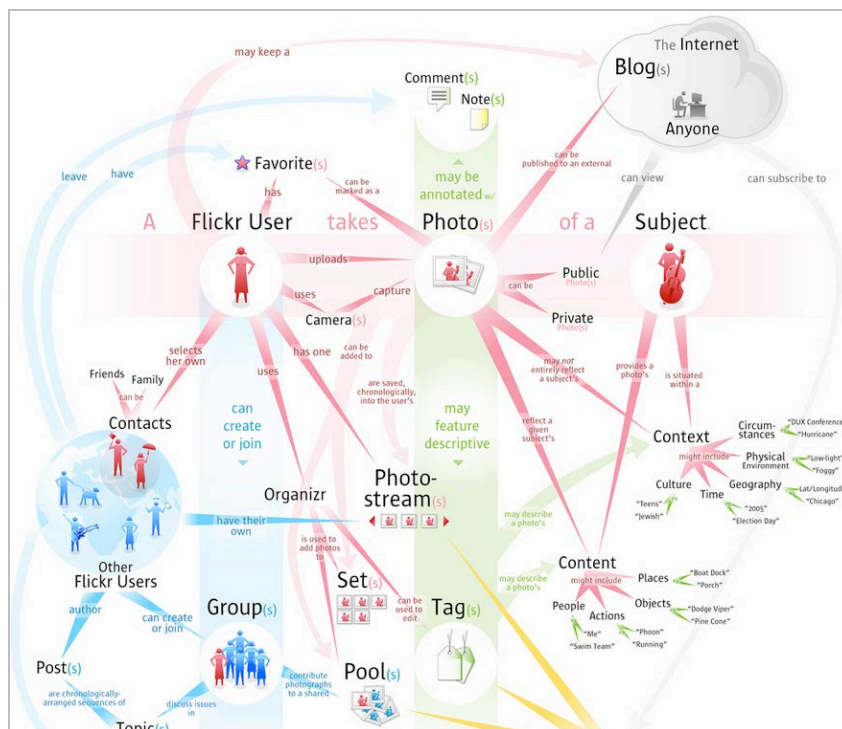
Fig 2.7 Example of system map (Captured online)

Prototype testing offers modules to allow the designers to conduct quick tests of new service systems in the workshop or actual environment. By providing an opportunity for people to experience the service system, it will obtain the feedbacks so as to reduce the failure of service designs and build a future with more significance. Major tools are video draft, live lab, FASPE and experience prototype assessment.

Fig 2.8 Website wireframe (Captured online)

Chapter III Research on Online Shopping Experience of Urban Young Mothers

3.1 Organization of Research

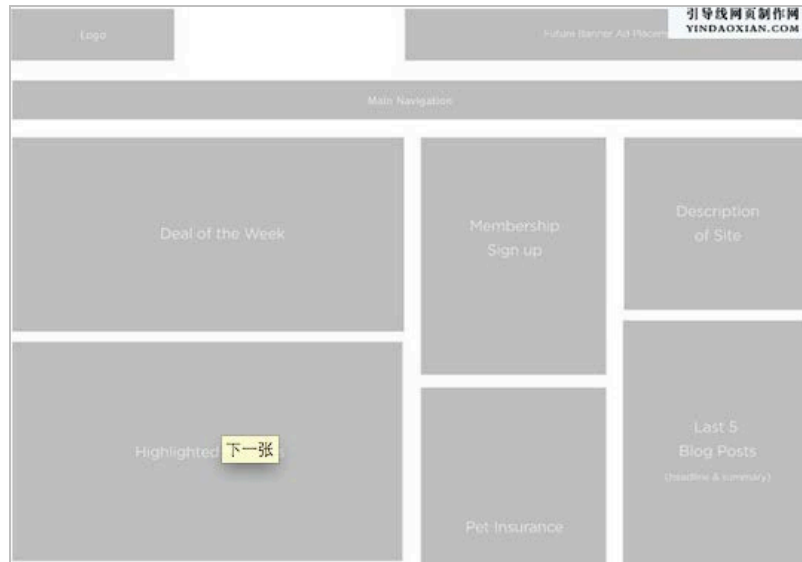Taking the "human-centered" as the principle and starting from the angle of users, the research intends to explore the potential demands and practical demands of users.

The research is divided into two parts:

1. Existing information research of the online shopping of urban young mothers

In this chapter, we make a foreshadowing for our research based on the current research situation of urban young mothers and also provide guiding suggestions for the research; in terms of the research of the current online shopping service systems, we will make a large quantity of in-depth analysis of the structure of the online shopping service systems targeted at the young mothers and the systems not specifically launched for the group from the experience nodes of the whole online shopping.
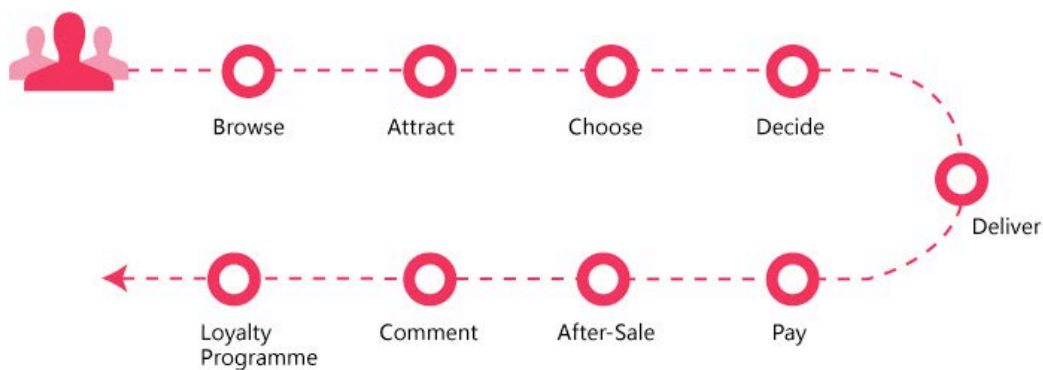
Fig 3.1 Journey nodes of users' online experience (Designed by the author)

2. Users study

The methods for the users study include qualitative research and quantitative research. The qualitative research is a method to discover new things from a small sample size, such as user interview, on-the-spot research and availability test. The quantitative research is a method to test and prove something with a great amount of samples, including questionnaire, focus group, website visit statistics, log analysis and

CRM data analysis. The former method focuses on discovering the demands, understanding the users and exploring the unknown; while the latter one focuses on proving and detailing the findings of the qualitative research.

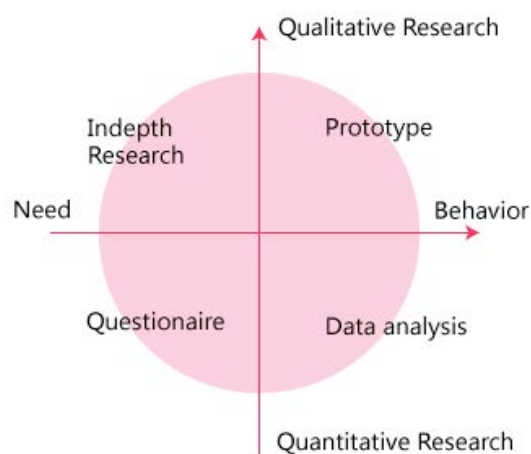Fig 3.2 Different methods applied for the qualitative research and quantitative research on behaviors and demands (Designed by the author)

(1) Quantitative research

The quantitative research of the thesis is to analyze the sales information of the brand products targeted at the mothers in the previous year and conduct a quantitative research of over 26,000 urban mothers-to-be and mothers aged from 24 and 54 by adopting the data system of the daily chemicals company and the existing research channels.

Basic framework of the study is:

a. Data analysis, including overall features of shopping, selection of website channels and consumption hierarchy;

b. Quantitative research, which is focused on the study of the mothers' online behaviors, for example, the most visited websites, online activity, daily online time, types of visited websites and what do they do online;

The quantitative research produces the structure of the online behavior and online shopping behavior model of urban young mothers, laying a foundation for the qualitative research to further dig into the deep demands.

(2) Qualitative research

After obtaining a preliminary understanding of the online behaviors and shopping behaviors of urban young mothers based on the current situation research and quantitative research, we have made the following research structure considering the potential demands of the users we want to discover:

a. Discover her habit repetition from the daily life habits of the research object, understand the daily behaviors and self-awarding behaviors in her habits and the threads and awards which produce the habit repetition;

b. Outline the milestone during her pregnancy and the whole process including the psychological change process by capturing the behavior change points and dissatisfaction during her pregnancy;

c. Understand the use of the products, brands, retail stores (including online stores) during her pregnancy;

d. Understand the online and offline consumption habits of the research object and outline her purchasing process;

e. Study her respective psychological changes as a woman and a mother and also the female image she really wants to become in her inner mind;

The qualitative research will discover the potential demands of the users from the above five aspects and form a new ideal role positioning, online shopping journey, pregnant behavior process, daily life process and other models.

3.2 Desk Research

3.2.1 Research Objective and Methods

The preliminary research is mainly aimed to have a thorough analysis of the research situation at home and abroad of urban young mothers and the existing online shopping experience designs targeted at the young mothers. It will also categorize the current researches and online shopping experience to extract the common model in the existing online shopping experience, for example, online shopping journey or the common practices of online shopping. And it will also seek the part that is not covered by the current researches and experience and find the entry point.

3.2.2 Domestic and Foreign Case Study

The case analysis can be divided into two parts: the first part is the analysis of competing products. It will make thorough analyses of the existing baby & mom websites including domestic and foreign ones, find their respective advantages and shortcomings and ultimately get the conclusion of the market vacancy and the field to be developed. The second part will starting from the whole shopping journey, seek

how the latest service systems improve the shopping links to offer more convenient and fast services.

1. Analysis of Competing Products and Research of Baby & Mom websites

  (1) Research of domestic and foreign baby & mom websites

The thesis makes an in-depth research of several domestic websites, including the comprehensive portals, such as baby sina, pcbaby; professional vertical portals, such as iyaya, muyingzhijia, 10month and babytree; shopping websites such as redbaby and duoduoyuan; and also the professional brands of baby & mom products such as Octmami and goodbaby. Here only 1-2 cases are chosen to analyze the advantages and disadvantages.

Representative of professional websites at home: www.iyaya.com

Fig 3.3 Homepage of iyaya.com (Captured online)

iyaya.com is a baby & mom website set up early in China, rich in content and with complete information. It has sites scattered across the country, with a strong regional feature. The notable interaction is the navigation bar located on the top which is classified by the pregnancy. The function is common in many websites but was early applied by iyaya.com which turned out a good performance. There are many but scattered knowledge boards, featured by the infants and babies.

Representative of shopping websites: www.ohmabay.cn

Fig 3.4 Homepage of duoduoyun.taobao.com (Captured online)

As the representative of the one-stop baby & mom shopping website in the domestic market, the four-golden-crown duoduoyuan.taobao.com is a big online store mostly trusted by the mothers. Its complete organization and rich products attract many mothers to purchase only on this particular website. The faithfulness is its first advantage and the credit accumulated through the years' operation wins high popularity for it although the prices are a little higher. Duoduoyuan has a frequent interaction with mothers and there is a sign-in function in the respective groups, and many theme discussion areas such as second-hand exchange. Mothers may not only buy what they need but also get various information.

   (2) Research of foreign baby & mom websites

There are miscellaneous baby & mom websites in the foreign countries, including authority nurturing websites such as babycenter, comprehensive websites for the family such as babble, websites specific for the mothers such as momsrising.org and cafemoms, and website exclusive for baby & mom supplies such as diapers.com. Here only 1-2 cases are chosen for analysis.

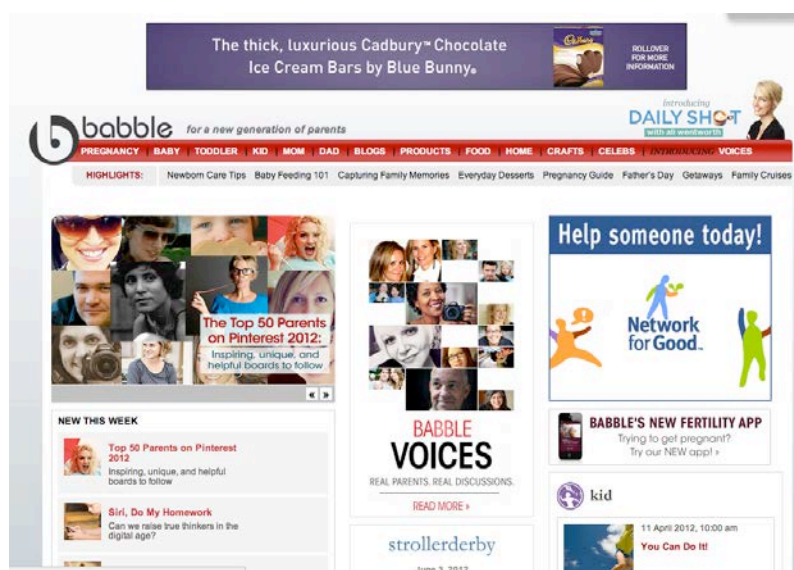Foreign comprehensive website for the family: babble

Fig 3.5 Foreign website babble.com (Captured online)

This is a home-featured information website, mainly targeted at the mothers with children. It not only offers the nurturing knowledge but also key information such as conjugal relation maintenance, self-image building, female cultivation and news, with an aim to help build a perfect female image not only an image of mother. This is an advantage worth referring for Chinese websites. As the era advances, the increasingly important position of the females makes them start to wish different roles other than the role of mother, and the diversified knowledge is also their desire.

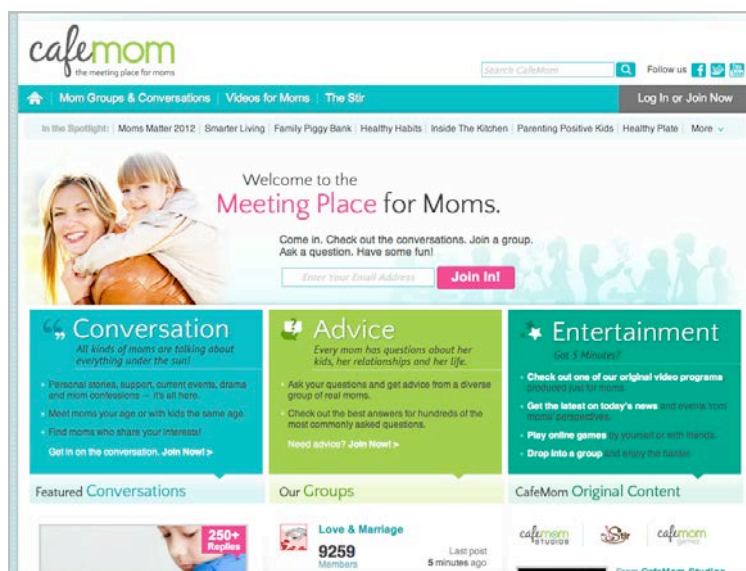Entertainment website for mothers: cafemom.com

Fig 3.6 Foreign website cafemom.com (Captured online)

This is a platform for mothers to communicate and entertain. Under the platform, mothers may communicate and organize gatherings at ease. This is more like a platform to express their attitudes. The website adopts the word "cafe" to demonstrate

the entertainment, and mothers may enjoy their own time here. They may initiate the topics, seek for suggestions and look for the recent consultation.
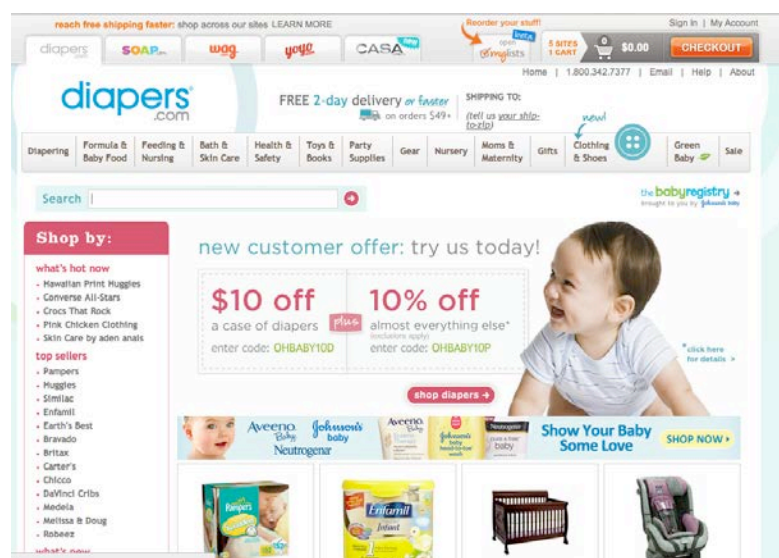
Foreign shopping website: diapers.com

Fig 3.7 Foreign website diapers.com (Captured online)

diapers.com is a prevailing shopping websites for baby-oriented supplies in the foreign countries. The complete products and delivery speed attract many consumers. Different from the domestic websites, the catalogue and classification may enable the users to locate their most wanted products in the shortest duration. More and more Chinese mothers buy on the diapers.com now.
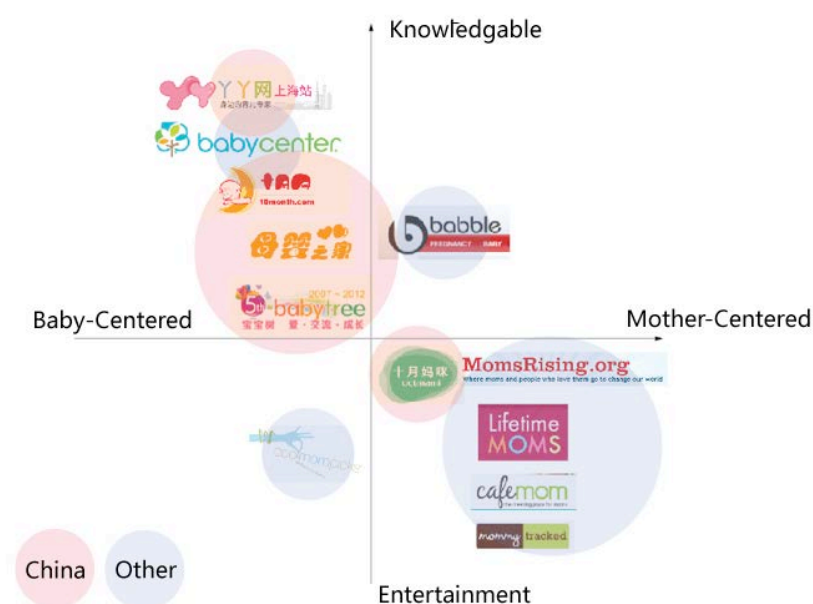

Fig 3.8 Comparison of domestic and foreign baby & mom websites (Designed by the author)

(3) Research summary of baby & mom websites

After collecting, classifying and deconstructing a dozen of baby & mom websites at home and abroad, we obtain the above diagram. The vertical axis refers to the nature distribution of the websites, upward is the knowledge-featured websites and downward is the entertainment-featured websites; and the horizontal axis refers to the content preference of the websites, leftward is more emphasized on babies while the rightward is more emphasized on mothers. After the division of the websites, we may see that the foreign websites are evenly distributed in the coordinate axis, more emphasizing on the entertainment and mothers. While the Chinese websites basically remain in the segment of babies and knowledge-featured. It also partially reflects the current pregnancy culture and social phenomenon of China, i.e., the family is still baby-centered. The whole family shows a great emphasis on the care and nurturing of the baby and they wish to see more knowledge related to the nurturing.

2. The latest shopping service systems at home and abroad

The study of the latest shopping service systems at home and abroad is carried out from several links such as from the daily browsing, being attracted, judge and select products, decide to buy, express delivery, confirm the payment, after-sale service, comment and loyal members.

(1) From daily browsing to being attracted

As the increasing popularization of online shopping, users no longer use the search engines alone or directly make the purchase on taobao. As an entertainment, online shopping is not a status of buying online for the sake of buying products any more. Sellers also begin to apply several measures to expose their products or stimulate the shopping desire when the users are browsing. Then the window-shopping also becomes a trend.

The shared shopping such as mogujie.com is the most typical representative of this trend.

Fig 3.9 Homepage of domestic website mogujie.com (Captured online)

Mogujie.com uses the users to generate contents by posting photos and after-use comments to attract other users. This also forms an aimless shopping experience, i.e., the user is not expected to buy but only browse, however, the shopping desire is stimulated when she comes across the product she likes, and the order is thus placed.

(2) Judge and select products, decide to buy

For the users born in 1980s, they will learn the product attributes and compare the prices after they have had the online shopping habits. How to reduce the cost of decision-making has become a link of online platforms to consider. From the commercial angle, the counterparty has to pay a certain amount of commission for the visits and conversion, as a result, they all take the lead to introduce the online shopping supplementary products to help the users make the decision.

Fig 3.10 ltshd.com, taobao plug-in application (Captured online)

ltshd.com (U-da) is an application of taobao.com, which helps users to choose the most suitable match by using the color and style search.

Fig 3.11 Homepage of a foreign website littleblackbag (Captured online)

LittleBlackBag is a monthly subscribed package. It even does not tell the content inside which directly save the hard decision-making process for the users. When getting the package, they may also invite friends and exchange the package.
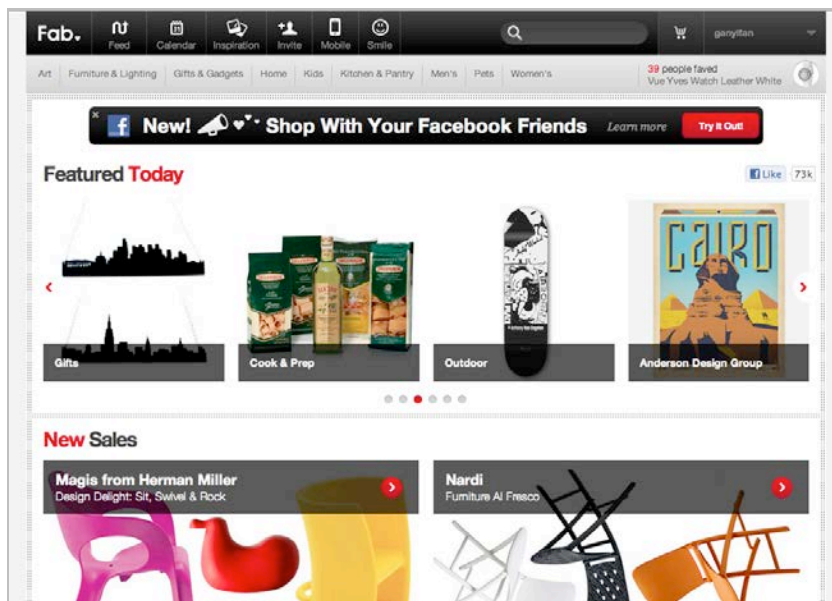

Fig 3.12 Homepage of a foreign website fab (Captured online)

Fab.com is a time-limited shopping website, which selects a series of products most suitable for the consumption group and limits the purchasing time, reducing the decision-making time and leaving the users few opportunities to think twice.

(3) Express delivery

Domestic delivery industry has reached a peak status with respect to the speed, however, the service quality is yet guaranteed. The process is not a link of sending but also includes the packing and pick-up. There are several efforts made on the packing and pick-up links.

For example, Pampers brought out a commemorative package box and many mothers bought Pampers for the box.

In the pick-up link, considering that some office workers are not allowed to pick up the delivery, many large chain stores and supermarkets propose different solutions.

In March 2011, Wal-Mart introduced the service Pick-up today, allowing the users to purchase products online and pick up the products in the supermarket after work. And 7-11 also introduce the collection service by others.

(4) Confirm the payment

In terms of the payment methods, alipay and paypal have basically replaced the common credit as the mainstream payment method due to the guarantee. While the reform of some payment methods is the innovation of the payment medias, for example, the mobile wallet and the convenient service like square.

