國 立 交 通 大 學

應 用 藝 術 研 究 所

碩 士 論 文

創新服務的共設計方法研究

Co-Design Method for Service Innovation

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中 華 民 國 九 十 九 年 十 月

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碩 士 論 文

A Thesis

Submitted to Institute of Applied Arts

College of Humanities and Social Science

National Chiao Tung University

in Partial Fulfillment of the Requirements

For the Degree of Master of Arts in Design

October 2010

Hsinchu, Taiwan, Republic of China

中 華 民 國 九 十 九 年 十 月

中文摘要

服務無所不在的存在生活中，當使用網路銀行，購買高鐵車票，在星巴克喝咖啡，服務平台與系統正以各式各樣的互動方式支援著人們的各種生活需求。隨著數位時代的來臨，科技的進步賦予了服務業新使命，也開始顛覆人們對服務的想像，因為各種科技的應用，使取得服務的方式變得更多元也更複雜，人們有了更多的機會去選擇真正能滿足需求的服務，而服務創新的契機就在於掌握人們的使用目標，並且考量使用者的使用經驗。

本研究期望透過一套共設計方法的建立，幫助設計師在設計過程中，可以更了解使用者真正的需求。同時，將對於使用者與設計師在進行共設計時所遇到的困難進行理解，並進一步探索方法的設計。研究的工作主要分為三階段進行，在初步探索的階段，著重於目前共設計方法應用的問題，並嘗試提出解決方案。接著，第二階段執行所提出的解決方式，並測試與分析所提出方法的優缺點。經過測試與改良後，定案階段整理出一個應用於創新服務的共設計方法，*U-Service*。

U-Service 的內容為共設計方法的實施指南，提供設計師與使用者合作服務設計的做法。透過有效實行*U-Service*三階段的方法(準備階段，設計工作坊階段，結果整理階段)，與激發想像力的設計工具應用，設計師與使用者在工作坊中，直接的交流意見，互相了解不同的想法，而良好的溝通方式也帶來了更好的設計品質。

此研究致力於方法的探索與研發，期望為現今的服務設計師，設計一個能夠有效取得使用者潛在需求的方法。本論文完整呈現方法研發過程，詳細說明實施方法的步驟，並且提供方法應用的設計案例說明。

關鍵字: 服務設計、共設計、設計方法、使用者導向創新

ABSTRACT

Technological developments have a profound influence on people's lives, and introduce the prospect of diverse new service developed to provide users with a higher quality of life. Unfortunately, a number of technologies remain new to most users, and services that adopt these high-end technologies often confused users or make them uneasy. These services are meant to help people to accomplish their goals, but it doesn't necessarily turn out the way they expected. To create services that fulfill the needs of users, designers must listen to those needs, and take those needs into consideration.

This study aims to develop a co-design method, enabling designers to uncover the inner demands of users. n addition, we unravel the difficulties faced by designers and users in the co-design process, and explore methods for developing processes. In addition, we establish U-Service, a method for implementing co-design based on the theory and methods of participatory design.

The three main stages of this study are developed through the process of experimentation. First, the exploration stage focuses on the difficulties involved in co-design. Next, we propose an initial method to overcome these difficulties, and test it for further modification in the second stage. Finally, we propose our *U-Service* in the finalization stage.

U-Service is a method for guiding the implementation of co-design for the development of ideas inspired by user insight. The entire process comprises three stages. Through this three-stage (preparation, workshop, and organization) procedure, a better understanding is developed, and trust between the designer and user is established. As a result, a better design outcome can be achieved. This study is dedicated to developing a co-design method for service designers today and the proposed *U-Service method* is explained in detail. In addition, an illustrative case study is also provided.

Keywords: co-design, service design, methodology, user-driven innovation

致謝

兩年多的研究所生活就要告一段落了，從當初入學時，對於設計的一知半解，時而靠運氣，時而靠靈感，時而腦筋一片空白，百思不得其解；一直到入學後，老師提及「專業的設計師是有方法的」。起初，對於設計方法感到排斥的我，在經過兩年的「誤會澄清」後，開始對於設計方法有所改觀，而後來竟變成了論文的主題。這一切的轉變，都不是入學前預料得到的，但這些轉變都是很美好的驚喜。感謝在應藝所的日子裡，看似沉悶的理論都會在這裡轉化為有趣的知識。

感謝我的指導教授，鄧老師，在兩年多的時間裡，給我許多的機會，跳脫原有的舒適圈，嘗試不同的挑戰，去發現自己可能可以做的事情，在勵志與歡樂的氣氛中學習。除了知識上的啟發，老師對於生活的看法，或是新鮮事的分享，都能引導我從打結的思緒裡，找到拆解的方向。

謝謝埔里單車案所有參與人的大力協助，幫助了各場工作坊順利進行，也謝謝曾經參與過工作坊的每個人。謝謝媲美知識+，給予許多疑難解答的神人放克腳，謝謝超貼心的雨虹大大、超聰明的聰明王育婕、影片大師承捷、強者如薇，與想像無限的風鈴。

謝謝我最愛的家人，開朗的媽媽、認真的爸爸，與搞笑的弟弟，在我寫得慢吞吞的時候，適時的提醒我該加快腳步，幫助我擺脫當局者「迷惘」的困境。謝謝小軒忍耐我寫論文時，宅女般的行徑。謝謝一直關心我的姑姑們，還有陪我一起喜怒哀樂的室友們，婉婷與彭彭。

論文寫到了這篇謝誌，算是要畫下句點了，最後，也是最重要的，謝謝口試老師，莊老師與簡老師，給這篇論文許多的建議與指導。也謝謝學姊采芳與鈺喬的英文大搶救。

謝謝這些美好的遇見!

菁妏 2010.11.22

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Chapter 1

Introduction

Currently, ubiquitous service provides a higher quality of life. However, some services do not meet the expectations of users. To create a service that can satisfy the needs of users, designers should listen to their hearts when considering their opinions. This study is devoted to developing a service design methodology that helps designers to understand the inner demands of users.

1.1 Background

Service is highly common in our daily life, such as with online banking and online ticket booking. Due to the progress of technology, the ways to receive service have become more diverse. While customers have more choices to obtain service, the experience of using service becomes paramount. Many studies have indicated that the turning point of service innovation comes from realizing the goals and expectations