Fig 3.13 Screenshot of the use of square (Captured online)

Square is a combination of an APP of the Apple and the external device, which may realize the payment to any account by swiping the credit card.

(5) After-sale service

The implementation of after-sale services will directly influence customers' service experience. Now, along with the booming express delivery industry, the real-time after-sale services have reached a satisfactory level by many sellers. For example, VANCL builds its own logistic center which may enable the users to try on the clothes on-the-spot and return the products if they do not like it. Furthermore, yihaodian.com introduces the door-to-door service such as picking up the unsatisfactory products in order to ensure the timely product-return.

(6) Comment

The comments made by the users after they buy the products are vital for the credit of the sellers. However, many users do not like make comments after purchasing. As a result, in terms of how to inspire users to make comments, the try-out report is a solution. Taobao, yihaodian and other sellers all build the try-out center and inspire the application for the try-out. A try-out report is required to submit after the completion of the try-out. The comments in such a form are preferred by users.

(7) Loyal members

In order to win the regular users, all websites compete to introduce the membership system. For example taobao introduces the taobao golden coins, every user may get the golden coins if he/she logs in every day and the coins may offset the cash if reaching the threshold. The increased visits are more worthy than the deducted parts.

(8) Summary

Seen from the latest services designed according to the online shopping journeyes at home and abroad, the design of online shopping services globally manifests the following trends:

a. Make the purchase when the aim is not that strong and stimulate the impulsive consumption

b. Reduce the decision-making cost in the case that the user has a practical demand, and compete to introduce the shopping supplementary applications and become the upper stream of the industrial chain

c. Combine with the online and offline coordination and transfer the complex offline work to be solved online

d. Focus on the service experience and get a good comment by all means

e. Encourage users to generate information, including the comments and experience and influence other users with the generated information

f. Create various attraction modes to attract the visits, including daily sign-in.

3.2.3 Summary of Preliminary Research

1. The domestic studies on mothers and online shopping are separate and sociology and ethics are mainly to study the mothers on the role or the social significance; while the discussions on online shopping remain on the operation and business mode. How to add the social or humane element into a business mode is a highlight that the thesis wants to challenge.

2. The major competition between domestic online shopping systems is the price and service process. Whoever can maintain the lowest price and whoever has the best service can take the leading position in the market. By contrast, users' emotional experience or users' emotional guidance has not taken a certain share in the form or the function of the website. As the role of mother that has a deep emotional feature, the advertising and publicity alone will not build a long-term emotional experience or reliance. However, as for the foreign websites, the shopping websites have unique specialties, and have a strong engagement on the emotional level, which may give the users a feeling of the new world and new environment. And shopping under such an environment will trigger more accidental purchases or impulsive consumption. For e-sellers, the emotional substitution has an important assistance to the two key indicators, the conversion and unit price.

3. In terms of the shopping service system, as some trends mentioned above, the following research will focus on analyzing whether there is any intersection between the specific group and these trends, and whether the trends satisfy the practical demands and potential ones of the group.

3.3 Quantitative research and Analysis of Urban Young Mothers With Respect to Online Shopping

As mentioned above, data analysis and quantitative online research are mainly used in the quantitative research to obtain the key data set for the consumption group including the overall shopping features of the group, selection of website channels and the consumption levels and a great quantity of data concerning the online behaviors of the mothers, such as the most visited websites, the online activity, daily online time, the website types and what do they do online.

The data analysis is acquired from the online sales of diapers in 2011 and the first half of 2012 of the daily chemicals company. The quantitative research is conducted by the online research system of the company in the form of an online investigation of over 26,000 mothers aged 25-34 who are ranged from the mothers in their pregnancy to those with children younger than 2.

After the quantitative research, it forms the construction of the online behavior and online shopping behavior model of urban mothers, laying a foundation for the qualitative research to explore the deeper demands.

3.3.1 Analysis of Existing Data on Domestic Young Mothers With Respect to Online Shopping

The research objects basically cover the fundamental attributes of the young mothers group living in the first-tier cities, and the research may be divided into:

1. Online shopping is the channel with the fastest overall sales growth and percentage growth in 2011 and 2012 H1, and large supermarkets see the fastest percentage decrease, flowing towards the online shopping.

Analyzed from the behaviors, it is speculated that as the baby-oriented products are heavy or big in size while there are few large supermarkets, with one to two large supermarkets to be shared in one region, and customers are not willing to carry the very heavy or big products home, by contrast, the express delivery service of online shopping is door-to-door service, which cuts off the step of self-pick-up, greatly reducing the unnecessary troubles during the process.

	FY10/11		FY11/12	
	Biz split	IYA	Biz split	IYA
HSC Hyper/Super	59%	115	55%	114
-G12	28%	115	26%	114
-RD	12%	110	11%	111
DMC Hyper/super	19%	118	19%	118
Mini/TT	16%	113	15%	113
Baby Store	18%	130	19%	128
E-commerce	8%	178	12%	178
National	100%	123	100%	123

Fig 3.14 Increase percentage of online shopping (Extracted from the project research report)

2. In the percentage change of B2C (business to customer) and C2C (consumer to consumer), B2C has an increasing share. B2C is the growth engine in future, along with the constant expansion and growth of e-sellers, the traditional vendors are moving the stage onto the Internet, leading to their competition ultimately becoming the bare price competition. The price competition will lead to the outcome that consumers will have more selection and more preferential prices. By contrast, C2C is in chaos, featured by lower prices yet higher risks. In selecting the baby/mom-oriented products, mothers are more willing to purchase the quality products with more money.
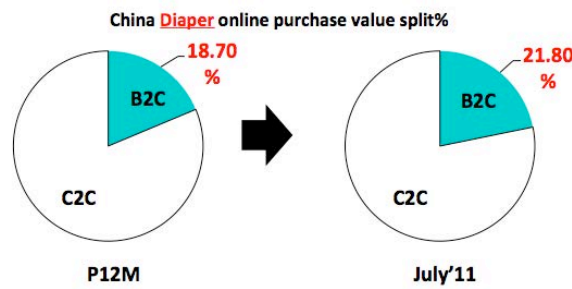
Fig 3.15 Market share change of B2C and C2C (Extracted from the project research report)

3. In terms of the use of concrete websites, the top 10 B2C websites take almost over 70% of market shares while in the C2C market, taobao is the best, taking over 86% of market shares. All websites have their respective features with respect to the distribution of consumption group, and the feature distribution is determined by their initial business: for example, dangdang.com originally sold books and its fixed consumption group is basically the group with higher education background and strong consumption capability.

Top B2C customers	Diaper B2C on-line purchase biz importance	Total commodities B2C on-line purchase Biz importance
Taobao	23%	52%
Dangdang	12%	4%
YHD	10%	1%
Red Baby	8%	3%
Amazon	6%	5%
Haolijia	6%	<1%
Jingdong	3%	18%
Total	68%	82%

Fig 3.16 Market share of varied websites (Extracted from the project research report)

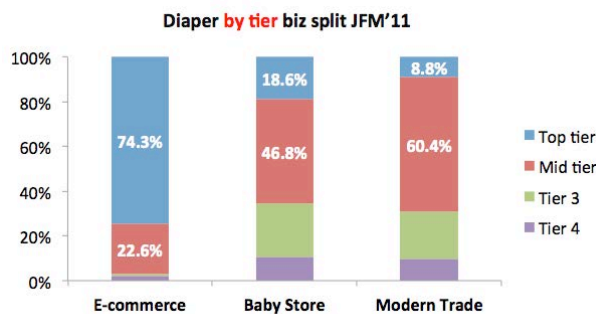4. Consumers of the top consumption level almost purchase diapers online

Fig 3.17 Percentage of diapers among different consumption levels (Extracted from the project research report)

5. Summary of data analysis

From the above data, we may make a judgment about the basic attribute of users, and have a certain understanding of the reason why the daily chemicals company positions itself in the females with a high consumption level in the first-tier cities. In the group willing to buy diapers online, people with a high consumption level take the majority, which means the consumption level of baby-oriented products bought online is higher. People are more willing to choose more expensive but more ensuring places.

3.3.2 Online Questionnaire of Urban Young Mothers on Online Consumption Habits

As the quantitative research, studying the whole online behavioral habits of our targeted users is the basis for the study of the online shopping behaviors.

1. The most visited websites:

Among the most visited websites by the mothers, the portals and search engines take the majority, followed by the social websites and entertainment websites. The visits of vertical websites are scattered and every one has her own favorite or loyal vertical websites.

Rank	Website	%
1	Baidu	44.5
2	Sina	33
3	QQ	33
4	Sohu	18.9
5	Taobao	18.1
6	Tudou	13.4
7	163.COM	10.7
8	Youku	7.9
9	Kaixin001	6
10	Google	4.3

Fig 3.18 The most visited websites of urban young mothers (Extracted from the project research report)

2. Online activity of urban mothers

Analyzed from the above data, young mothers who have an average online time of 2-3 hours take the majority, distributing positively and how to capture their attention in the 2-3 hours is a critical topic in this thesis. And how much is task-featured in the 2-3 hours, the online experience for work, and how much is for leisure, the online experience for entertainment are also the important content to be studied afterwards.
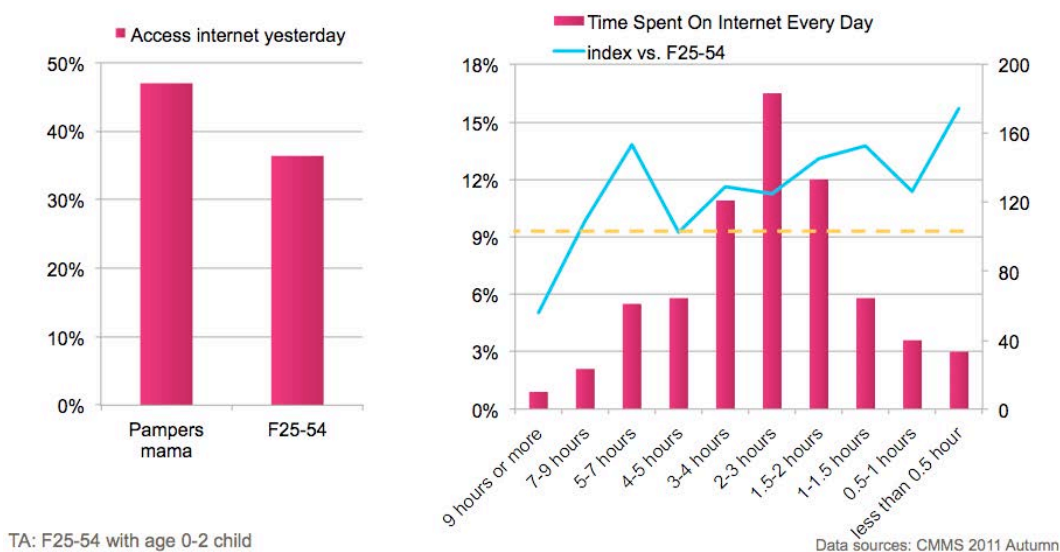
Fig 3.19 Online active time of urban young mothers (Extracted from the project research report)
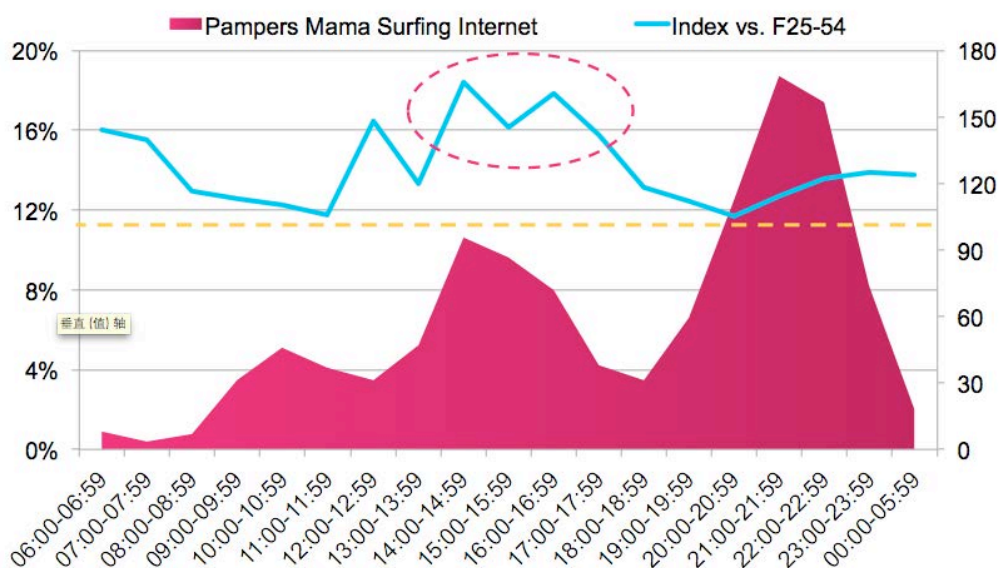
3. Online time distribution

Fig 3.20 Online time distribution of urban young mothers (Extracted from the project research report)

The online time of Pampers mothers concentrates on several small peaks, i.e. 3 pm and 10 pm, while mothers aged 25-54 generally will have a concentrated peak time between 3-5 pm. The experience design targeted at these few particular hours may become the focus of improving the overall shopping experience.
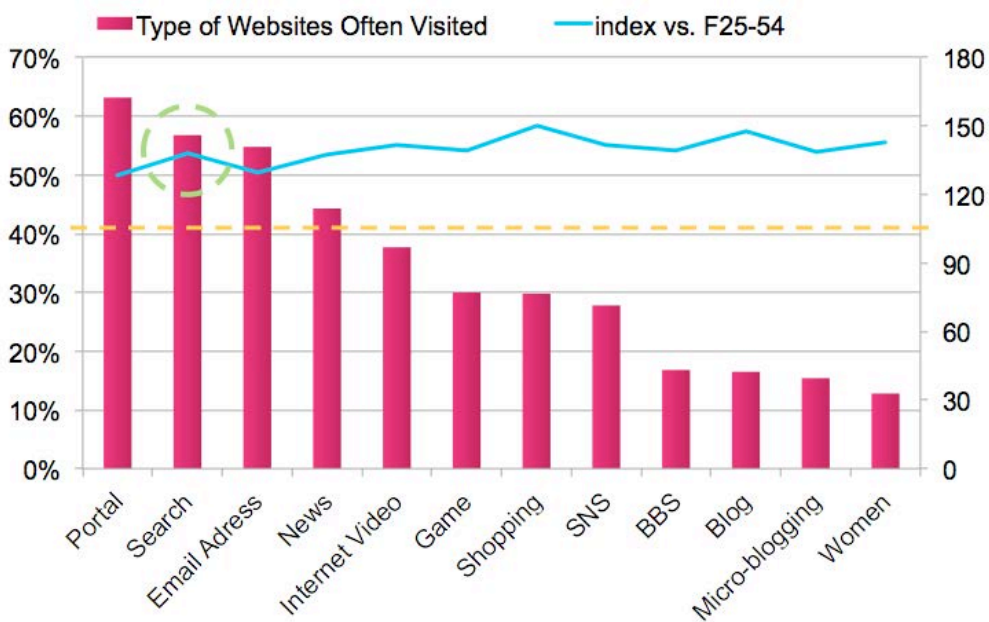
4. Website types most visited by mothers

Fig 3.21 Website types most visited by urban young mothers (Extracted from the project research report)

Similar to the data in (1), the most visited websites are portals and search engines, followed by the entertainment websites. Research on the browsing process of these websites will offer guidance to the online browsing habits and the ideal online experience design.
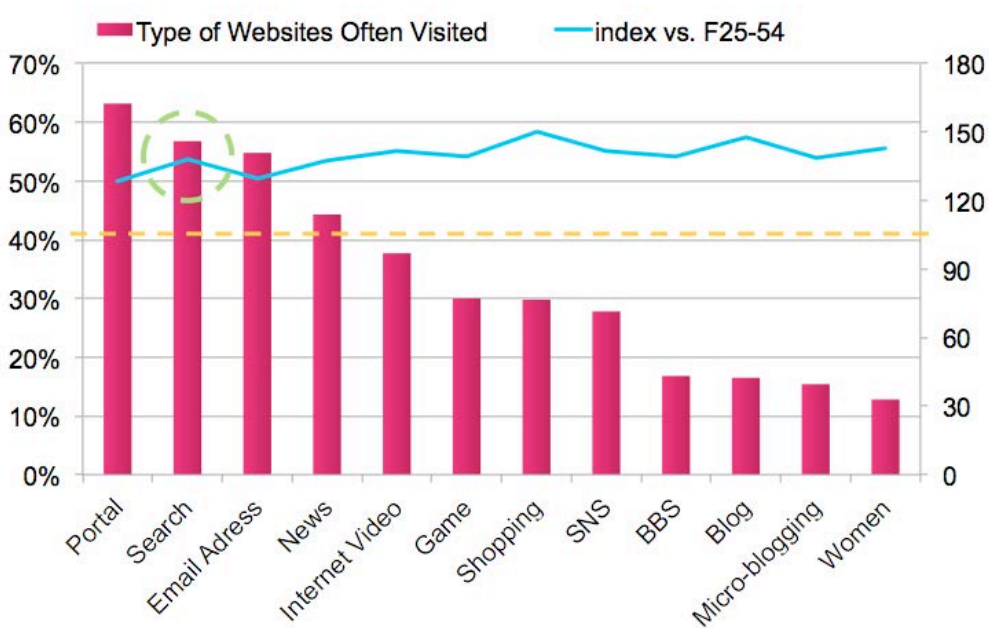
5. What do mother do online?

Fig 3.22 What do urban young mothers do online (Extracted from the project research report)

From the table above, we may see the online activities of mothers, and the elements and processes to generate the activities and the transforming points can be regarded as a way and approach to study how to enter the shopping mode from other modes.

6. Summary of quantitative research

(1) Several entry modes of mothers when surfing the Internet

The online behaviors of mothers can be generally divided into five types: seek for knowledge, entertainment, social interaction, shopping and others. For the study of the shopping system, it can be transformed into how to integrate the online modes into one system and encourage them to turn to the shopping mode from other modes through a transforming point.
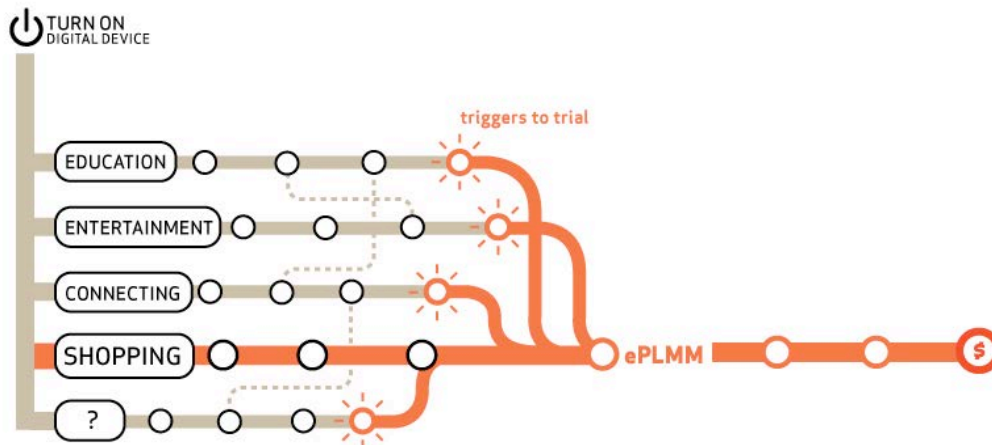

Fig 3.23 Online shopping journey of urban young mothers (Designed by the author)

(2) "Mother" is a role with a heavy time perspective

As mothers have to take care of babies and also go to work, mothers' time is generally regular and seizing their regular time will facilitate to introduce proper products to them in proper time.

3.4 Qualitative Research and Analysis of Urban Young Mothers in Terms of Online Shopping

3.4.1 Research Objective

Fig 3.24 Research framework (Designed by the author)

After obtaining a preliminary understanding of the online behaviors and shopping behaviors of urban young mothers through the first round background investigation and online research, we make the following research objectives considering the problems to be solved

Discover her habit repetition from the daily life habits of the research object, understand the daily behaviors and self-awarding behaviors in her habits and the threads and awards which produce the habit repetition;

Outline the milestone during her pregnancy and the whole process including the psychological change process by capturing the behavior change points and dissatisfaction during her pregnancy

Understand the use information of products, brands and retail stores (including online stores)

Understand the online and offline consumption habits of the research object and outline her purchasing process

Study the respective psychological changes as a woman and a mother and also the female image she really wants to become in her inner mind

3.4.2 Research Recruitment ---- Ask the Right Person

The "human-centered" design thinking requires an in-depth and vivid analysis of the consumers or users. Other than the foresaid "Ask the right questions", it is also

required to demonstrate the judgment and preliminary analysis of the targeted group when selecting the interviewees.
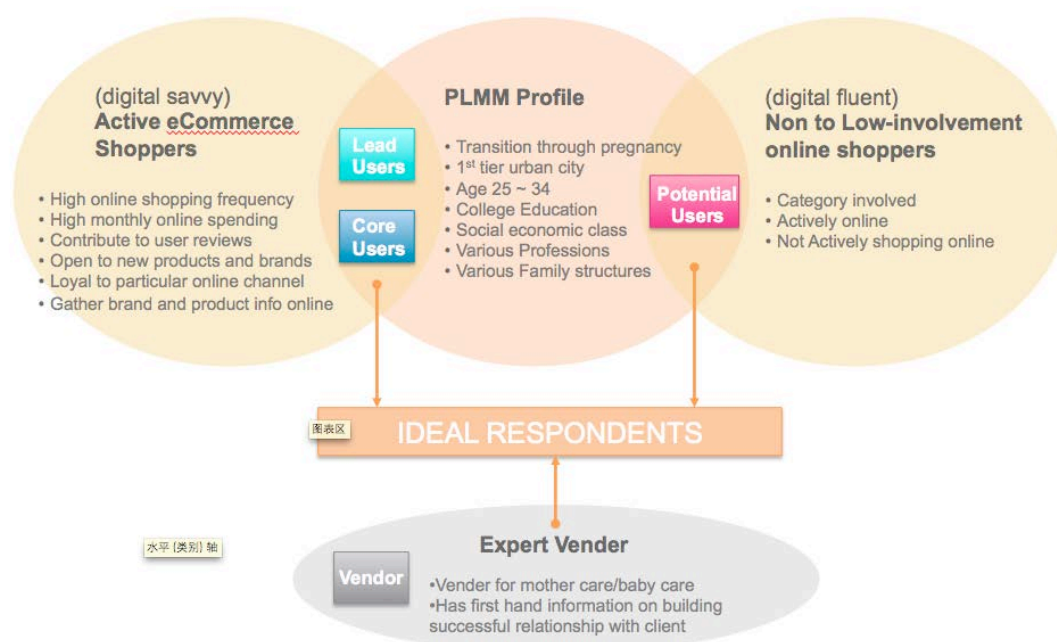

Fig 3.25 Conditions of ideal interviewees (Designed by the author)

As illustrated above, we classify the conditions to recruit the interviewees and divide the function segments and the ideal segments. First of all, we hope to investigate the active online shoppers which are the mothers meeting the conditions, because the specific users are the central users at present, the group we most want to attract. We will interview a leading user, and her words and actions will influence others' decision to buy. Second of all, we hope to find some mothers who are purchasing online but not very active, because they are our potential users. Only if we find their pains and obstacles for their not purchasing online, they may be turned into the group we need by eliminating the obstacles. Last but not the least, we hope to find an online shopping expert, to summarize and screen our interviews. We may solve some previous confusion and get the first-hand materials concerning the customer relationship cultivation.
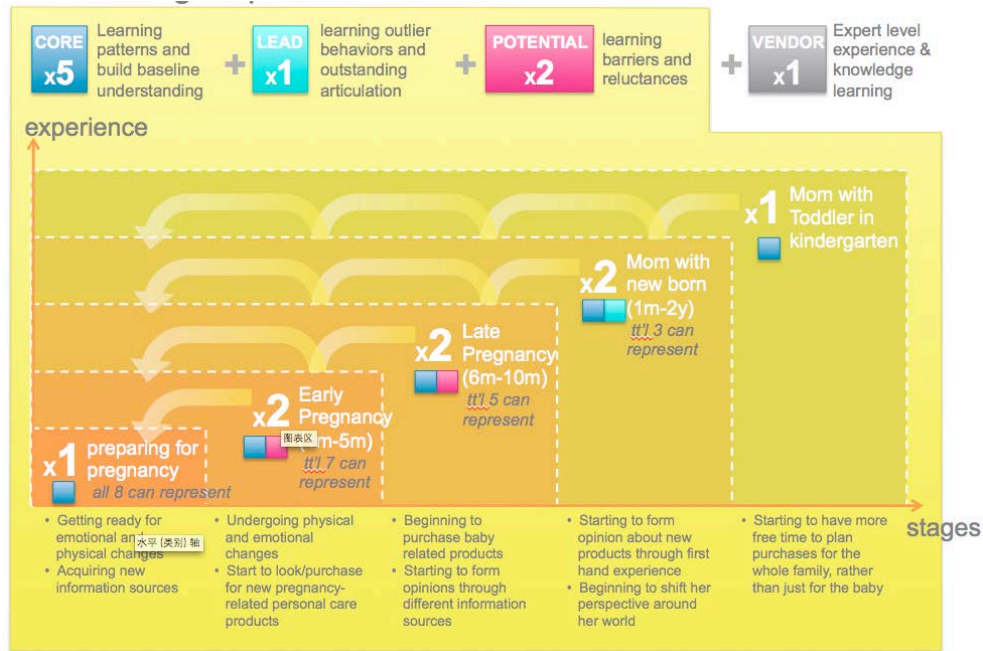
Fig 3.26 Distribution of ideal interviewees (Designed by the author)

As illuminated above, in terms of the pregnancy period distribution of the interviewees, we may divide it into five stages: preparation for pregnancy, early stage of pregnancy, late stage of pregnancy, new mother and mother with an older baby. The number in the five stages is 1, 2, 2, 2, 1 respectively. The reason why we distribute like this is that we hope to cover more time stages as possible, however, mothers in the late stages are more experienced, so only one mother is chosen for the preparation stage of pregnancy, while mothers with an older baby who are too long away from the pregnancy period have fading feelings, as a result, only one mother is chosen for that stage. Here, one investigation theory once proved that a focused investigation basically need 7 people, when 7 people all mention one element or topic, the element or topic is of vital importance; or when they do not mention some aspect, it would be the secondary issue to be solved.

3.4.3 Human-Centered Study Plan ---- Ask the Right Questions

The research methods under the guidance of the "human-centered" design thinking are observation and in-depth research. Why to adopt these two methods:

1. In-depth research is a tool to understand the users' deep psychological demand on particular aspect

Different from the questionnaire research and quantitative research, behind a great amount of data of the questionnaire research, the demands of the existing users are reflected and the questionnaire is used to understand the basic information,

reflecting the short-term or current demands, and the information or suggestions obtained are to be chosen by the users in a passive manner. The questionnaire research or the quantitative research is more applicable for the projects required to obtain the direct suggestions.

The in-depth research is not only to involve the opinions or suggestions of users for our targeted products but more to explore users' deep demands based on the issues to be solved, by the means of in-depth and comprehensive investigation of users. Taking the design of a refrigerator as an example, if an enterprise wishes to offer better experience, the in-depth research will start from the excellent product experience; but if the enterprise wishes to get bigger profits and increase the unit price, the research will start from how to improve the purchasing power for the users and why to buy more expensive products.

2. Five basic issues and fundamental structure of in-depth research are:

(1) Motivation or value, which is the most fundamental motivation to trigger the action, for example "In my life, there is nothing more important than the success of my child". The final key to the question is generally obtained by the progressive questions, for example the "5 whys" questions.

(2) Belief, which is commonly formed by the social, education and religious background and the political stand of the interviewee, for example "I think it should be done like this…." Reflects the decision made subconsciously.

(3) Limitation, which generally reflects the element that stops the user to arrange the daily life according to his/her own thought, and also reflects the gap between the real world and the self-limitation. For example, "I am not comfortable, so I cannot go to other supermarkets" VS "This supermarket only sells some products". The gap reflected by the limitation usually is the opportunity.

(4) Dissatisfaction, which is the point to most directly find and locate the potential demand, for example, "I cannot make a phone call in the elevator"

(5) Desire, which reflects the user's long-term demand, for example "I want to buy drinks at any corner of the airport" reflects a description of the user for the ideal experience status, and new product features can be extracted from the ideal status.

However, we cannot build all the analysis on what the users tell us, because what they say may only reflect a part of their stories, and what they do plus what they say will give us a more vivid picture of them.

3. The observation may allow the designers to have a better view of the daily behaviors of the consumers. When you are at a loss about what you are looking for or the study direction, you have to seize everything supposed to be seized, which may be divided into five catalogues:

(1) Participant, who participate in the specific activity and what result will be caused if different people participate?

(2) Event, what event triggers the specific action, or the application of some product? What model is the bridge to link the psychology and the specific event?

(3) Time, what particular time will trigger the particular time?

(4) Environment, where do the specific interaction and action occur?

(5) Article, what products are involved in the process?

In general, these two methods will trigger a new round of questions which may be deviant from the direction set up by the initial assumption or question. However, such a research is effective and necessary, and carried out surrounding the theme of "human". It vividly understands her behaviors and psychology, ask the right questions and finally builds a relevant model or concept based on what have obtained.

4. Research theme and content:

Topics	Womanhood	Behaviors in pregnancy journey	Products, brands, retails	Digital life, digital shopping
Composition	15%	30%	25%	30%
Values/ Aspirations	"How do I see myself? What's my inner code? How do I behave to fulfill expectations from others?	"Performance vs. Indulgence? How does the change of lifestyle affect my emotion and my family, work, and social life?"	"How do products facilitate my pregnancy journey? What is the reason for my affinity towards some things?"	"What's the role of internet in my life? What is the purchase motivation of online shopping? What is valuable to me?"
Behaviors/ Attitudes	ex: Change of dynamics of her family, work, social life	ex: Change of daily routine compare to her pre-pregnancy period	ex: Awareness and adoption of brands and products, choice of retails	ex: Online activities, tipping point between activities and shopping, path to purchase
Tasks/ Activities	Image sort (example)	Conversation and observation about her "world"	Probe on products and brands	Conversation and observation about her lifestyle on the screen

Fig 3.27 Research theme and content (Designed by the author)

(1) Self positioning and the feeling as a mother

The pursuit and self-positioning as a female

What has changed as a new mother

Self assessment as a mother

An idol in the mind that may inspire herself

  (2) Daily life

Daily life process

Habit repetition, including the threads and awards which produce the habit repetition

  (3) Pregnancy behavior process

  (4) Selection of products, brands and retail stores

Home visits, collect the used products

Reason to choose the product

Reason to choose the brand

Reason to choose the retail store

  (5) Offline shopping journey repetition, shopping threads and shopping awards

  (6) Online purchasing process

Online behavior diagram

Purchasing process

3.4.4 Research Process:

We made interviews with the foresaid mothers and experts in a week and each interview lasted 3 hours, including:

Fig 3.28 Concentration diagram of interviewees (Designed by the author)

1. Homework:

Before the discussion, we assigned homework for every interviewee, i.e., suppose that it is revealed that the baby shower gel she is using is of quality defect and she is forced to re-select a brand, please operate the whole purchasing process.

In the process, we used the SKYPE and shared the screen, we used to screen recorder to record the purchasing process, made the analysis before the home interview and found out the interested points to raise the questions.

Fig 3.29 Screenshot of homework (Screen printed by the author)

2. Home interview:

 (1) Self-introduction (5 min)

  - introduce yourself, and family, house, work and hobbies

Fig 3.30 Home interview (Taken by the author)

 (2) Self-positioning and the discussion as a female (10 min)

   -What event causes the biggest change in your life

   - Who are you, from the perspective of a colleague, family member

   - idol for a mother

   - photo selection

Fig 3.31 Exercise of photo selection (Taken by the author)

(3) Daily life (25min)

Daily life process

Considering every time point, why do you have to do this and what do you feel by doing so?

Whey do you think this is important to you

When you are bored, what would you do to kill the time

The favorite moment, the happiest moment and the moment you do not like most
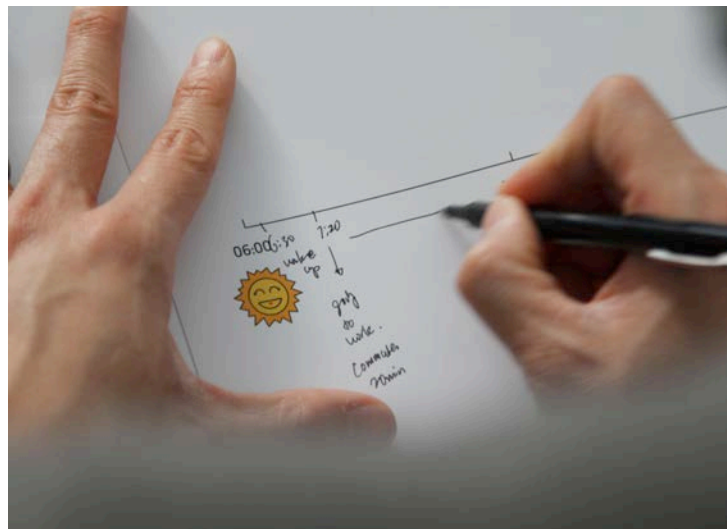

Fig 3.32 Drawing up of daily life process (Taken by the author)

(4) Pregnancy behavior analysis

Change, general situation and pain in different stages during the pregnancy

Significant turning point between different stages during the pregnancy

Fig 3.33 Drawing up of pregnancy process (Taken by the author)

(5) Home environment observation

The use information of main products and where are the products bought, the functional division of the home, the time distribution of each room. The emotional change in each region.

Fig 3.34 Home environment observation (Taken by the author)

(6) Products, brands and stores

Products:

What are the pain and happy points when using the products?

What attributes of what products will make you purchase repeatedly?

Is it bought individually or in group when purchasing?

Brands:

What element will decide that you purchase the brand, and what you hear and what you see will drive you to make the decision?

Will you try out multiple brands for the same product and how do you compare them?

What element may build the brand loyalty for you?

What drives you to discard the previous brand and change another if you want to change a brand?

Stores: online or offline?

What products are bought at the same time and why do you buy them together?

What products do you buy one piece for one time and why don't you buy more?

What attitude do you hold for different online shopping channels?

Fig 3.35 Product selection (Taken by the author)

(7) Online activities

The interviewee is asked to go to the computer and show some websites she visits in her daily life, when does she visit and why does she visit every day? What different behaviors will occur in different websites, and if there is a situation that propels an online shopping ultimately.

(8) Purchasing process

According to the pre-videotaped online shopping journey, raise some questions.

Besides, how do they buy diapers, domestic products, baby-oriented products and the body & hair products for themselves?

What propels them to make the online purchase?

How do they decide to choose the seller?

Why are they loyal to one or multiple sellers?

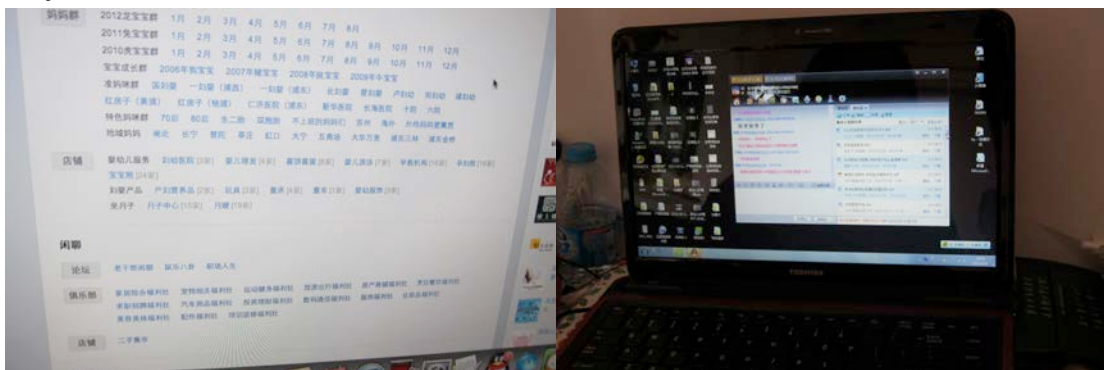Do they buy multiple products or a single product when placing an order and why?

Fig 3.36 Online activities and purchasing process (Taken by the author)

3.5 Debrief the Research

3.5.1 Collection and Summarization of Research Materials

Fig 3.37 Han Xiaolei's research result (Designed by the author)

Fig 3.38 Han Xiaolei's research result (Designed by the author)

Two forms are employed to extract the interview results:

1. Note taking. Record the key sentences during the interview and summarize the interview into an A3 paper, and may highlight the required content in the afterward analysis. The note must cover all the interview points and ensure there is no missing of key information.

2. Key photo extraction. Summarize all the photos taken during the interview and select the most representative 10 photos which must reflect some of the most important elements of the interviewee.

3.5.2 Summary of Key Findings on Mothers

After collecting the above research materials, we made collection and summarization of the initial materials by the means of analysis and synthesis and obtained the following conclusion:
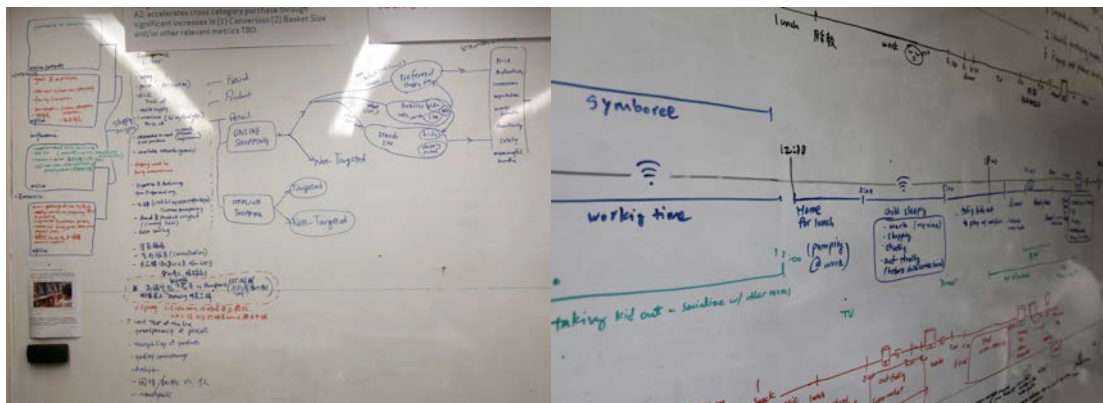
Fig 3.39 Analysis diagram (Taken by the author)

1. Major role conflict of young mothers

 (1) Conflict between social role and mother role

Economic growth brings about many new opportunities while the diversified social values also bring about new challenges apart from the opportunities. It can be said that there is never a time like now when such a great pressure on position, capability and value is inflicted on the women in a family "from the external to the internal" and many a requirement on knowledge, responsibility and quality is raised for the women in a family. Young women having a social role and a mother role are experiencing an unprecedented pressure in such as conflict. Some mothers are at a loss about what to do and cannot take care of the whole situation. How to arrange and coordinate the time and energy so as to deal with the contradiction between the social role and the mother role is an important demand.

(2) Conflict between self role and mother role

Young mothers grow up in an informationalized era, eager to embrace the new emerging things. As they are facing the impacts of the diversified thoughts and values, they have unique personalities and self-focused. When in the conflict of the "self" in the heart and the natural "maternity", the young mothers will be stuck in a dilemma. Moreover, many young mothers were born in 1980s and were the only child in their family and now they are raising their only child as they were raised. As most of them grew up in a doting family, their psychological condition is not mature yet and highly dependent on their parents, with a strong consciousness of self-centered. Once they walk into the marriage and have their child, contradictions would easily occur for they have not been prepared enough for the shift of their role. For example, a proportion of mothers here are still dependent on their parents to take care of their child.

(3) Conflict between traditional mother role and mother role in a new era

Along with the development of the era, some traditional beliefs such as "son preference" and "more sons, more blessed" have been abandoned by many young mothers, and mothers born in 1980s are boldly challenging the traditional ideas with a unique personality and a criticizing spirit.

However, traditions have a profound and lasting influence, and these young mothers are greatly influenced by their mothers with their childhood steeped in the traditional culture. As a result, we may also see the shadow of "a traditional mother" on them, such as the psychology of "having a great ambition for her child".

They try to be the mother in a new era, demonstrating their difference from the traditional image, yet failing to find a strong support. Compared with the traditional mothers, these young mothers mostly have a higher education background, and have more opportunities to face the impacts of more thoughts through various medias, leading to a more fashionable nurturing philosophy. New medias, sharing in the mother's circle and the knowledge from the older generation have become the nurturing recipe of the young mothers. They lay an emphasis on the theoretical knowledge, voluntarily join the trainings and are skilled at using the Internet to study and exchange the experience. "Posting" their child's photos and opening a nurturing blog have become the new fashion among the young mothers. However, in the course of becoming an "era mother", they are getting more puzzled when they are exposed to more choices. There are too many different views online while the theories are too different from the practices and it is also not that easy to learn others' experience. For

this reason, they have to listen to the experience passed on at times. Young mothers are faced by the insufficient reliable supports.

2. Mothers in the group

Group influence has a critical significance to the final decision and functions even before the demand occurs.

Affected by a minority of dishonest sellers, mothers are now deeply concerned by the Made-in-China products, especially the food. Once a collective group exposed, the power of collective wisdoms will play a major role and mothers will form varied small groups to communicate in different forms, for example, mothers having their delivery in the national maternal and children hospital will form a QQ group and start to discuss all kinds of questions since the first prenatal examination, and as the time goes by, a favorable discussion atmosphere will come into shape among them. Because they are sharing a same belief, that is to cultivate the next generation and be a good mother; and they are facing the same problems, that is how to find out the true and good products in the bad environment of baby products. A relationship as the battle companions or the classmates emerges. When they have their child, it then becomes the class reunion, although they have graduate from the learning course in the pregnancy, they are still willing to come back and share some information with the new mothers-to-be, or discuss about the problems when having the child.

They share a common consciousness, i.e., the confirmation by the mothers is the only standard for the quality inspection of products. They who have basically lost their confidence on the products sold in China are very sensitive to the rumors. They would not care whether the product has a 99% of good comments, but they will evade the product if there is only 1% of bad comments or rumors implying that it is not healthy. In their mind, the products popular in the group or the forum must be the ones which are experienced by many other mothers, and must be the products with good qualities and yet preferential prices.

Experience in the pregnancy period well links mothers together and between them forms a system, a spontaneous product recommendation and rating system, behind which is the trust built by their continual sharing of products and knowledge.

3. Net mothers

With the wide application of the Apple products, cross-platform operation has become very common. Cloud computing and cloud storage have it a common phenomenon that operations and materials are exchanged between different platforms.

For example, the client end of taobao on IPHONE and IPAD cannot make the direct payment, but have to receive a message before it completes the payment. For this reason, many mothers choose to select products with IPHONE or IPAD however complete the payment on PC.

In fact it brings about more possibilities and feasibilities to the online shopping topic with respect to the use place and time. The emerging of mobile online shopping makes the shopping journey much clearer and simpler, while multiple functions of mobile phones such as GPS and two-dimension code are the new ways utilized by many newly emerged services. For customers, the shopping experience has turned from the aimed search-featured shopping into the aimed experiencing-featured shopping and aimless incentive shopping.

As the express delivery, air transportation and sea transportation have slowly lowered their threshold, overseas purchase has gradually become the supplementary channel to the current online E-business platforms, especially for the luxuries, fashions and baby & mom products. The overseas purchase has showed incomparable benefits compared with other purchase approaches: 1. The price of overseas purchase is much lower than the domestic price for the same product; 2. The product of the same type purchased overseas is more assuring with a better quality. As a result, overseas purchase has become a new fashion among the mothers, and they try every means to get what they want overseas. They would entrust others to buy the products if they have relations overseas and if they do not, they can resort to taobao.

Another concentrated trend of online shopping is that mothers expect a combination of online and offline services. For example, even if the seller is in the same neighborhood and direct transaction is available, however, it is still required to place an order online and pick up the product by the customer; or even if it is an E-store, it is expected to have a physical store for experiencing and services. In terms of the demand for the combination of online and offline services, we may interpret that mothers demand a security feeling of a product. A physical store will greatly enhance their confidence for purchasing and the pre-purchasing experiencing is also regarded as important.

Currently, a large pain point for the mothers when purchasing online is that they could not find a service with high efficiency and little trouble to satisfy their purchasing demand. They have the purchasing desire for the children products as if it is their obligation, however, the purchase of consumable products and daily

necessities is a regular task for them, which is complex but directly related to the health of their family and baby. They wish there would be a service or system with no concern or little concern which may help her cut off the complex step yet win her a good outcome. They are not sensitive to the prices in this stage and price is not the first element to consider.

4. Time distribution of a mother

A day of a mother can be roughly divided into four periods, clarifying four different psychological statuses respectively:

(1) Time for baby:

For an occupational mother, it happens in the morning before she goes for work or in the evening before the baby goes to sleep; for a mother who has no job, the baby time is when the baby wakes in the morning, at the noon and in the evening before the baby goes to sleep.

During this period, mother will fully devote herself to taking care of the baby, feeding it, changing the diaper and coaxing it to sleep. She has no time to attend to other things and all she has in her eye is her baby. No shopping would occur in this period when her husband is not around in general, and she would not concern about her work.

(2) Time for work:

For mothers who really have to work, they have to go back to the tight work instantly after their maternity leave. Their work efficiency is low when they just leave the house, take the break at the noon and before they go back home, because all they can think of is the baby. Generally they will do some low-intensity work during this period, which is the time for frequent online shopping, mainly for the baby & mom products.

Among the distribution of morning and afternoon, they will commonly choose the morning with a high spirit to do the high-intensity work and when the afternoon comes, pregnant mothers will keep away from computers as they fear the high radiation and do some paper work. The period between the noon break and the time before going back home is also a high-occurrence period for online shopping.

(3) Time for family:

Family time refers to the time when the family gathers together after the father comes back. Due to the abruptly increased pressure with the birth of their baby, the mother will more take care of the baby and the father will take the role of feeding the

family. At ordinary times, as the father works outside, the gathering only occurs at the lunch and in the evening.

During this period, they will choose to go out for a walk with their husband and baby for window shopping; if it is a weekend, they will choose to drop round, go to the green land or the play field. It is also a very good time for mothers to exchange information with other mothers. As mothers will generally choose to go out or play, it is a low-occurrence period for online shopping.

(4) Time for herself:

Self time is when a mother can free herself and would occur after the baby goes to sleep or when the grandparents may take care of the baby.

During this period, mothers would relax and care for themselves: take a long shower, watch a movie or buy for themselves. Impulsive consumption occurs regularly in this period because it is the moment they are most relaxed and least guarded.

5. Timely provision of pregnancy information is expected

The pregnant woman becomes the queen in the family and even her mother comes to serve her

Most mothers will buy a great deal of cheap test paper online

Dietary habit and lifestyle change along with the physical change

Visit some educational forums to seek the folk prescriptions

The internet has become the channel to link with the outer world

Concern about the possible radiating articles and other poisonous and hazardous elements

Anxiety prevails in each stage of the pregnancy

Early stage of pregnancy (1-3 months): fear miscarriage

Middle stage of pregnancy (4-6 months): fear Downs test

Late stage of pregnancy (7-9 months): exhausted

Start to consider buying baby products from the middle stage of pregnancy

Consider the antenatal training materials when feeling the fetal movement and the life in her body

Although the website remains the same, mothers will change their purchasing demands according to their pregnancy stage.

3.5.3 Conclusion from Expert Interviews

1. It is much easier to attract a customer to visit your store than to persuade her to buy a product in your store. The methods to attract customers nowadays include the existing promotion platforms of taobao, such as taobao quick link, event and square. With the consumption as a fixed value, it is not way for sustainable development, because it is required to enhance the investment cost on advertising if the circulation is to be improved. How to retain the attracted customers and turn them into our loyal members is an approach to keep the sustainable development.

2. Products with low prices will attract people to make the purchase, however, how to build a bridge for them to buy other products is also a question to be considered.

3. A good page that can change a customer's attitude should keenly consider the demand time of the customer and provide the necessary product, avoiding the half-way exit.

4. The combination of online and offline service has become a new trend of online shopping. A stable customer source and favorable reputation in a metropolis or a region in the metropolis will offer a sound foundation for the E-store.

5. Users of C2C platforms are more seeking for affordable prices while users of Tmall seek for highly effective shopping experience. It will save them the decision-making time and they are not sensitive to the difference of 10-20 yuan.

3.6 Online Shopping Experience Model

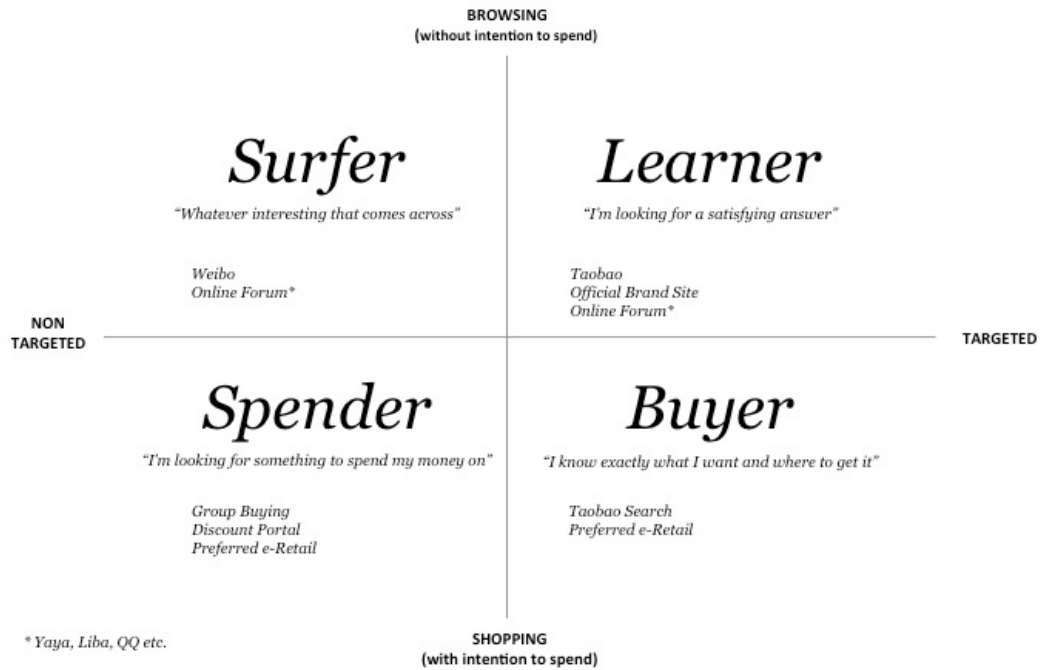**3.6.1 Four Different Types of Participator**

Fig 3.40 Four different online modes (Designed by the author)

The set-up of a good system must satisfy the initial goal and ultimate demand of different groups who enter the system. A system is not possibly set up for an individual goal and demand. For this reason, to obtain the different statuses of targeted groups will offer great help for the comprehensiveness and completeness of the system.

As illustrated, there are four modes, indicating the four goals and demands prior to access to the system. If the system can provide the foresaid interfaces to integrate with the four modes, it can be deemed as a complete system, which may meet all kinds of online demands of mothers.

The horizontal axis refers to the objective, indicating without an objective to with a clear objective from the left to the right and showing whether there is a clear and specific demand when surfing online. While the vertical axis shows a change between browsing and shopping from the top to the bottom. Browsing is to look around without purchasing anything at the first place while shopping is to look around aimed to purchase something ultimately.

When the coordinate divides the diagram into four segments, it defines the four modes the system has to accommodate.

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1. Browser. Browsers do not have a specific goal and have no intention to purchase anything, and they only want to turn on the computer and see what is going on. Along with the development of the social websites, the demand has increasingly become a common demand. Many mothers will first log into their micro-blogs when getting up in the morning, and go through the forums when the work is not busy. They are not sure what they would get by doing so.

2. Learner. Learners have no intention to purchase anything either, however, the browsing is the goal-oriented one. They know what they want to know, so they will go to their familiar websites. It is a random browsing but with the aid of the search engines until they find out the answers they need. Under such a circumstance, many online products cannot give them satisfactory answers in time, which becomes a pain point in their browsing. In recent years, more and more websites with the information provided by users have become the mainstream for the answer-seeking, such as baidu knows and iask. It has changed the approach to seek the answers on the broad Internet but the website users will help you to find the answers.

3. Impulsive consumer. Impulsive consumers have an intention to purchase but browse aimlessly. They purely want to satisfy their need to purchase and for this reason they will buy what is cheap and can attract their attention. Now, more and more websites can satisfy this kind of demand and can be divided into two types: 1. price preferential websites, such as group purchase. This kind of websites inspire the users' purchasing desire with the extremely low prices and discounts, propelling the final impulsive consumption; 2. Consumption sharing websites. This kind of websites attract more visits of netizens with the comments and shares of other netizens, with strong engagement and propelling the final impulsive consumption.

4. Planned consumer. Planned consumers know what they want to purchase and have formed or are used to forming a planned process. In the case that they already know what they need and how to make the purchase, the system should simplify the purchasing process in order to facilitate their task and free them from the planned consumption, offering them more time for leisure-featured browsing or aimless consumption.

The four modes mentioned above cover the goals and demands of mothers when surfing online and to control their expected set-up and purchasing process will bring them into an ideal status.

3.6.2 Online shopping journey

After analyzing the four different online modes, obtaining the respective process of each mode will be of great assistance for our re-designing. We have summarized and concluded based on the homework during the research and obtained the diagram as follows:
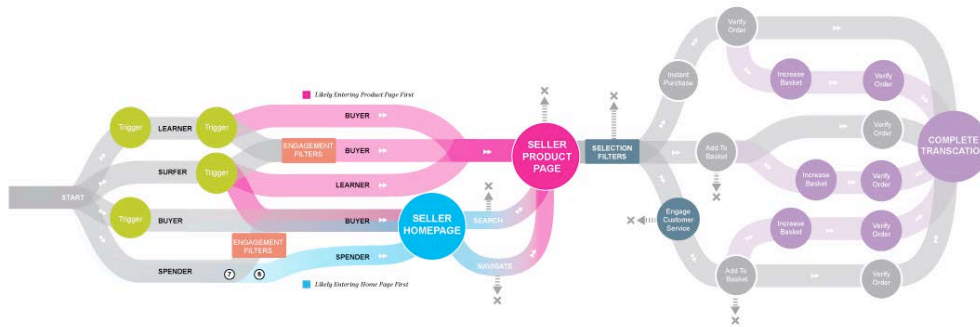

Fig 3.41 Online shopping journey (Designed by the author)

As illustrated, the four modes all start from turning on the electronic device, with four different attitudes toward the ongoing online shopping journey. After the first stage of selection and navigation, including some exiting points, there comes the product page or the homepage of a website when the shopping journey starts. When purchasing, different channels are formed and finally the transaction is completed.

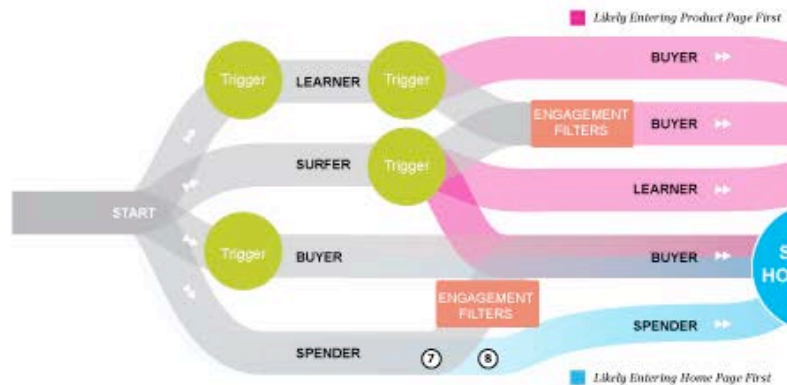Let us first look at the initial browsing status of the four modes:

Fig 3.42   Detailed online shopping journey (Designed by the author)

In this stage, when people turn on the electronic device, learners and planned consumers have already been triggered the desire to purchase or learn, with a clear objective. For these consumers, many websites know their landing points and are competing the advertising space on the landing points. By contrast, browsers and impulsive consumers are just used to turning on the device to browse, so many

websites introduce many activities to inspire the aimless consumers, however, due to the strong mobility of websites, they are moving too fast and they are difficult to capture consumers' intention if without a browsing path or landing point with high loyalty. As a result, they make many attractive points on the framework, either a great deal of information or preferential prices. After plentiful searching and comparing, it passes the orange access filter, which includes the price, sales, seller's reputation and other elements, and the sequence of these elements by importance is determined by the individual. Through the filter, they are attracted to the website, with two landing points, the first is the product page and the second is the homepage.
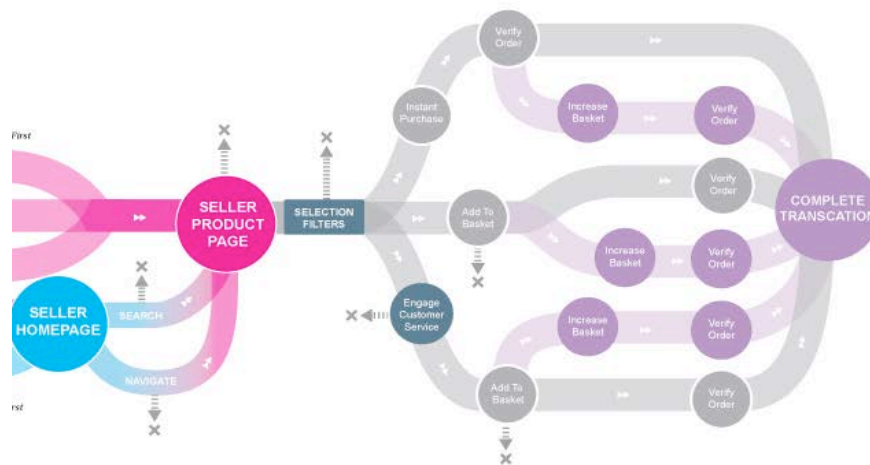

Fig 3.43 Detailed online shopping journey (Designed by the author)

Consumers reaching the produce page have already made the first round of screening and the next step is to determine whether to make the purchase. Consumers entering the homepage will select their favorite products by searching and the navigation to enter the product page. After the consumer enters the product page, there will occur many exiting points (X in the diagram), which are caused by the failure to satisfy a certain demand or expectation. There is a selection filter from entering the product page to determining to purchase, which is an important approach to determine the conversion (). The filter generally includes the details of the product, such as detailed photos, usage and composition. The determining process after the user enters the product page is supplemented by the careful reading of the product introduction and specifications. Through the filter, the consumers will directly make the purchase, add to the shopping cart or go on consulting with the customer service. During the process, sellers will try every effort to raise the target, i.e., the per customer transaction, that is the total value purchased in the store. The target is the product of purchasing times multiplied by the average value of each purchase. It

should first raise the purchase amount per user and for this end, the methods could be adopted including recommendation of similar products, combined prices and promotion. Users will continue to see whether there are any relevant activities after determining whether to buy the product. Timely recommendation will of great assistance to improve the per customer transaction. The visiting times depend on the service, after-sale service and due reminding.

Once the order is confirmed, the transaction is completed.

3.6.3 Online Shopping Experience Principal

Fig 3.44 Online shopping experience models (Designed by the author)

The above are five online shopping experience models obtained from the user research.

(1) Guide me: know what the user is doing and lead & help her on the way. Save the time to make the purchasing decision and spend the time on the important link.

(2) Motivate me. Offer attractive stories and eye-catching product combinations to win the return customers. Send proper information at the right time, and the information shall not be the direct details of the product but must inspire or remind her desire to purchase.

(3) Reassure me. Ensure the product source is authentic and reliable and offer an completely faithful environment for mothers to make their decision.

(4) Simplify for me. Simplify all unnecessary things and things in doubt, and make sure mothers may concentrate and save time & energy to complete the operation.

(5) Elevate me. Recommend the most popular products and products with a high international level and promote the life quality when ensuring the product quality.

Chapter IV Design Practice Based on the Research

4.1 Implementation Thinking of Design Practice

Based on the results of the research and analysis above, the online shopping experience design of urban young mothers can be mainly dividedly into two parts.

First, according to the research, the new generation urban mothers have formed the new themes and concepts of urban young mothers in terms of motherhood, the definition of the new mothers and the multiple roles played in the daily life, their wish to be a successful mother, wife and professional woman. The steps in this part are: generate several signal-directional and direct brand commitments and concepts for concentrated group tests. Sort the brand commitments and concepts based on the tests, propose the elements and select the superior and eliminate the interior, finding out the brand commitment that most satisfies the urban young mothers. The brand commitment will function as the spiritual guidance in the whole design, and the style of graphic design and the sentiments in the service design shall conform to it.

Second, according to the pregnancy habits, daily use habits, pain points and ideal statuses reflected in the online shopping of mothers, the online experience models were established, including the visit attracting model, conversion mode and the interactive model, which were used as the guidance to generate the concept prototypes to be tested in the focus group. In the focus group discussion, these models were mainly tested to see whether they were reasonable and the important and the concept outputs were accepted by the users in their use and subconsciousness. And in the end the detailed design was made according tot eh prototypes.
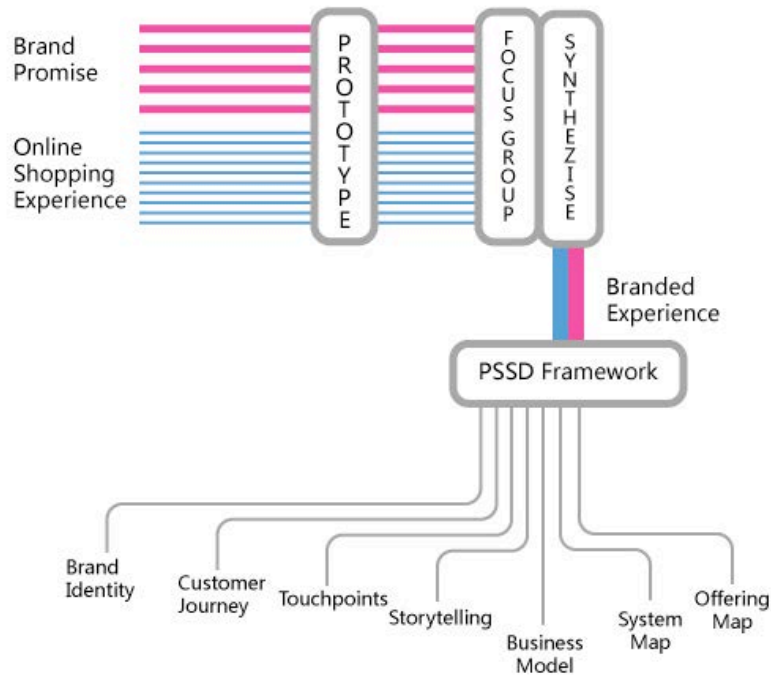
Fig 4.1 Implementation thinking of design practice (Designed by the author)

4.2 The First Concept Output of Brand narratives of Urban Young Mothers

The output measures of a new theme is to form a demand of mothers based on the previous research results and after the extraction and synthesis, and convert into the elements that we may satisfy, and ultimately produce some key words and critical emotional tones, forming separate sentences after categorization and combination.

4.2.1 Concept 1: Journey with You, Tears or Smile

Demand extraction: It is a journey full of tears and smiles from being pregnant to being a mother. In every stage, I am facing different challenges and also experiencing new satisfaction.

Corresponding point: "PLMM" knows your pilgrim physically and psychologically, offering you the warm and intimate assistance and accompanying you to harvest the happiness.

Concept output: Journey with You, Tears or Smile

Fig 4.2 Concept 1 mood version (Captured online and put together by the author)

4.2.2 Concept 2: Fully Enjoy Every Magical First

Demand extraction: I want to get prepared for my baby and fully enjoy every magical first.

Corresponding point: "PLMM" consider in your shoes the demands in different aspects of you and your baby, and enrich your experience at ease and joy while deepening the happy senses of you and your baby.

Concept output: Fully Enjoy Every Magical First

Fig 4.3 Concept 2 mood version (Captured online and put together by the author)

4.2.3 Concept 3: Nurturing Family, Growing Joy

Demand extraction: Our family gathers together because of the birth of our baby, and I will keep every member in the family safe and sound with all my strength.

Corresponding point: "PLMM" places the baby's safety in the first place and as your strong assistant, will lead a healthy lifestyle for your family member, helping your family grow healthily.

Concept output: Nurturing Family, Growing Joy

Fig 4.4 Concept 3 mood version (Captured online and put together by the author)

4.2.4 Concept 4: A Better You, in a New Exciting Chapter

Demand extraction: Being a mother opens a new chapter in my life and I want to be a happy me while being a good mother.

Corresponding point: "PLMM" appeals to the demands of different roles in your life and supports you to keep the balance with more confidence, shining your brilliance in every role.

Concept output: A Better You, in a New Exciting Chapter

Fig 4.5 Concept 4 mood version (Captured online and put together by the author)

4.2.5 Concept 5: Acing Motherhood Together

Demand extraction: There are many complex situations to concern for it's my first time to get pregnant and be a mother. I do not want risk any accidents and I need trustable opinions and guidance.

Corresponding point: "PLMM" is a trustable sister in your journey and will offer you the intimate mother experience in each stage and support you to make the right decision.

Concept output: Acing Motherhood Together

Fig 4.6 Concept 5 mood version (Captured online and put together by the author)

4.3 The First Concept Output in Terms of Online Shopping Experience of Urban Young Mothers

The concept of online shopping experience is derived from the brainstorm based on the results of the analyses of online shopping access modes, online shopping journeyes and online shopping experience models. In this stage, every concept will be presented by the means of a website wireframe or a simple model, and be used in the focus group. It will be divided into concept introduction, user basis, business basis, short-term vision, long-term vision and prototype introduction.

4.3.1 Build A Trust-worthy Online Shopping System

Concept introduction: To offer her a feeling of being in an environment comprised of many mothers when shopping and that those mothers will help her make the choice.

User basis: When they are surrounded by an environment of mothers, they will feel safe and relaxed. Under this circumstance, they will accept the recommendations, buy more products, spend more time and ultimately come back regularly.

Business basis: Building a mutual trust is the first step to build a long-term relationship.

Short-term vision:

1. Re-define the targeted users as the mothers with knowledge and willing to share, inspire them to share their experience and cultivate them into knowledge-based mothers.

2.Change the language and tone for the website to be reformed to adjust to mothers' environment, for example, staff in taobao will call customers "honey" and now we use "XX mom" instead.

3. Change the recommended production combinations for mothers

Long-term vision: Encourage mothers to create their own pregnancy diary and record their purchasing agenda related to their pregnancy, and encourage them to upload their purchasing experience and product comments. Change the original customer service or official practical service into a real platform for mothers to communicate, which would enable mothers to share and serve each other.
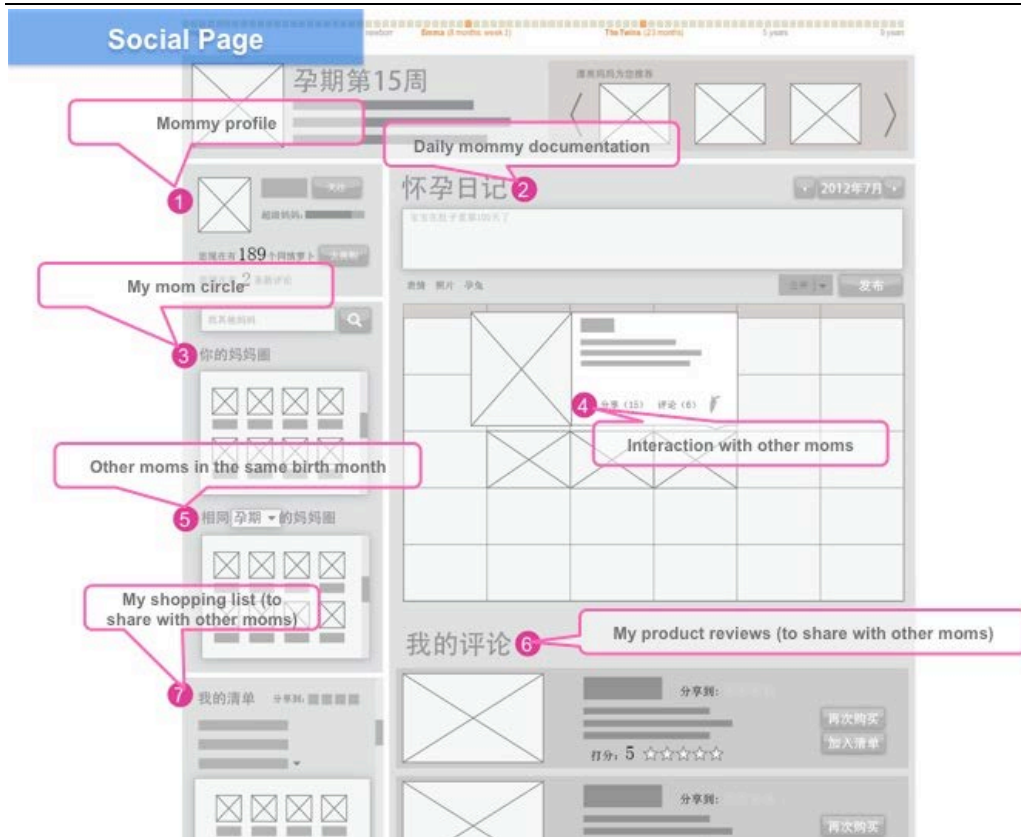
Prototype introduction:

Fig 4.7 Build a trustable prototype of shopping environment (Designed by the author)

Personal information of mothers: Trace every mother's personal information and it is shown as the personal data in the website. Tracing the personal information of mothers such as the expected delivery date, region and delivery hospital will facilitate the system to recommend the related products in a timely manner and make the interaction with other mothers more effective.

Pregnancy diary of mothers: Mothers wish there would be a platform to record their life and wish to share their life in the pregnancy with other mothers, to brave the bitterness and enjoy the sweetness arising from the special days of ten months. In the pregnancy diary, different from other diaries, there is some convenient pre-set choices, for example, "morning sickness" is a bitterness during the pregnancy period, however, in this diary, it is replaced by a lively animal "pregnant bunny", which may vividly give a strong engagement when using it. When the "pregnant bunny" appears, others may feed it with sympathy radishes as a tool to console her anxiety. The inter-relation between the system and the products is that a specific section in the system is aimed to exchange the points in this section, and the "sympathy radishes" can be used to exchange products. As such, mothers may be sympathized emotionally although suffered physically.

Mother circle: Based on the previous research, we may get the conclusion that the relation between mothers resembles the classmates: they get pregnant together, give birth together and raise their child together. It is like that they are going to a special school of life, competing with each other yet caring each other. The mother circle resembles the self-built classmate circle, where mothers may find their favorite partner as her classmate to pass through the period. Compared with the reality, these mothers are their trusted information origins and they are more willing to get the knowledge and share the knowledge, thus forming a recommendation-based discussion forum.

Paired mother circle: The paired mother circle is to ensure mothers would get more precise information based on the similar pregnancy period, similar geological location or the same hospital to offer the friend recommendation, as the more precise the circle is, the more precise the information will be.

Approaches to communicate with other mothers: In this page, there are many interactive approaches with other mothers: console each other in the pregnancy diary, exchange the product information in the list, discuss in the discussion forum and check each other's information in the mother circle. The interaction is aimed to create a discussion which may engage the brands.

Product list: As mentioned in the product page, the product list is a favorite for mothers to record what they have purchased or what they like. The favorite is of great significance to mothers which is that they wish to see others' favorites, because it would reduce their workload, making it easier to find the proper products and also the products they may find are basically examined and are safe for use. As a result, sharing the product list is an important carrier in the interaction between mothers.

Our product comment: Product comments are common in the existing online shopping platforms, however, different from the comments seen in the exiting online platforms, mothers start to make the purchase from observing the comments, as a result, the comments may almost replace the official information of the products. Under this circumstance, it will be of huge value if the product comments are utilized in a correct and effective way.

4.3.2 Let Mothers help Each Other and Mutually Recommend Products

Concept introduction: Whoever knows a mother is herself, and let mothers recommend products to each other.

User basis: The current QQ groups and the forums are where mothers recommend and assess the products. Mothers only want to purchase the products which are assessed or investigated, however, the judgment during the investigation really costs them a lot of time.

Business basis: Combine the shopping websites with the cutting-edge contents, that is to increase the visits and collect the visit-attracting commissions from other shopping websites of the similar type as the upper stream website of the vertical industry.

Short-term vision: To create a platform enabling mothers to recommend products to each other and ensure the platform will release product comments and recommendations in a fair and orderly manner.

Long-term vision: To form an entry to the product comment, and allow mothers to shape a shopping habit starting from viewing product comments.

4.3.3 Build A Bridge Between Online and Offline Services, Expand the Multiple Touch points of the System

Concept introduction: Convert the offline users into online users

User basis: Offline products have already enjoyed a huge market and have a user base, who are also willing to purchase online, yet lacking a bridge.

Business basis: The system may establish a enough user base offline and combine the online and offline services in a right time to transfer a sufficient number of users.

Long-term vision: To make every product become the bridge linking the online and offline services, it may be realized by mark a QR code on the product and consumers may scan the QR code to gain the points which may be used to exchange products online. Or it may scan the QR code offline and add to the purchase list.

4.3.4 Free Switch Between Several Roles

In the previous discussion, we have mentioned that the new generation mothers are often in conflict due to their frequent switch between the family, self and social roles.

Concept introduction: Help her better manage the switch between different roles

User basis: When she is purchasing for her baby, she may probably forget to buy some necessities for the family.

Business basis: The system will offer her a feeling that she may take care of her baby and family, and also may make herself refreshed, as a manager and provider of her family. Thus, it will possibly make her exceed the original expectation and purchase more for taking care of three parties.

Short-term vision: When describing the product, the structure of "you", "family" and "baby" shall be employed, and if failed to take care of all parties, the product combination form shall be used to remind her.

Long-term vision: Re-position the product on "love yourself", "love your baby" and "love your family", and it is more appropriate to use this approach to remind her roles than a forced recommendation.

Prototype introduction:

Fig 4.8 Prototype of "Free switch between different roles" (Designed by the author)

As illustrated, we create three ways as love yourself, love your baby and love your family according to different roles, including the categories in the navigation bar. This is based on the division of roles in her mind and determined by the different purchasing habits. This is just like a small reminder, which will remind her to take care of her other roles when purchasing one kind of products and not to forget the other two kinds.

4.3.5 Provide A Window-Shopping Experience

Concept introduction: To create a complete experience of window shopping

User basis: When completing their purchasing tasks on the website, they will possibly continue to browse the website. However, the existing online shopping experience is an experience more featured by the targeted consumption, which may not satisfy users' "check-and-browse" demand.

Business basis: The system may establish the mutual understanding and long-term relationship with the users through the window shopping experience, creating a symbolic consumption experience.

Short-term vision: There should be a dedicated page with fewer words and more photos as possible to link the website and the consumers.

Long-term vision: To create a symbolic interactive experience and make the users steeped in the window shopping experience where an eyeful of premium products are presented.

Prototype introduction:
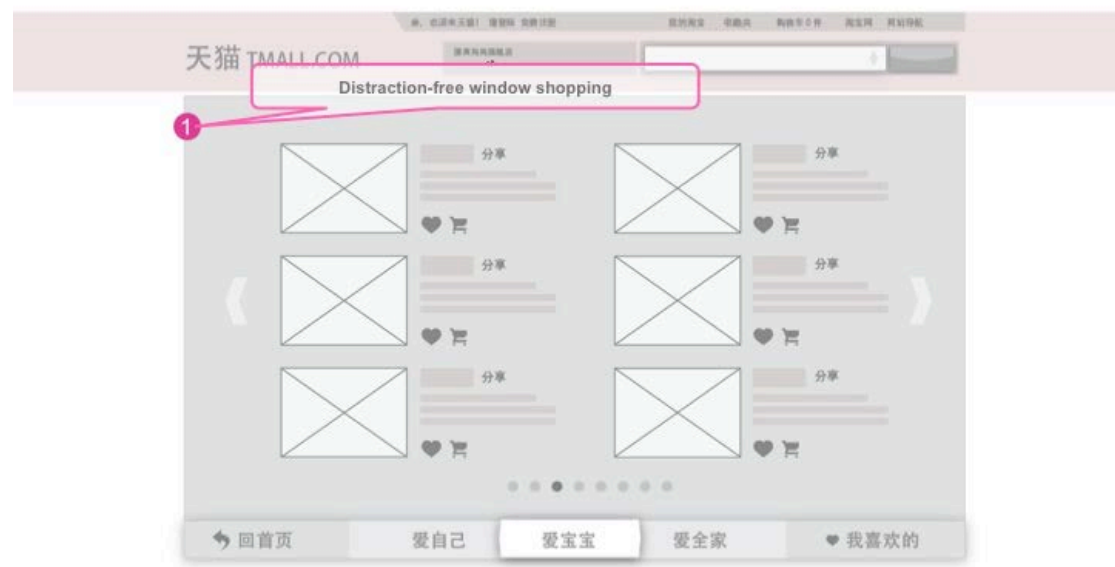
Fig 4.9 Prototype of "Window shopping experience" (Designed by the author)

As illustrated, the window shopping is a very neat and clean page, and there are only a few fundamental categories and functional buttons. It is dependent on the photos and product introduction to create a feeling of window shopping.

And the next step is to further simplify the page and let the user steep in the shopping environment without any interference.

4.3.6 Reduce the Decision-Making Cost for Her

Concept introduction: Minimize the interference during her decision-making

User basis: In the mode of planned consumption, the only thing she wants to do is find the thing she wants and finish the task as soon as possible. However, too many irrelevant elements online will interfere her decision somewhat and too many steps will consume her too much time, increasing her purchasing cost.

Business basis: While minimizing her purchasing process, we are also reducing the exist risk of her. When helping her make the decision, we also create a favorable opportunity to retain her and make more purchases.

Short-term vision: 1. One-touch to make the order. As the most purchased articles are consumables and recording her frequent purchases will make it easier for her to complete the daily task. 2. Offering different tools when choosing and judging the products will help her to make the choice and driving her to make the decision as soon as possible.

Long-term vision: 1. Any product in all pages can be directly added to the shopping cart without any need to enter the product page; 2. In the product page, the button "add to the shopping cart" is always visible and it is unnecessary for her to return to the top and possible to add to the cart directly; 3. Provide every kind of small tools which facilitate the decision-making in other pages, making the task much easier.

Prototype introduction:
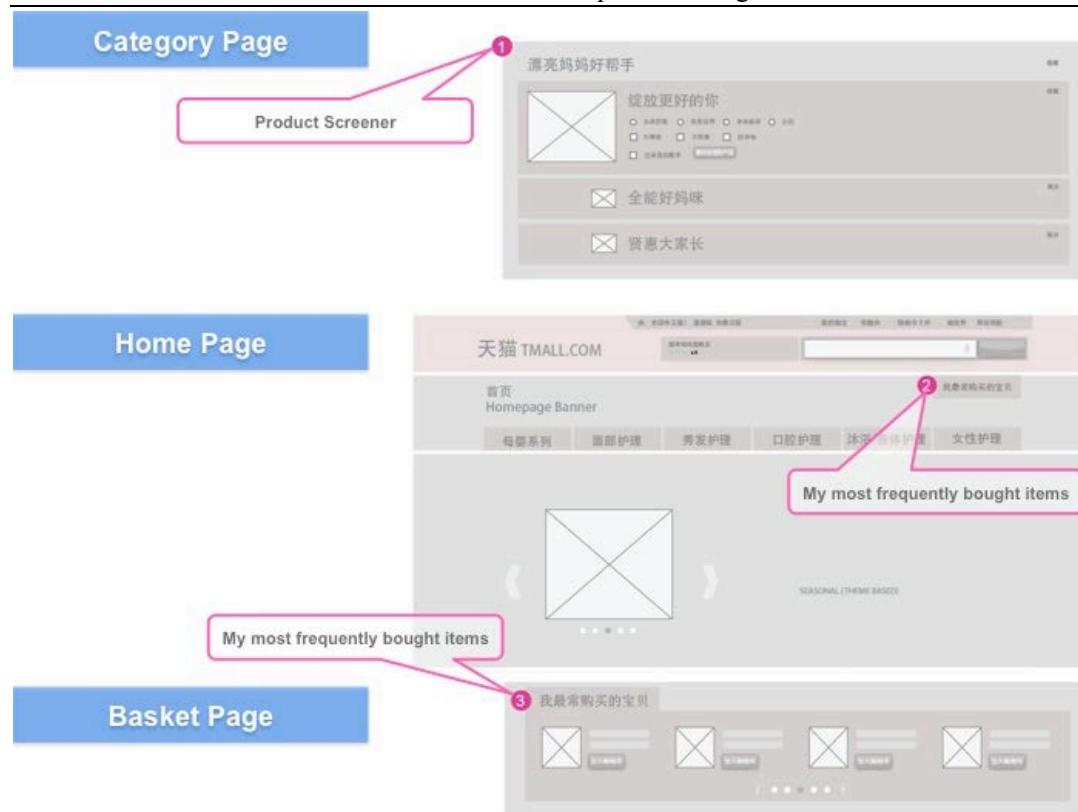
Fig 4.10 Prototype of "Reduce the decision-making cost" (Designed by the author)

In the homepage, the product filter is used to find the product meeting her requirement in the shortest time instead of looking through all the products or finding the exact product according to the navigation one step by one step starting from a certain navigation.

The most frequently purchased product is the so-called "one-touch" order-making, a kind of reminder which allows to see the frequently purchased necessities and consumables without choosing from the various products by the means of the navigation.

On the shopping cart page, the most frequently purchased product is a reminder after the payment process, and the last reminder in the whole process will offer an assuring feeling for the consumers.
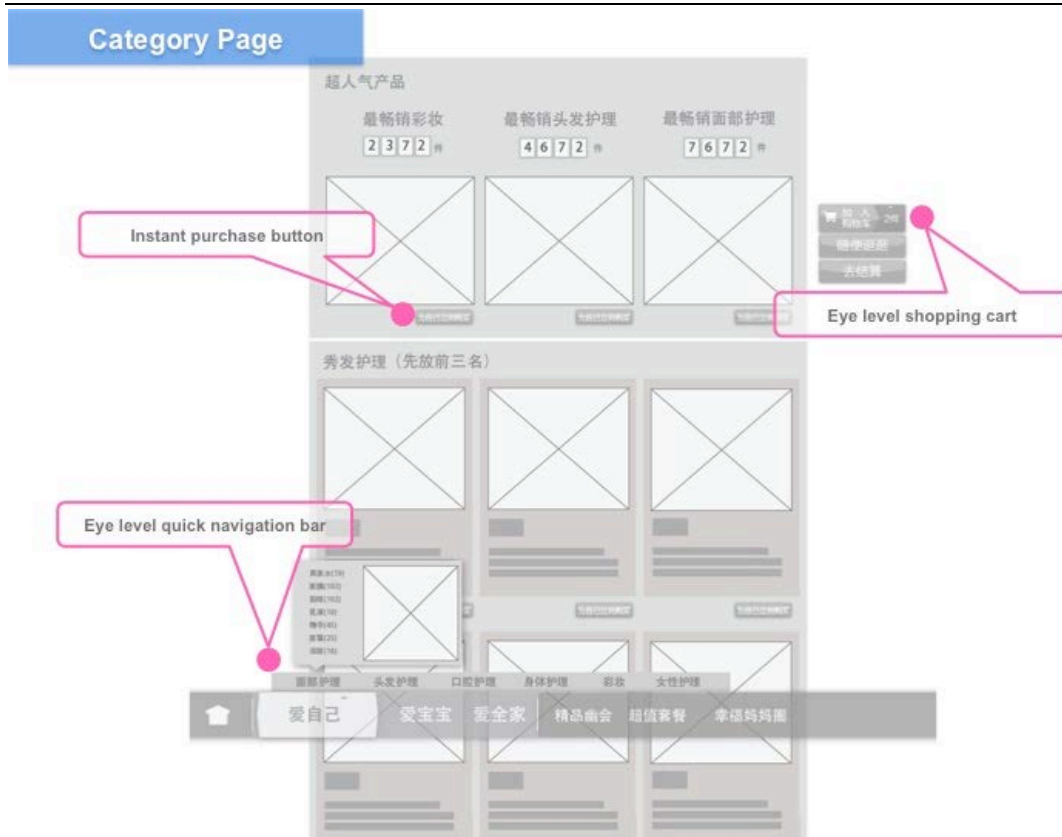
Fig 4.11 Prototype of "Reduce the decision-making cost" (Designed by the author)

Under the category page, there is a button "add to the shopping cart" in every product, which may skip the product page, directly add to the shopping cart and leave the purchasing spot. The shopping cart in the user's sight will facilitate her to add the favorite products into the cart in any page. While the visible navigation bar will make it easy to navigate and when the consumers choose one category, it have helped her to make several judgments, finding the most appropriate products to her mind.

4.4 Focus Group Test

It is a practical test targeted at the brand narratives and service visions. The focus group test is employed.

4.4.1 Concept of Focus Group Test

It is also called the group discussion which is to apply the form of small discussions, a seasoned host will organize the discussion with the representative consumer or client in the group in a random and natural form, with an aim to obtain an in-depth understanding of the relevant issues.

4.4.2 Implementation Methods

1. Prepare the focus group interview

(1) Environment: A focus group test room is generally equipped, including major equipment such as microphone, one-way mirror, room temperature control and camera. For the researchors, the focus group discussion is an ideal way to understand the consumers' motivation. As Continuum has equipped the dedicated focus group interview room with the one-way mirror, the test is carried out there.

Fig 4.12 Focus group discussion site (Taken by the author)

(2) Select the interviewees

Repeated or "occupational" interviewees should be avoided in the selection. One group generally involves 8 interviewees. Please note that there is no ideal participating number and the number shall depend on the group type. There are more interviewees necessary for the experience group than the analysis group. The motivations of interviewees to participate in the focus group are: pay, interest in the topic, have free time, interesting focus group, abundant knowledge and curiosity about the product and an opportunity it offers for expression.

In this investigation, I initiated an event on the weibo, listing the pay, topic and time, and there were 12 people to apply for the focus group test. We divided them into 2 groups based on their pregnancy period, i.e., the pregnant group and the group with children, each group had 3 people.

In the pregnant group, they were mothers who were pregnant for 1 month, for 4 months and for 8 months, covering the early, middle and late stage of pregnancy. While in the group with children, they were mothers whose child was 4 months old, 1

year old and 2 years old, representing the different 3 stages for the mothers' behaviors.

In the group discussion, we had 3 mothers' participation, that was to say there were 6 in a discussion group, enjoying a warm atmosphere.

2. Select the host

The ownership of qualified interviewees and an excellent host is the key element for the successful focus group interview. The requirements for the host are: 1. The host must be able to organize a group properly. 2. The host must have good business skills, to facilitate the effective interaction with the employees of the entrusted party. It is not only the training for the host and the skills equipped that matter but also the complete preparation of the entrusted party's employees before the observation group.

In this study, we three played the role of the host in turn and helped to observe the details arising in the discussion and raise the questions in time.

Fig 4.13 The host organize the discussion (Taken by the author)

3. Compile the discussion guideline

Group collaboration is employed when compiling the discussion guideline. The guideline shall ensure the highlighted topics to be discussed according to a certain sequence. The guideline is a topic summary involved in the group discussion. It generally includes three stages: first, establish a friendly relationship, explain the rules and raise the individual to be discussed. The second stage is to trigger the in-depth discussion by the host. The third stage is to summarize the important conclusions and measure the limits of trust and commitment.

The guideline for the focus group discussion is as follows:

(1) Brand core value testing

a. User insight testing

Conduct the test for the users based on the user insight focuses raised in the previous research to see whether it is a common demand.

For example, the Concept 4: Being a mother opens a new exciting chapter in my life. I want to be a happy me while being a good mother.

b. Brand story testing

By the interpretation and conversion of the users' demands, it is required to form a brand story to test the users to see whether the story is able to resonate.

Foe example, the Concept 4: "PLMM" appeals to the demands of different roles in your life and supports you to keep the balance with more confidence, shining your brilliance in every role.

c. Core value summary

By the insight into the users' demands and the output of the brand stories, a summarized brand core value shall be generated. The core value shall be used to test the users to see whether they may understand the concept from the nature the core value brings.

For example, the Concept 4: A better you, in the new exciting chapter.

From the above test, we may get the outcome that mothers are not willing to give up her own identity, by contrast, they want to return to themselves, taking care of their baby while taking care of themselves. In the meantime, balancing the different roles is an ideal status they are pursuing.

(2) User experience test

Considering the above output of the concept of a shopping service system, the process chart and written prototype shall be made for the written simulation and role playing. The feasibility test shall be carried out for the whole service system process and the specific nodes.

Service system process:

a. Attracting modes

Several different attracting modes were tested, such as low prices, safety assuring and choice services, and mothers unanimously agreed that the shopping environment ensuring the safety is the first element attracting them to enter the site. The site may

be more expensive in price than other sites, but if it may ensure the safety and has a good turnover, they will ultimately choose the site.

b. Browsing modes

The browsing modes were tested to see what experience would attract them to sign in every day and brose the information. It turned out that mothers like the recording-featured websites where they may record many precious memories, one is to record the photos and the other is to record the shopping information. The latter one will make mothers to view the shopping list and exchange the experience if the record is available for social interaction, and if there are some experts present to recommend the seasonal or suitable shopping list for the babies, they will frequently sign in to view it.

Fig 4.14 Prototype test (Designed by the author)

c. Study modes

Whether the official information or the information offered the users are acceptable by the mothers and which information is more important were tested. Mother do not like the official information, because at present the official information is not accurate in the domestic market and the categories are not reasonable and well summarized. Mothers prefer to gather as a group to discuss and find the final conclusion. However, the shopping-related topics discussed by the mothers are mainly focused on the products. It seems not a difficult thing in other countries to give the

baby the proper products in the right time, however, for Chinese mothers, they think it is their biggest challenge and the learning difficulty.

d. Conversion points

Information that would inspire mothers to make the purchase was tested. The written models were employed and almost 30 product information was simulated, including the official information, place of origin, recommended by experts, recommended by stars, recommended by mothers and product videos. In the end, almost all mothers topped the comments and recommendations of other mothers, and said that their purchased were mostly inspired by some words in the comments.

Fig 4.15 Prototype test (Taken by the author)

e. Multiple online/offline touch points

The feasibility test of multiple touch points was tested, including the mobile phone interface, counter interface, web page interface, 2-dimensional code of stores, consumption card and offline activities. As mothers often use mobile phone and web page interface, the combination is their first choice. In terms of the consumption cards, they would have a try if there is a good discount. For mothers, the combination of online and offline services is of vital importance. As for other activities, they expect there would be a platform to help them organize the offline activities where they are allowed to communicate.

f. Express delivery

Proposals were raised to be discussed. For example, the convenience store to pick up the goods and encourage mothers to make the regional transactions. As the mutual transactions between mothers are highly complex during the implementation, and they do not really trust other mothers' professional degree, they unanimously

agree that the seller shall be professional. With respect to the express delivery, they prefer the pick-up service by the convenience store which shall be expanded.

g. After-sale modes

Mothers were asked to simulate the after-service as the discussion form. If they were the after-service, in what way they want to solve the problem. The discussion shows that mothers expect a sincere after-sale mode. Or their one bad comment is fatal for the sellers.

i. Product list

The test aimed at the product list or the logic of the combined products was made. In mothers' opinion, one great feature of official combined products is basically the star product kidnapped by the most undesired product. If there is one most undesired product in the combination, they will not consider unless the price is truly reasonable. But if the list is made by the mothers, they will understand the logic in it, as a result, the list will not only include the things they need most and also has an educational significance. They may learn the nurturing knowledge when making the purchase. This is the product combination they are eager to see.

Fig 4.16 Prototype test (Designed by the author)

j. Interactive experience and visual elements

Users were tested on the visual elements. The mood version was selected and the pages of the same style or the product photos were put on one paper. The study shows that mothers prefer the simple and clean interactive experience and visual experience

that would not interfere the shopping journey. Most users choose this simple and practical visual style.

Fig 4.17 Visual element test (Put together by the author)

4.5 Finalize the idea

From the formation of the above concepts and the second user insight of the focus group testing, the clear concept integrated with the user's potential psychological demand and the practical demand is formed. The brand narrative reflects the user's potential psychological demand while the online experience concept reflects the practical demand.

4.5.1 Final Brand Promise

After the foresaid five tests reflecting the roles or the potential psychological demands, we find that balancing the roles is the most desirable thing of the modern women. Being a good mother and keeping herself around with the capability to take care of the family is their dream to pursue. They are no longer the traditional mothers who give birth to their child and lose themselves. They still want to start from themselves and be themselves.

Under this circumstance, the core concept of the brand "Baby yourself" came into being. The core concept includes the following three meanings:

1. As a woman, the "baobei" (treasure) is the baby and the second "baobei" is a verb which means take care of myself, and also can be understood as buy more products to award myself, conforming to the initiative of the shopping websites. To

take care of myself for the treasure baby arouses the re-attention of the mother, yet will not exaggerate to the degree of selfishness, which combines the two roles in a delicate way. Only by becoming more confident and beautiful can a mother to make her baby healthy and beautiful. Taking care of herself is the way leading to taking care of her baby. For the mothers, the psychological joy or the physical harvest after the self-awarding is related to the baby's growth, as it liberates the mother and also reminds her of the role.

2. As a mother, taking care of yourself is not only for the appearance, but also involves helping mothers to complete the home tasks with less time and energy. The more time and energy the mothers save, the higher level of love they will offer their child.

3. As a wife, taking care of yourself is not for the baby itself but also for the family. The harmonious relationship with her husband and the parents is also aimed for an environment for the baby to healthily grow. The happiness of the family and the mother will company the joyful growth of their baby together.

4.5.2 Final Ideal Online Shopping Experience

Combining with the brand core "Baby yourself" and the focus group test results of preliminary concepts with respect to the online shopping experience, the following 3 core elements for shopping experience have been summarized:

1. Story-based shopping experience, Consolidate products with lists

One product will function differently in a different environment and under a different context, and consolidate the products with lists is to put the products in a different situation and endow the product with another meaning with a story, which may be the knowledge, the empathy or a reminder for her. The specific practice is to record and categorize the normal purchases to form a list. The user's information automatically obtained by the system and the information filled by the user will constitute the story and the background of the list. For example, a user forms a "the baby food list that the baby ate for the first time". According to the system, the baby was now 7 months old and the information of feeding the baby the food for the first time which was filled by the user constituted the story of the list. When others babies turn into 7 months old, their mothers will know the user's comments on every product in the list, the reasonability of the combination and also know some knowledge other than the products when seeing the list. We may see another example: a user forms a "shopping list for the 3th wedding anniversary", listing the gifts for her husband and

the food ingredients for the anniversary supper. It may serve as a big reminder for other mothers who need to celebrate the anniversary, reminding them not to forget the conjugal relationship while taking care of their baby.

Doing so has the following benefits for mothers: (1) The stage and environment where the mothers are is a very linear, regular and unrepeated process. The past experience gained by other mothers is their best textbooks while the products are the convenient and fast threads to record the experience. To consolidate the products with lists, mothers will learn the applicable background knowledge of the product when buying the product. (2) For mothers in a particular stage, as the products they need are of various types, to purchase one by one and make the investigation is a headache to them. The list-based product combination will allow them to refer to the lists the situation of which is similar to theirs, greatly saving their time and energy. (3) When taking care of the baby, she would easily ignore herself and the family. A good story-based product list will serve as a reminder. If containing herself, baby and the family, it would be a good reminder to her, remind her to more think about her hard-working husband and other members in the family.

For the daily chemicals company, the list-based shopping has the following benefits: 1. The cross-category sales will have a great impact to the increase of the overall sales, more purchases at one time will reduce their operation and advertising cost; 2. The story-based lists will make them more intimate.

2. A safe shopping environment comprised of mothers, a protective screen built on the social power and make purchases based on the comments and lists

There are generally two steps when mothers decide to buy a product, the first step is to decide what to buy and choose the seller and the next is to decide whether to buy from this seller. This is wasting time and energy but the insufficiency of the existing product safety and service system forces them to do so. The innovation of the experience lies in that it combines the demand and the assessment to one place where mothers are allowed to satisfy their demands while directly viewing others comments on the product. Starting from the demand, it will help mothers to match multiple sellers and form a comment bank to make it assuring to buy. Thus mothers do not need to run into the sellers or open one website and leave. The formation of such a safe system needs the reasonability of the system and the collaboration of mothers, as a result, it is important to get used to the repeated set-up and the proper point accumulation will make the system operation more closely.

3. Close combination of online and offline services, Multiple touch points to support the system

In order to establish a comment system and a search network, the touch points of the system shall be strong in the expansion and easy for use. The online, offline and mobile behaviors must be covered by the touch points. For the online behavior, as all use the browser to browse the websites, the most convenient way is to install a plug-in unit in the browser. For the offline purchase, there is a payment link and the way to record the list is the consumption record of the shopping cards, as a result, the system uses the shopping cards to relate the offline link. However, the mobile terminal as the combination point of online and offline services can online complete the complex offline work, such as payment in the supermarket. It also can put the invisible online work to be done offline, such as touch the product in person. Furthermore, there is a combination of online and offline services, such as scan the product offline to view the comments. A network system to contain such a full-swing contact will better enhance the authority and the easy-for-use of the system.

4.6 Product Service System Design

4.6.1 Brand Identity

Seen from the last Chapter, it is a service system which may save time and energy for mothers and also may make mothers at ease, and it is expected that users may find their own role balance by using this system. The core concept of the brand is "Baby yourself".

With the brand core concept and distinction, the delivery of brand image and brand information becomes more important. In this thesis, the two important tools to deliver information, the brand logo and brand publicity videos, are emphasized.

1. Brand logo and brand color system

Fig 4.18 Logo and dominant tone (Designed by the author)

The logo of "PLMM" is comprised of two parts, the upper graphic adopts the English word "mama" with a round and fine line, which is circled by the equivalent width lines. The graphic conveys the following meanings: 1. The English letters M and A resemble a scene of mothers, just like a group comprised of mothers; 2. the left M is like an opened book while the right A is a mother's image, just like she is reading a book. The bottom Chinese words is shown in a deformed round fond. The logo is simple in style, delicate, fresh and independent, conforming to the overall style of the brand.

essential colors of the brand, the expansion of which will service as the brand color system of PLMM, basically conforming the delicate and fresh style of the brand.

2. Brand publicity video

In order to show the theme of "Baby yourself ", the brand publicity video shall find a woman who is balanced between her different roles as a template and find a specific time to exaggerate the splendid balance.

The roles to be balanced include professional woman, mother and wife. Here we choose the roles of a professional woman and a mother which are in the notable conflict. In the traditional opinion, when choosing to be a professional woman, she has to ensure the departure with her baby every morning; while choosing to be a mother, she has to stay with her baby all the time and could not do her work

concurrently. The core value and concept of our brand wishes to allow the females who are using our system to balance the two roles easily.

The specific day to be balanced is the first work after the delivery, therefore we present a splendid feeling of achieving the balance, with the theme of a PLMM goes to work for the first day after her delivery.

Fig 4.19 Video screenshot (Videotaped by the author)

As illustrated, the story is that a PLMM wakes in the morning and gets prepared for the work, shaving her leg hair, brushing her teeth, washing face and making up. And in the video the scene of passing the office with confidence is seen. Female colleagues are surprised that it seems that she did not had delivered a baby. In the last scene, the time goes back to the moment before she goes to work when softly kissing her daughter, every one knows the office focus turns out to be a mother.

4.6.2 Ideal Customer Journey
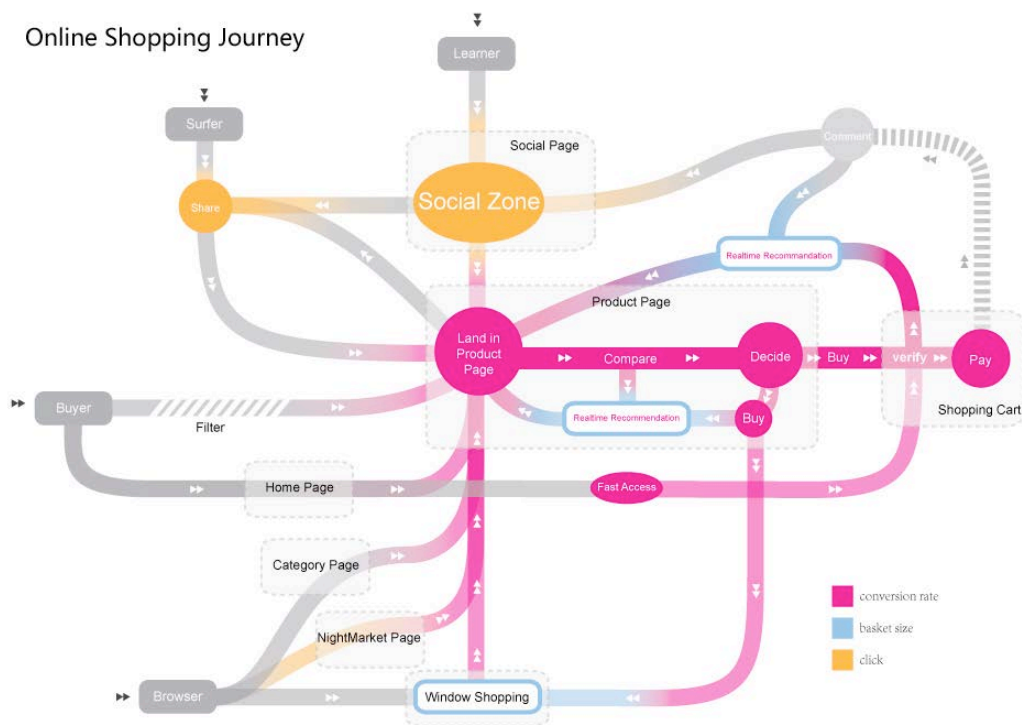
Fig 4.20 Shopping journey under the ideal condition (Designed by the author)

The diagram above shows the user's shopping journey under the ideal condition.

In the diagram, the pink shows a general path of shopping websites, the major process of the action "Purchase". The blue is an action group that may increase the visits such as the relevant recommendation, product combination. The orange depicts the behavior process related to the interactive activities.

Browsers, learners, planned consumers and impulsive consumers have their respective access. Browsers may jump into the system through the sharing on other websites such as weibo and kaixin, land in the social area and check the friend list to see if they have found something new and good or if there are seasonable products suitable for the baby. Or if it is possible to buy something for the family with the approaching festival. When she sees the list suitable for her, the system will automatically match the seller for her and jump to the product purchasing section.

As learners know that the social area has what they need, they treat the social area as a big dictionary to look up for necessary information. No matter whether she is online or offline, she may use the button on the website, APP or the direct webpage to explore and learn if there is an uncertain product. While she is not that specific for the product, several sections on the webpage may meet her demand when searching a

specific demand, for example, the homepage of the social area has a list recommendation suitable for the baby during the pregnancy period and there are all kinds of key words for searching in the search list, to allow her to find the corresponding product list.

Planned consumers will be attracted to the product page of the system from an external access filter, and complete the task with simple guidance, thus having more time to view the recommended products which may increase the purchase amount.

Impulsive consumers may enter from many pages, for example, the night market is the time-related browsing page and the window-shopping is the experience-related browsing page. If she is turned into the loyal user, she also may log in from the homepage directly.

After completing the whole access process, shopping cards may also be used for purchase during the payment link and under the ideal condition, when users purchase products on the PLMM, the shopping cart will automatically calculate your price and recommend the list containing the products.

From the payment to the comment, the offline pick-up by stores is also available.

No matter where the comments are made, they will be gathered in the social area.

4.6.3 Touchpoints

As is shown above, to build a comment system and search network, the touch point of this system should have a strong expansibility and is easy to use. Therefore this system can be divided into three kinds of touch point with web page and browser button as online touch point, shopping cards and physical stores offline touch points and mobile APP as mobile touch point.

Fig. 4.21 Overview of all touch points of PLMM system (Designed by the author)

1. online

（1）PLMM shopping master station

a. Homepage

According to the project's requirements, the homepage of PLMM is chosen to be on Taobao. The function of the homepage is to attract customers' attention so as to set the sentimental tone for the brand and navigate to all subpages and introduction lists.

There are four information tiers of homepage: the first tier is sentiment connection tier which is the first thing users see when logging onto the website and is mainly decided by the website's BANNER and overall style. When users first log onto the website and see BANNER and the overall style, her instinctively understands whether the overall style and BANNER style meet her sentimental requirements, i. e. simplicity, freshness, sophistication and fashion. Then she will decide whether it is the shopping site suitable for her or whether it is a reliable website from the information volume and the extent of the production refinement.

Fig. 4.22 Homepage BANNER of PLMM shopping site (Designed by the author)

The second tier is the attraction tier, which is different from ordinary shopping sites whose second tier is basically information about promotion and discounts. For mothers and positioning of this website, discounts and promotion are not the most significant elements, although mothers still very much desire products with low prices. This tier, however, is mainly set up according to mothers' seven requirements.

Fig. 4.23 Seven golden areas on the homepage of PLMM shopping site (Designed by the author)

The third tier on the homepage is the story tier where many story-style product lists are highlighted. Unlike the habits of ordinary consumers, we let consumers first see the story to built sentimental connection and then provide her with the solution to this story. The consumer first buys this story, the knowledge in the list and then the product which undoubtedly add much value to products.

Fig. 4.24 Loving yourself exclusive area on the homepage of PLMM shopping site (Designed by the author)

The fourth tier is the product Fig. tier. When attracted by the story they will see product photo which is the original purpose of shopping. Unlike other shopping websites, we combine product Fig.s and some plots in the story to continue to enhance users' sense of identity for the stories.

Fig. 4.25 Loving babies exclusive area on the homepage of PLMM shopping site   (Designed by the author)

The fifth tier is the product information tier with product information of prices and product names. According to ordinary shopping sites, the price information tier should not appear in the end, but price is the last reward for mothers in this shopping experience. As is seen in the Fig., all prices are marked with mother price as well as the original price for mothers to see price difference easily. If the website always offers the most favorable prices mothers then do not have to go to other websites after several comparisons as this website does attract consumers through prices but experiences.

In the end of the homepage, the social page of PLMM is introduced.

Fig. 4.26 Weekly shopping lists of star mum on the homepage of PLMM shopping site (Designed by the author)

As illustrated, this site uses the theme of star mum to recommend their shopping lists as mothers tend to believe in the experience description by some experienced mothers. In this area, the information includes basic information of star mums such as photos of star mums, ages of babies, which is easy to strike a chord with mothers, for example, mothers whose children are or will be at this stage wish to see lists like this for reference. The main name of this list is "babies can finally eat supplementary food"; such subjects offer the main line of the list story, i.e. what to prepare when babies want to eat supplementary food. The specific products on the right side include photos and comments of products. The way to combine lists and comments enable mothers to have a clear idea about what to choose, whether they should choose this product and whether they should purchase here.

The purpose of the list here is to provide mothers with deeper understanding of the combined experience of list and comment-style shopping. Click to check more lists and then mothers are brought to the social page.

（2）PLMM social area

This area is the core of the system where mothers can upload lists and comments and check lists and comments of other mothers. The social area can directly connect to the shopping site to complete the purchase. The social area resembles a safe region formed by mothers where they can check products at ease as there are numerous comments by mothers and also gain knowledge. Taking the product list as carrier, mothers can know more parenting knowledge, the way to deal with family relationships as well as their own image building.
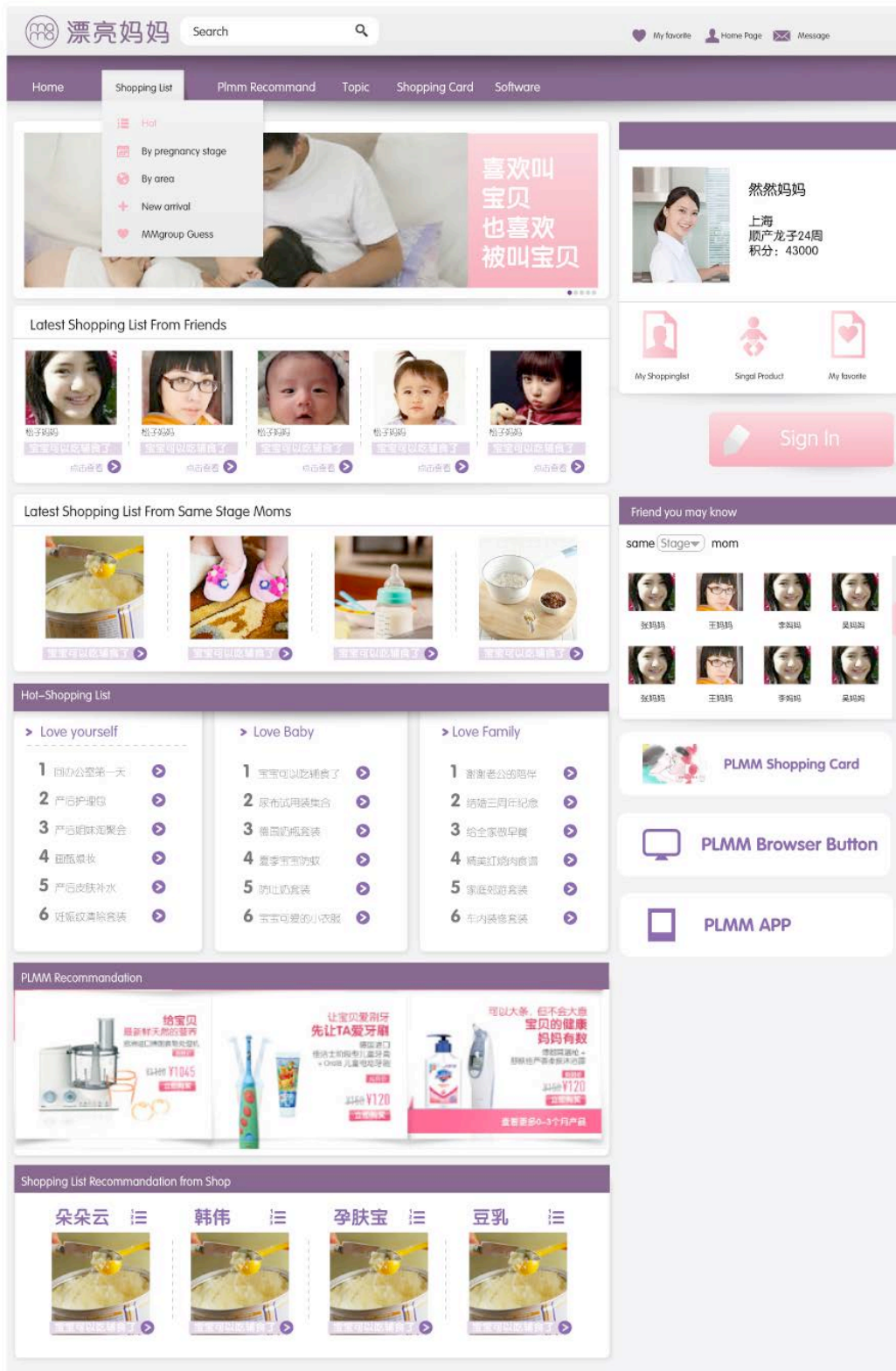
Fig. 4.27 PLMM social area overview(Designed by the author)

a. social area overview

In respect of overall style, social area has maintained the style of homepage: simple, delicate and fresh. There are some differences from homepage in colors as the social area adopts LOGO's purple as the dominant tone interspersed with pink.

In respect of information distribution, with photos as the first tier information, mothers can find products that are suitable for them or lists related with them at first sight. The second tie acts as the arrow with each pointing to a list therefore, mothers can easily read on pages through the indication of arrows. When they read the list names then they arrive at the third tier. List names are mostly short and concise and easy to read. The last is some functional buttons and other web page navigation.

The followings are the detailed explanation of each functional area:

a. top navigation line
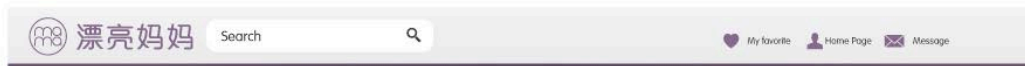
Fig. 4.28 PLMM social area top navigation (Designed by the author)

As illustrated, the top navigation line is made up the following parts. The left is PLMM logo button, clicking this button will directly return to homepage of PLMM shopping site. Beside the LOGO button is the search area where mothers can search the products and key words they wish to know. The search result is made up of two parts, one is the individual product and the second is the list containing key words. Mothers can directly click products to check comments or the lists to check the background of the product list. There are three buttons on the right. My collection is the area containing the lists and individual products. Click to enter into the personal homepage to arrive at my personal homepage on which shows my uploaded lists, products I have commented and other comments about me. Click the information button on the right to check the communication between others and me and check PLMM short message. PLMM short message is the tool mothers leave messages to each other. Mothers can ask about related parenting and other questions through PLMM short message.

b. In-site navigation line
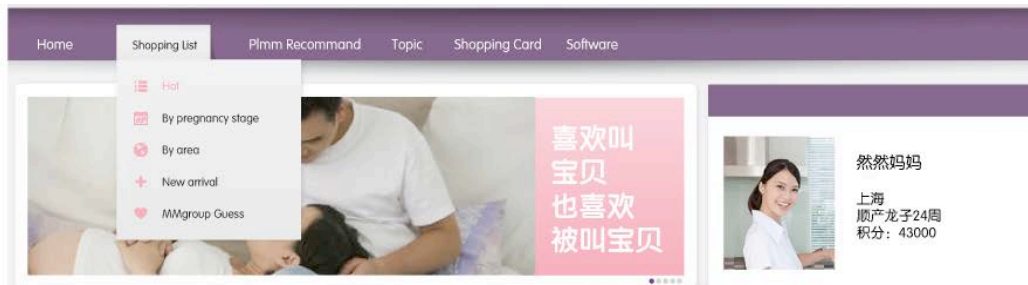
Fig. 4.29 PLMM social area functional navigation (Designed by the author)

The function of in-site navigation line is to navigate in the social area. From left to right, the first is the homepage button with each clicking returning to the present page. The second is shopping list whose pull-down menu include popular shopping menu, shopping menu classified according to pregnancy or areas, the newly generated shopping list as well as mothers guessing what you want. Popular shopping menu is the list billboard with the most clicks in the social area. Usually these lists are highly reliable and certified by the public including not only proper products, accurate comments as well as a background introduction extremely suitable for this list. Shopping menu classified according to pregnancy will first recommend and register lists with the same user background according to user's information previously registered, such as what a mother with seven-month pregnancy first sees is the list generated by other mothers with seven-month pregnancy. Such recommendations have very high accuracy rate and comply with users' situation. The background knowledge and situation in the list is a very good reminder and education for users. The function of lists classified according to areas lies in that mothers from different areas may have quite different parenting experience and consumption habits due to geographical surroundings, air quality, weather condition and product categories, therefore lists classified according to areas can help mothers to find suitable lists more efficiently and fast. New lists are the most updated lists. As mothers are so informed as to create trends easily most of the times and new lists are where such trends can be brought to life. In the new lists, mothers can easily see what is the most popular in the present, which countries offer the best milk powder and the most durable and safe feeding bottles with the highest timeliness. Mothers guessing what you want is an intelligent support page and automatically help mothers to catch lists in consistent with her situation according to lists mothers previously clicked or information completed. Due to the high integration of information, recommendations usually have high success rate.

The third button is PLMM recommendation whose navigated page is the distribution of PLMM shopping site in the social area. Click to enter and you will see sets of combination products formed by combining products sold by PLMM according to subjects. This area organically integrates social area with shopping area.

The fourth button is featured by methods of seasonal organization of shopping lists. For example, in summer, the theme may be prevention of mosquitoes for the whole family, and then all will write articles about how to prevent mosquitoes, the purchased products and comments for each other's reference. Organizing special subject is one important activity of this system. Good activity organization can touch mothers' feelings so as to increase participation in the short term and enhance popularity and hits.

The last two button shopping cards and software respectively introduce the other three touch points of PLMM: shopping cards, browser buttons and mobile APP. These three touch points are organically integrated with websites to facilitate users to upload shopping lists and search product comments.

c. shopping list area
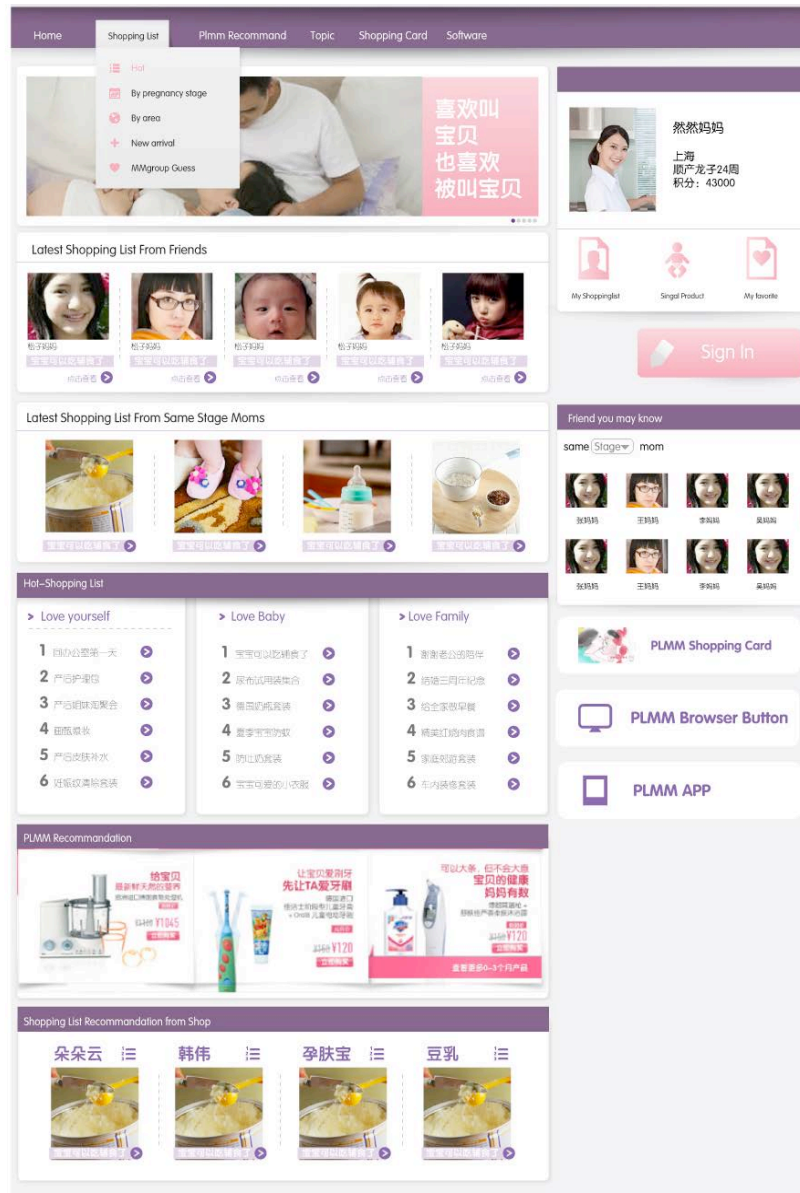
Fig. 4.30 PLMM social area lists (Designed by the author)

This area is the major shopping list area where users can find suitable lists for reference according to different list classification. From top to down the first section is the theme area. As is introduced in the navigation line, popular themes that can touch people's hearts will strike a chord with mothers and create trends. Firstly they have the interest to enter into the page and then they will take an active participation. Unlike novels, shopping lists should be conceived to be completed. Users need only upload what they actually bought and then wrote their own comments and the story of the whole list, which is easy to operate. Mothers therefore need not strive to complete and upload the lists. The theme area is easy to gain popularity and hits as well as good

content for off-site promotion. For example, the theme "love to call and be called babies" can easily strike a chord with mothers. Although they are mothers who love their kids they were once wives deeply loved by husbands. She wishes to be loved by husbands like children. Themes like these are lists related to family relationships.

The second section is latest friend lists. The reason to add others as friends is to share similar or a certain continuous relationship. Some like to add star mums as friends so as to see the recommendations of the most authoritative mothers. Here the friend is one-way with no need for certification like followers on weibos. This is like the self-defined knowledge base and magazines by mothers where they can see what the people they want to know are buying for reference. For example, if the celebrity Xu Xidi opens an account on this page, she may be added as friends by many people to see how she can take good care of her daughters as well as maintain and coordinate the relationship between her husband and herself.

The third section is pregnancy-related list. As is said previously, the pregnancy and parenting process of mothers is a one-way process that cannot be repeated. Therefore collaborating to go through every stage together is particularly important for mothers. This area is like a schoolmate party in the same class at the same grade. As mothers at the same stage face the same problems, if at this time all upload lists for each other's reference it will save the time to do research and reduce the risk to make children as guinea pig.

The fourth section is the latest popular list. In this section, the lists are divided into loving yourself, loving babies and loving the whole family. As is said above, the purpose of such division lies in finding balance among multiple roles for mothers and reminding them that they are not only children's mothers but also a beautiful mother and wife. The balance and coordination of the three roles is the biggest challenge and highest standard for a woman. But this system tries to remind mothers of the balance of these roles or help solve problems concerning role balancing through product lists from the angle of product supply. There is a ranking list in each list to facilitate mothers to refer to the latest trend.

The fifth section PLMM recommendation is hinge that connects PLMM shopping site and social site. PLMM shopping site introduces highly relevant lists for mothers to choose according to the latest trends and shopping habits provided by social websites with extremely high accuracy rate.

The sixth section is retailer popular list area. In this area retailers can upload lists through business accounts and organize products for mothers to choose from in the form of lists. Lists uploaded in this area usually offer super low discounts other places cannot provide.

d. user data area

Fig. 4.31 PLMM social area user information (Designed by the author)

The user information area will show users' name, photo, region, child and credit. Credits can be obtained by sign-in everyday, upload lists and comment on products. Credits can be increased according to the times of reflection of lists and comments. To a certain extent, credits can be used to be exchanged into the biggest consumable-diapers. The following buttons are my list, collected individual items and lists. You can quickly sort out my previously collected products or lists from here, which is easy and convenient to use like a bookmark. The bottom is a button to gain credit by sign-in used to encourage users to sign-in every day.

e. friend recommendation area
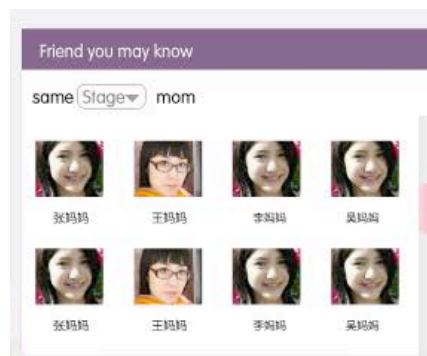
Fig. 4.32 PLMM social area friend recommendation (Designed by the author)

In this section mothers can get recommendations of friends with similar nature such as the same duration of pregnancy or region. After adding friends, users are like subscribing to several magazines which have high relevancy with themselves and therefore easy to search.

f. other touch point recommendation area
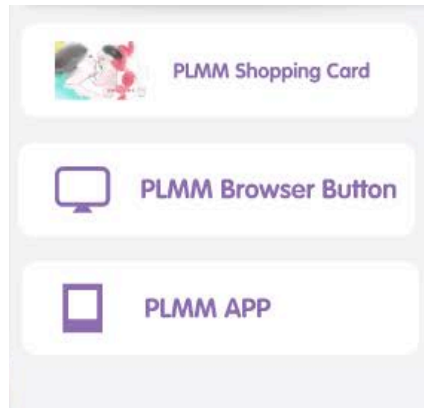
Fig. 4.33 PLMM social area other touch point recommendations (Designed by the author)

This section recommends three other tools to upload lists, comments and search product list and comment information.

The above is the homepage of social area which basically covers the functions the social area is required to show. The social area also includes specific shopping list classification page, list page, search page and so on, which will not be elaborated in this article.

g. list page

Fig. 4.34 PLMM social area list page (Designed by the author)

Entering into the list and you will see the basic information of mothers who send this list as well as the basic information of this list. They can be clicked for collection, reposting and sharing. The following is the introduction of the lists and the sharing of experience by relevant users. The right side is other sharing lists by this user and mothers who collect these lists.
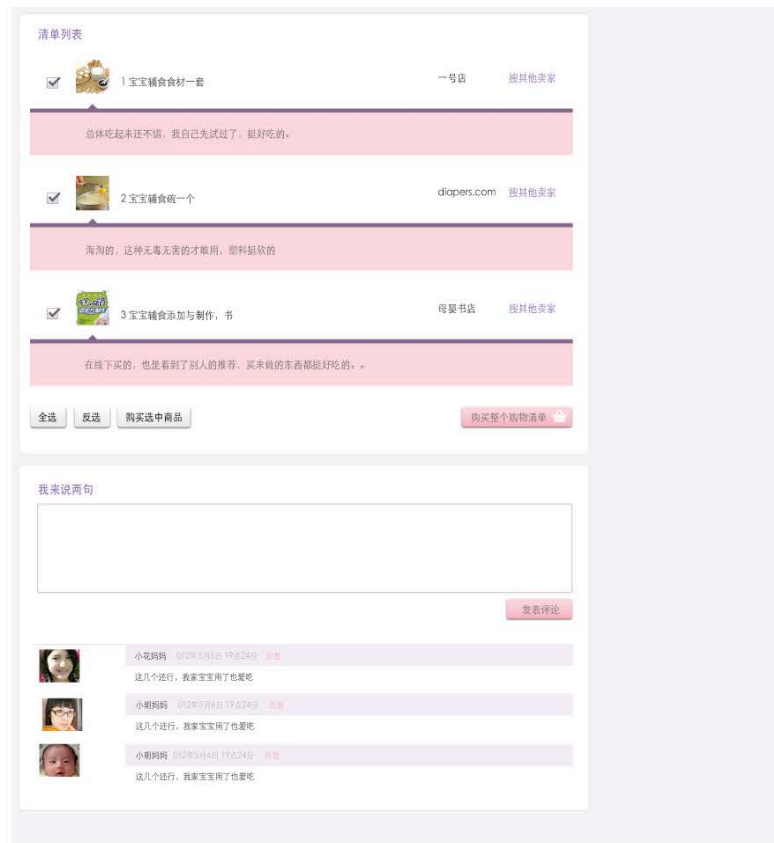
Fig. 4.35 PLMM social area list page (Designed by the author)

The list introduction includes names of every product, the purchasing retailers and product comments in this list. Users can choose to purchase the whole shopping list or item by item. The bottom is the comments on this list by other users.

（3）browser button

Browser button is a tool that enables users to search products and upload lists. The technique of this button is the automate matching and identification of content on the page by browser kernel. The cooperation with Taobao website enables Taobao to add invisible tag to some information of the product for easy capture.
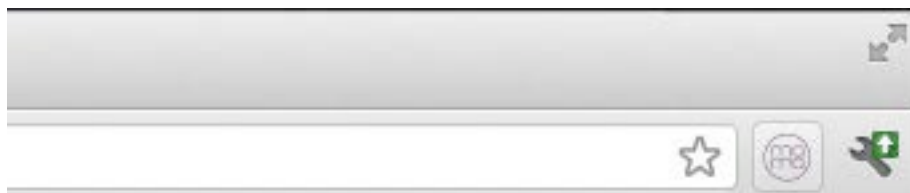
Fig. 4.36 PLMM browser button (Designed by the author)

As illustrated, PLMM browser button is a browser plug-in on the right side of the browser address bar. When you see a product, click it and the following picture is shown
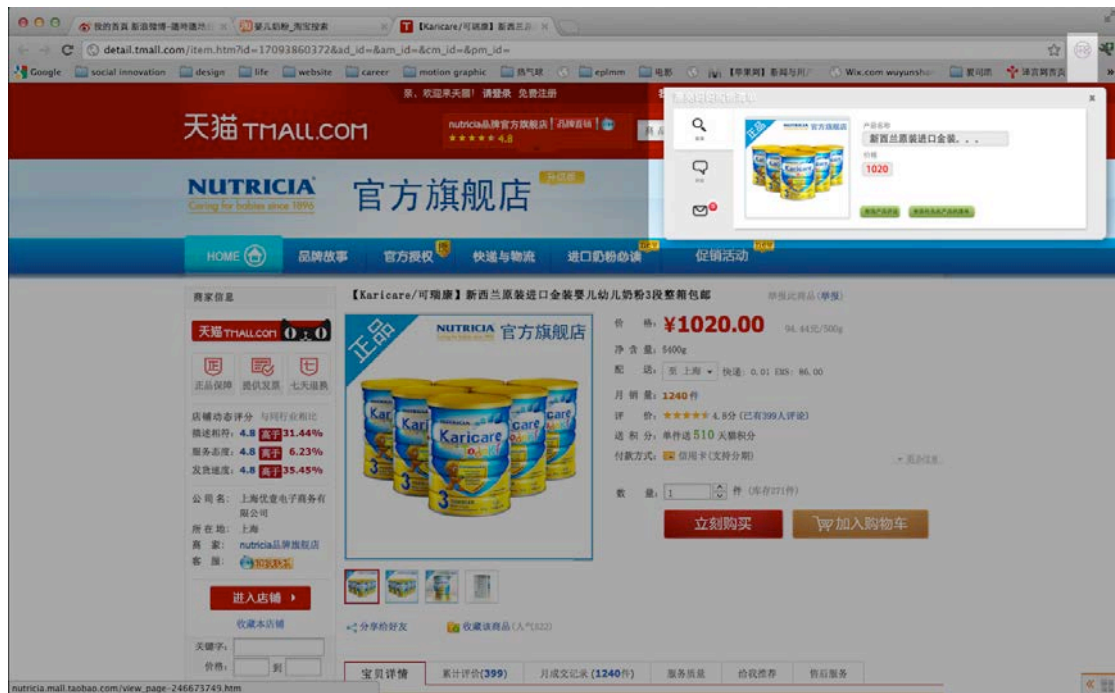
Fig. 4.37 PLMM browser button (Designed by the author)

As illustrated, clicking the button can not only pop up the dialog box, but also automatically capture the information on the page.
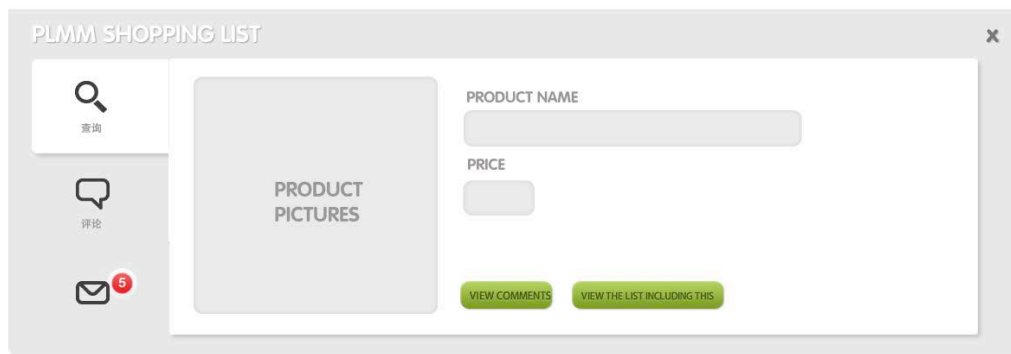
Fig. 4.38 PLMM browser button search tag (Designed by the author)

The specific form of the dialog box is shown as the Fig. including search, comment and information on the left.

On the product page, when users click the button and this plug-in can automatically capture page information to fill in, search product comments or lists containing such products.
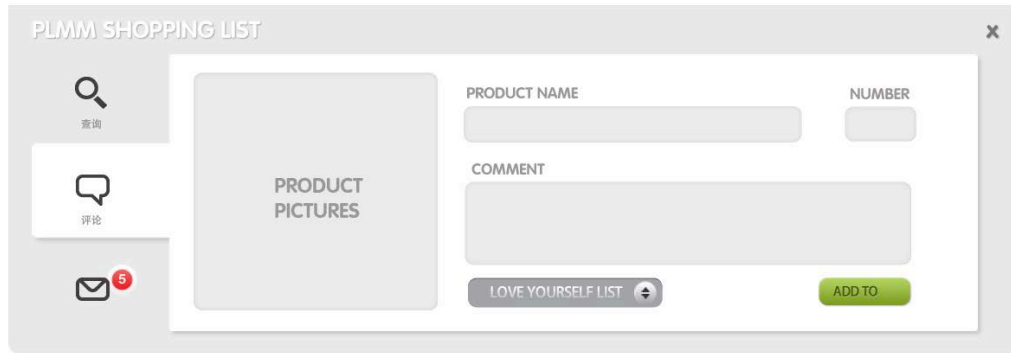
Fig. 4.39 PLMM browser button comment tag (Designed by the author)

As illustrated, when users have already received express delivery to confirm to pay, this plug-in shows to comment this tag. At this time, the tag includes photos, names and quantities of products automatically captured by plug-in. Users only need to write comments choose the set list, click to add in this list and complete the uploading of the product.

And the last tag is information tag which contains the latest replies your friends leave for you and PLMM short messages.

2. offline

(1) PLMM shopping cards

PLMM shopping cards are pre-paid cards that have four major advantages: a. can enjoy discounts in cooperating stores b. can real-time record purchased products and confirm to upload to shopping list through APP c.can accumulate credits to exchange for gifts d. is the membership sign of offline PLMM and can be used to receive delivery collected by convenience store and participate in PLMM offline activity.

Fig. 4.40 PLMM shopping cards (Designed by the author)

The first time to apply for PLMM shopping cards only need register a user name on PLMM website and complete personal information. The first delivery gives away sampled packages of diapers to attract the registration of mothers.

The design of shopping cards is the same style of PLMM homepage, which adopts watercolor painting style. In Fig. 1 a mother holds a child which conveys the brand narrative of for babies themselves.

(2) offline partners

As one type of important partner of PLMM, offline partners are also an important touch point of PLMM. PLMM and offline retailers have the following resources and information exchange:

a. PLMM shows the record of offline purchases by users in the shopping list to help retailers to attract more users

b. partners support the use of PLMM shopping cards and provide a certain amount of commission for PLMM every time the card is used

c. as the offline platform of PLMM, partners help PLMM promote themes and collect express delivery to facilitate users to understand seasonal themes and solve the express delivery issue of working hours

3. mobile devices- PLMM mobile phone APP

One major advantage of mobile devices is portability. With the increasing upgrading of online speed, the access capabilities of mobile devices have been greatly enhanced, which provides the online and offline combination a good basic support. PLMM mobile phone APP is the important tool that connects online and offline. The application of PLMM APP means the PLMM system has penetrated into all links of online and offline mother shopping.

Under normal logging conditions, the APP homepage shows friend list and other functional buttons.
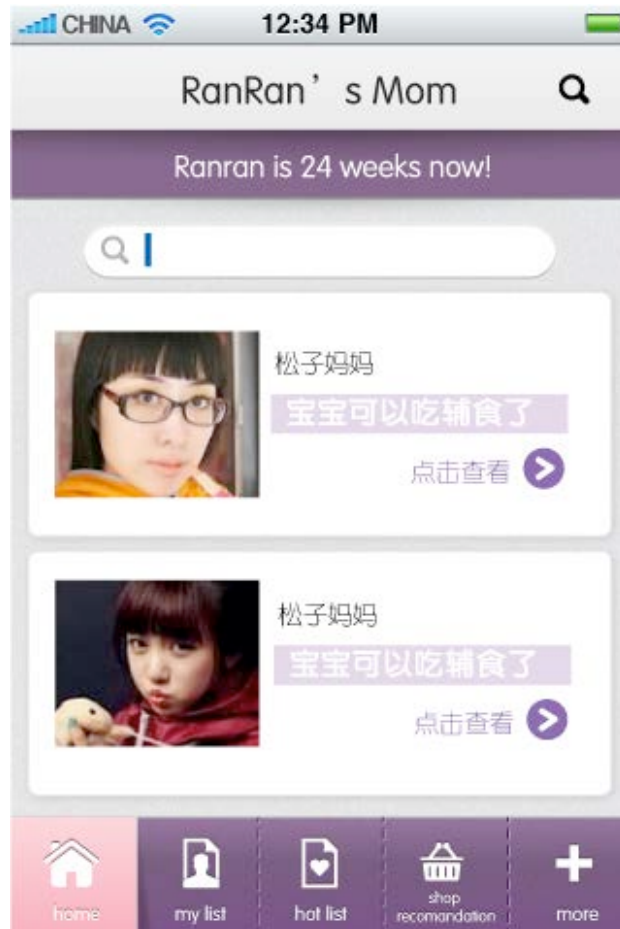
Fig. 4.41 PLMM app homepage (Designed by the author)

As is shown in the Fig. the top of the interface is the user name, aside is a magnifying glass and this button points to the page of barcode scanning.

Under the user name is the condition of user's baby, pull down the page by finger can see the recommendation lists of mothers at the same stage.

Further down is search area to type in words to search lists or products.

The main interface in the middle is the latest updating status of friends which can be clicked to enter into friend list.

The bottom are five navigation line buttons. From left to right are homepage which is the present page, my list which shows collected individual item, list and my own list, popular list which shows the recently most popular list; retailer recommendation includes some combination products generated by retailers; more includes system

When a user sees a product offline and wants to see its comments, click the search button on the upper right corner to start the procedure of barcode scanning. After the scanning, the screen is shown as follows:
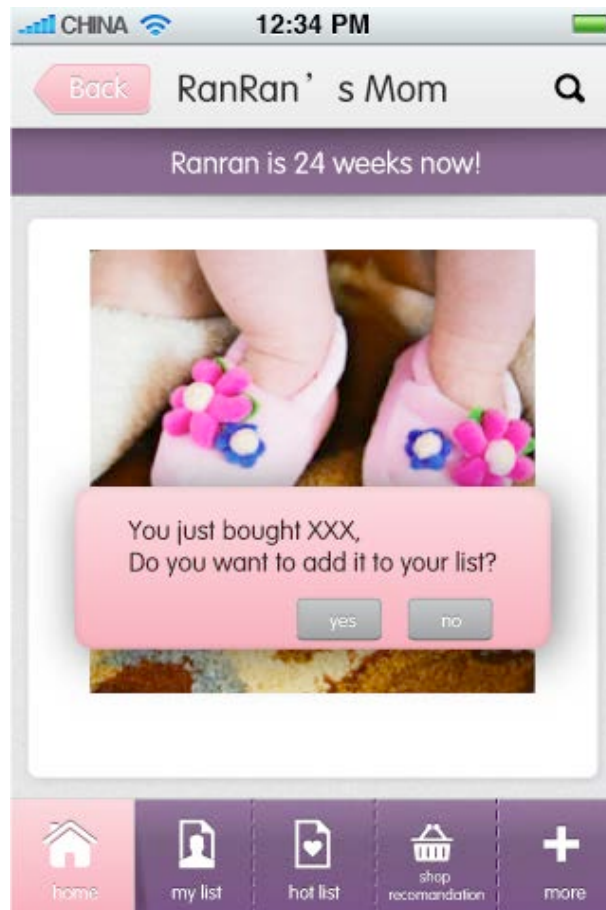
Fig. 4.42 PLMM app product barcode identification (Designed by the author)

The main interface shows product photo, barcode identification and product name and price. Click here to check the product comments or search lists containing such products.

When user completes a purchase with PLMM shopping cards, APP will automatically pop up a notification reminding whether the user wants to comment on the product. See the Fig. below:
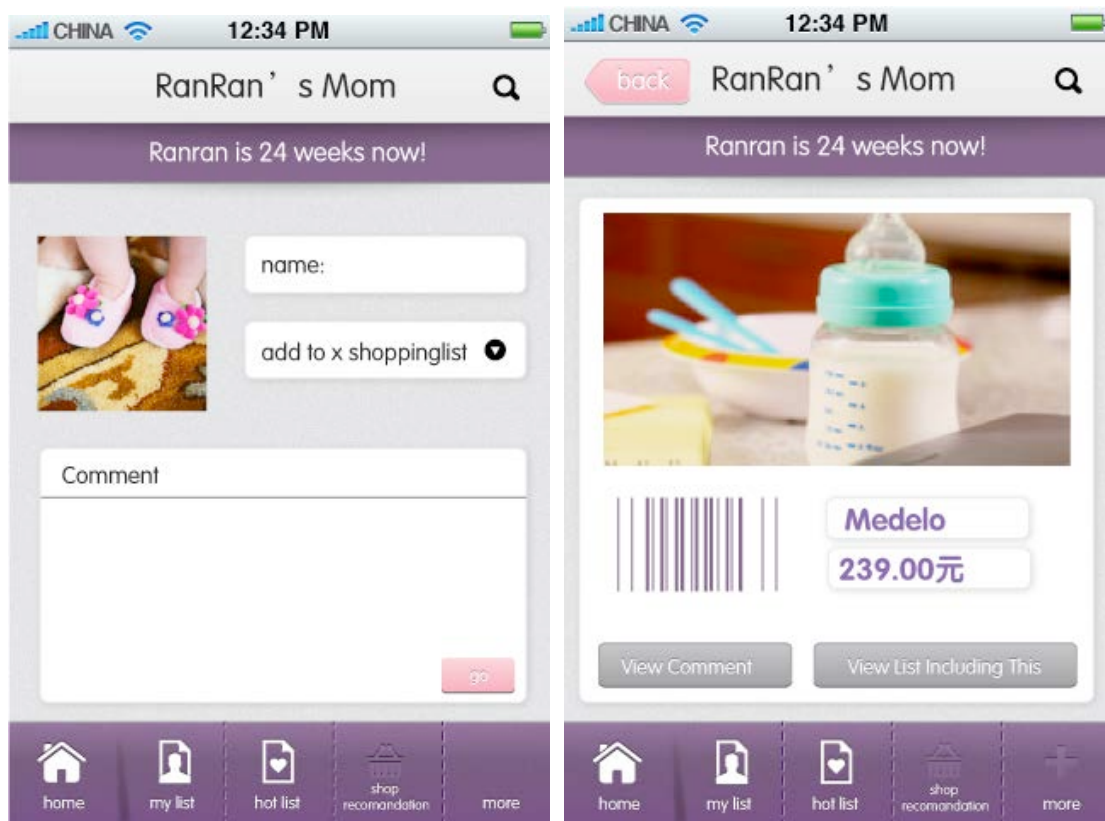
Fig. 4.43 PLMM app added list and comment (Designed by the author)

As illustrated, after successfully purchasing a product, the system will automatically pop up the product photo and a prompt box inquiring whether to join the list. Click yes to enter into the comment and list addition page. Choose which list to join after the name and sent out after making comments.

4. Touch point summary

All kinds of touch points above cover all links of shopping to realize seamless connection of online and offline shopping. Each touch point tries to help mothers upload shopping lists in the easiest way and in the meantime enabling them to gain the enormous convenience from the lists and comments thus creating a safe and comfortable shopping environment for mothers. Each touch point centers on the theme of "for babies themselves" and try to use the convenient way to save time and efforts for mothers as well as enable them to play multiple roles.

4.6.4 Story-telling

Storytelling of customer usage vision is expression tool that can directly display the whole behavior process which occupies an important position in the tool of service system design. Storytelling uses all the touch points of the system from the user's

angle and express the ideal status the system wishes to achieve in the way of story-telling which is simple and clear.

Storytelling firstly sets the traits of characters who are our most core users. In addition to setting basic attributes such as the age, sex, occupation, monthly income, special attributes related to system should also be added such as the duration of pregnancy and size of the baby.

The following is the story-based vision:

Character: Mom Ranran

Age: 29

Location: Shanghai

Career and income: English teacher, monthly family income: over 18000

Child information: 26 weeks, boy, normal labor

Basic description: As an online shopping expert, Mom Ranran often makes online shopping and also likes to make a comment for the product bought for reference. She joins some mother groups and often discusses with other mothers in the groups. She loves her baby and wants to give her the best. But what troubles her is that she does not know what to buy for her baby for this is her time first to be a mother; furthermore, too many fake products prevail in China and it should be cautious to buy anything, so she has to spend a long time in doing investigation before making the purchase, thus buying for her baby becomes a really headache for her. Her husband is good to her and can show understanding and sympathy when she was bad-tempered in the pregnancy, and she appreciates but does not know how to express.

1. Click and attract: First encounter with PLMM

ma
ma　漂亮妈妈

Fig 4.44　1 –First encounter with PLMM (Designed by the author)

Mom Ranran heard occasionally that there was a taobao platform called PLMM where different products for different situations are set for her, just like the product lists. And it is a comment-based shopping, one may view the comments before making the purchase. This time and energy saving shopping experience attracted Mom Ranran.

Thus, Mom Ranran went to the homepage of PLMM for a taste. She was attracted by the simple, fresh, close to life and female style of the website at the first glance.

每周明星妈妈购物清单

Fig 4.45　2 – Browse in the PLMM shopping website (Designed by the mother)

Mom Ranran then saw a list shared by the users which was written by a mother whose child was 24 weeks old, and also relevant to what she needed. As she viewed the comments and decided to take a close look at more shopping lists, she was taken to another page, which was the page of mother faction. On the page of the mother faction, Mom Ranran saw many relevant shopping lists and she happily thought this was the shopping experience she wanted.

Fig 4.46   3 – Download the APP of PLMM (Designed by the author)

At the time she saw the PLMM shopping cards recommended by the system, it would have the free delivery and try-out package of diapers for the first time card application, and it would have the discounts later, she applied for the card. She used the mobile phone frequently so she also downloaded the APP.

2. Browsing mode: In the normal browsing, the browser button and mobile APP are used to store the shopping list.

Fig 4.47   4 – Add products to the list or comment (Designed by the author)

After using it for a period, Mom Ranran also discovered the browser button of the PLMM and she would use the button to collect the good products found when strolling online. She also would use the APP to record the products she bought.

3. Learning mode: Learn the nurturing knowledge from the lists and grow together with other mothers

Fig 4.48   5 – Learn the nurturing knowledge from the lists (Designed by the author)

Because of her appeal and frequent sharing of lists, a lot of mothers have become her friends and she may also learn much nurturing knowledge from their shopping list. For example, when it was time for her baby to eat the baby food when she turned 7 months old, she went to the website and viewed what other babies were fed with in other mothers' lists whose babies were 7 months old and then she would have a try. When she saw a mother who was good at sharing and seasoned, she would follow her as a friend. At times when she was free, she would go round to see if there is any update in the lists, for example, when the winter was coming, if every one was supplementing their babies with calcium.

4. Purchasing mode: Comment-based purchase, enjoy the shopping in an assuring and safe environment

Fig 4.49　6 – View the comments and lists of unfamiliar products (Designed by the author)

Mom Ranran would use the browser button when seeing unfamiliar products. There was a function able to automatically find the comments or the lists, thus making it possible for her to see the comments related to the product on the website and relevant lists.

When she hesitated to make the offline purchase, she would also use the APP of mother faction. By inputting the name or directly scan the bar code to view the comments and lists would help her make a quick decision.

5. Payment: Enjoy the discounts while easily record the shopping lists

Fig 4.50　7 – Using the gift card, enjoy the discounts and record easily (Designed by the author)

Mom Ranran would often swipe the card of mother faction when making the offline purchase, and APP would automatically pop up the money and points every time she swiped the card, and the system would remind whether to upload to the list. Generally Mom Ranran would upload and make the comment. Furthermore, using the card of mother faction would enjoy the discounts in the designated stores. Kill two birds with one stone!

6. Express delivery: Agency pick-up solves a big problem

Fig 4.51   8 – Convenience store picks up the express delivery (Designed by the author)

When Mom Ranran was at work and away from home, she could not pick up the express delivery, besides the diapers were big and heavy, so she chose a convenience store close to her home as the agency pick-up position. When she gets back from the work, she may pick up all the things at one time in the convenience store before going back home, and when she gets back, the baby and the family may directly use the products.

7. Comments: Be a star mother, share more lists and make more comments to win points for free diapers
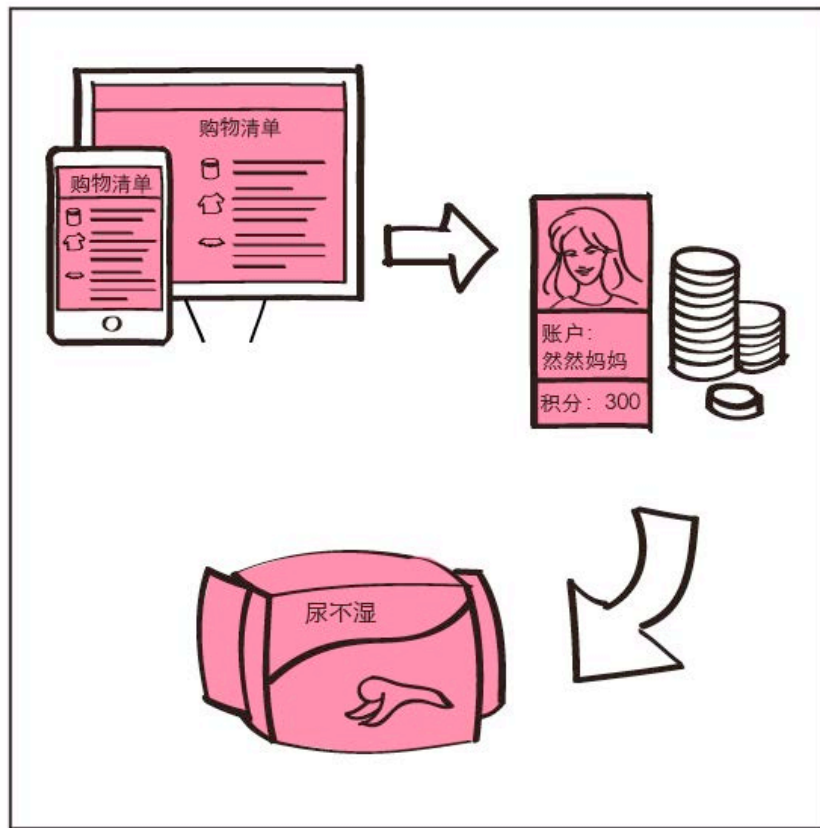
Fig 4.52　9 – Win points for free diapers (Designed by the author)

The button of "complete the payment" or the APP would remind whether to make the comment or add to the list. The more sharing of the list, the more points would be accumulated for Mom Ranran. She was diligent in recording her shopping lists and sometimes it was possible to trace how many diapers and milk powders had she bought.

8. Long-term vision: Baby yourself, balance multiple roles

Fig 4.53　10 – Balancing multiple roles (Designed by the author)

When Mom Ranran was pregnant for 8 months, there was list including a fragrance, a razor and a bouquet, because she thought her husband was considerate and understood her bad-temper and she wanted to say thanks to her husband for the care and understanding. This list was selected as one of the themes of the season, becoming the popular list "love to call the baby and love to be called a baby". The categories of love yourself, love your baby and love your family can make her view how others maintain herself and the family, and make her to balance the triangular relation without any trouble.

4.6.5 Business Mode

Fig 4.54 Business Mode (Designed by the author)

Definition of business model: to maximize the client's value, all the internal and external elements of the company are integrated to form a complete operating system with high efficiency and unique core competitiveness and then meet the client's requirements and realize his value through the optimal form while in the meantime developing a comprehensive solution to realize the goal of continuous profit-making.

Business model is a very broad conception. There are many terms related to the usually called business model, including operation model, earning model, B2B model, B2C model, "mouse plus cement" model, advertising revenue model and so on. Business model is a simplified business logic which still needs some element to describe this logic.

Value Proposition: the value a company can provide through its products and service. Value proposition confirms the practical meaning of a company to its customers.

In this business model, the value proposition is consistent with the core conception of the brand. "For the baby itself" is the ultimate ideal status it wishes the customers to realize through usage of this system, as well as the expression of their potential requirements. Creating a time and effort-saving trusting shopping experience for mothers the new list and comment-style shopping way indicates the core value this system can bring to mothers, one is time and effort-saving, the second is trusting

purchase by the list and comment-style shopping way to meet mothers' current experience requirements.

Customer segments: the customer segments a company targets at. These segments share some common traits so as to create value for the company. The process of defining customer segments is also called market segmentation.

The customer segment of this system is the urban young mothers, to put it more specifically, young mothers between 25 and 34 years old who live in the first and second tier cities, mothers who prepare for pregnancy to those with children at two years old are core users of this system, which can be categorized into four user models through previous models: viewers, learners, compulsive customers and planning customers.

Distribution channels: various methods a company uses to get access to customers. It elaborates on how a company expands its market, which involves the market and distribution strategy of a company.

In this system, as a major part of the revenue resource is returned as credits by retailers through guide of flow, so the distribution of the flow inlet is that of the sales volume. This system has four kinds of touch points by flow inlets, including PLMM website, PLMM browser button, PLMM mobile phone end point and PLMM shopping card. These four locations within access to customers enable customers to find suitable merchants through PLMM and the PLMM can get corresponding returning credits upon the completion of the deal

Customer relationships: the relationship between the company and its customer group. The Customer relationship management usually talked about is related to this.

The customer relationship in this system is through a membership system of PLMM, i.e., an account for all PLMM websites, APP and shopping cards, to give out products with corresponding value according to credits gained through shopping and sharing as rewards.

Key Resourses: the allocation of resources and activities.

In this system, the resources mainly come from the database users have developed. The enormous user data can not only attract more users to come to research and shop but also analyze the shopping habits and behaviors behind the user data in order to send proper products in proper time. Online and offline stores are also important sources as the more partners there are, the more discount stores where shopping cards apply and the more users will be attracted to use shopping cards.

Key Activity: the competency and qualification a company implements its business model.

In this system, the main activities are: selling, as PLMM has its selling site; platform maintenance, used to collect user list and comments – the largest resource of this system and therefore its guaranteed accuracy is the core activity of this system in order to maintain its smooth operation.; to attract collaborator, the more partners there are, the more discount stores where shopping cards apply and the more users will be attracted to use shopping cards; manage shopping cards, as one important touch point of this system, the wide use of shopping cards is the best assistance and promotion for offline retailers. Offline operation is as important as online operation, therefore it is particularly important to manage shopping cards; theme planning of activities, theme activities are beneficial to the promotion of this system and also can collect a great number of lists when needed.

Partner: a company forms partnership website with other companies in order to efficiently offer value and achieve commercialization, which also describes the scope of a company's business alliances.

This system, users and retailers are the most intimate partners. As the beneficiary of this system, users can also create more lists and comments for this system; retailers can gain popularity and flow to return credits for PLMM service and therefore have direct economic relationship.

Cost Structure: currency description of tools and methods used.

The cost of this system mainly comes from operating expenses, including daily personnel cost, server maintenance and promotion cost, such as activity planning, advertising cost and so on.

Revenue Model: approaches a company uses to create wealth through all kinds of revenue flow.

According to the main activities of this system, the revenue of this system mainly comes from the following three aspects: 1. Sales revenue from its own shopping website; 2. The returning credits of retailers, for every customer that guides the flow, retailers will pay certain fees for PLMM as commission; 3. Value interest of shopping cards, as shopping cards are prepaid cards and users will save a certain amount of money in the card which will generate some interest.

4.6.6 Offering map
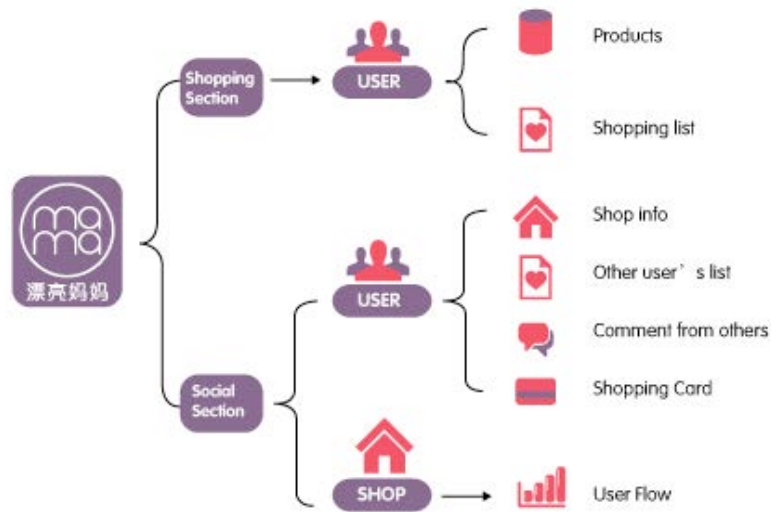
Fig 4.55 Offering map (Designed by the author)

Offering map is a comprehensive icon that describes products and service for other stakeholders by the system.

As illustrated, PLMM service system is divided into shopping and social part.

1. Shopping part

The output of the shopping part is very clear, including corresponding products product lists for users.

2. Social part

The social part is the core of this system, whose output is mostly information-related output including retailer information, lists and comments of other users, discounts and benefits brought about by shopping cards for users.

What retailers gain is simple, i.e., click volume of users.

4.6.7 System map
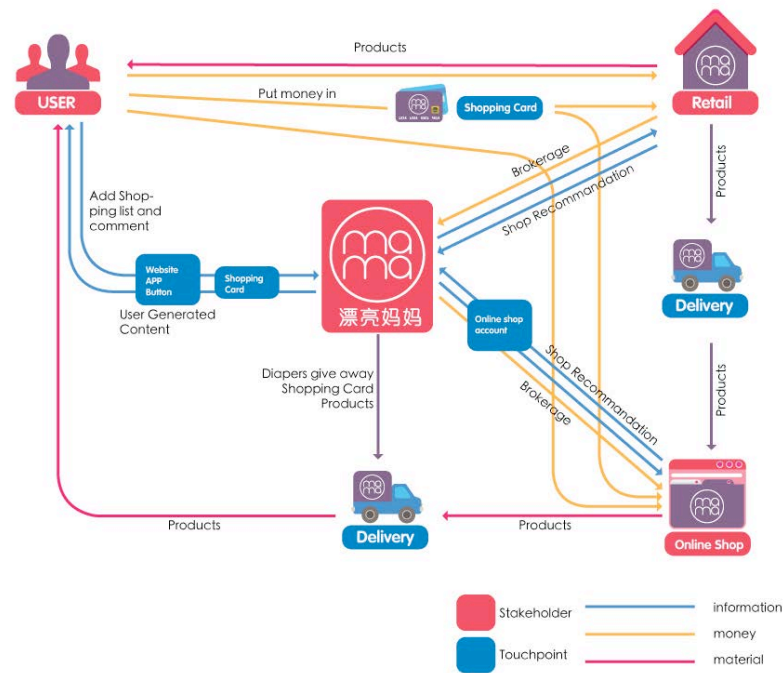
Fig 4.56 System map (Designed by the author)

The diagram is a comprehensive chart showing the information communication, material exchange and financial trend between different stakeholders.

1. Stakeholders

In this system, there are altogether four kinds of individual and systems as major stakeholders including PLMM service system itself, online stores, offline physical stores and users.

2. Touch point

As is described above, touch points are divided into three categories including online, offline and mobile. Online touch point is comprised of PLMM shopping site, PLMM social networking site and PLMM button. Offline touch point includes physical stores, shopping cards and express delivery. Mobile touch point includes PLMM mobile phone APP.

3. Information exchange

As is shown in the diagram, PLMM system has information exchange with every stakeholder. The information exchange between the system and users is that the system provides comments and lists of other users as reference while users provide user comments and lists written by them. The information exchange between the

system and retailers is that the system provides user flow and information while retailers provide the retailer shopping list recommended by PLMM system.

4. Material flow

Material is purchased products. In this system, products are sent from online stores and received by users through express delivery. If users require offline stores in place of express then the products first arrive at cooperating stores and fetched by users.

5. Financial flow

The shopping card of PLMM system enables users to top up money to the shopping card with money flowing to PLMM. Users buy products from retailers with money in the shopping cards and then the money flows to retailers who return credits according to a certain percentage to PLMM as commission for guide of flow.

Chapter V Summary and Outlook

Pursuant to the "human centered" design philosophy, the thesis studies the urban young mothers -- as important customers and their social roles from a particular angle of online shopping.

At the start of the study, the thesis studies and explores the "human centered" design philosophy as well as the methodology of product service system and summarize a set of approaches suitable for the study and design on the subject.

As mentioned above, during the research, the data of about ten existing baby & mom websites and online shopping sites are collected and analyzed. Most of the domestic baby & mom websites emphasize on functionality and knowledge, especially the nurturing knowledge. Websites or services aimed at mothers are not sufficient. On the other hand, foreign baby & mom websites cover a wide variety of contents and are knowledgeable and entertaining. Contents aimed at mothers are plentiful and interesting, emphasizing the independence of females as mothers. There are several future trends of online shopping found in the current innovative online service system: a. making users to consume with no strong intention and promoting impulsive consumption b. in the case of practical needs, reducing the decision-making cost by users, competing to be shopping aides and striving for being the upper stream of the industry chain; c. combining online and offline business and converting complex offline business to online; d. focusing on service experience to gain good feedbacks with no efforts spared; e. encouraging users to generate information including comments and experience with an aim to influence other users; f. creating all kinds of attraction modes to win the visits, including daily sign-in and so forth.

At the stage of the quantitative research, a conclusion of fixed online model process and time of mothers is obtained through the data analysis of online sales of diapers produced by the daily chemicals company and a great many researches about mothers' online shopping.

Based on the research about second-hand information and thinking sorted through quantitative research, the thesis has conducted an in-depth research and qualitative analysis to understand their deep-rooted needs. Firstly the specific conditions and condition distribution of interviewees are determined, and interviewees shall be strictly recruited according to the conditions. Then the discussion outline is

developed, detailing the long-time interviews on several aspects such as female characteristics, pregnancy process, daily life process, observation of family situation, selection of products, brand and retailers, online activities and shopping journey. The following conclusions are deducted through the analysis of the information obtained above: 1. Role conflict of urban young mothers, including conflict between the social and mother role, conflict between self and mother role as well as the conflict between traditional and modern mother role; 2. Mothers in groups, similar experiences will bond mothers together to form a self-recommendation and product-assessment system, behind which is the trust built through constant sharing of products and knowledge. 3. Online mothers, mothers are experts in using all kinds of online platforms to do the daily shopping and browsing, while the shopping experience has transformed from the intentional searching shopping to intentional experience shopping and aimless incentive shopping; shopping abroad has become a trend among mothers, who are adept at purchasing products from abroad; mothers wish to enjoy the convenience of online shopping as well as safety and sense of reality from offline shopping; however, none of the highly efficient and trouble-free shopping experience may help them save time and energy. 4. Queen suffering ten months' pain harvests a life-time hardship. Getting pregnant provides mothers with an opportunity to improve themselves as being taken good care of, as a result they may satisfy their needs as possible. 5. Mothers devoted all their time to the baby, work, family and themselves with quite different behaviors and habits for each time period. 6. Timely pregnancy information is desired and products used are highly exceptional at pregnancy, therefore meticulous assortment and time accuracy is required.

After the overall research, several models to describe user's online experience are set up, including: 1. Four different online models: browsers, learners, impulsive customers and planned customers; 2. Online shopping journey, i.e. the whole shopping journey experienced in the four online models; 3. Attention inverted pyramid, attention decrease model of user online shopping; 4. Sensory region segmentation about service experience and the revolution within coordinates desirable for the service system; 5. Online shopping experience models, including several ideal shopping experiences covering guide me, inspire me, ensure me and simplify for me as well as improve me.

On the basis of research and models, the design practice is followed. The first is the generation of first-round brand core value and online shopping experience concept.

In the first round five brand values and ten online shopping experiences are generated. After the prototype production and second-round in-depth user research, i.e. the focus group test, a relatively comprehensive and unified idea is developed.

The ultimate brand core value is positioned as "take care of myself for the treasure baby", reflecting the mentality of contemporary mothers who wish to rediscover themselves as well as the sense of responsibility of mothers. It is a balanced status all mothers intend to achieve. In aspect of the ultimate concept, the thesis adopts "list and comment-based" social shopping experience and applies lists to consolidate the products in the story-based form, which reduces a part of the complex work mothers have to complete. In the meantime a safe shopping environment has been created to form the shopping habits according to the lists and comments. Online and offline shopping approaches are combined and the system is available through all-directional and multi-contact points.

The thesis has transformed the concept into a feasible service system with the product service system design theories as the framework. The system is divided into three categories: online, offline and mobile, including six contact points: PLMM shopping sites, PLMM social websites, PLMM browser button, PLMM mobile App, partners and shopping cards. Users upload lists in a simple and convenient way through websites, mobile App and automatic recording of shopping cards. Product comments and backgrounds of other users can be easily searched through websites and App. As such, mothers can conveniently choose the suitable products according to their current stage without concerning about the safety of the online shopping. This process is covered by several contact points and is easy to use with clear instructions. The thesis also collects the stakeholders mentioned above in the end, exploring what the system can provide for the stakeholders, their financial, material and information flow as well as specific business model.

In completing the project, I have several outlooks for the future of the system:

During the project, one thing that can be predicted now is that some malicious publicity or ill-intentioned retailers deliberately upload ads are unavoidable. In this case, executers should set up a system to prevent malicious attacks or small ads distribution, such as key words to sort out station information or professional ticket-brushing account. The second is about how to inspire mothers to more effectively participate in adding lists and comments. Based on the current system, there are already many methods to inspire mothers to upload lists and comments, such

as accumulating points for free diapers and themed activities by uploading lists. However, publicity of outside sites and organization of offline activities are also of vital importance, which requires good executive competency of the executers.

In a word, this system is designed to provide a safe service system that saves time and energy while striving for a balanced life.

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LIST OF FIGURES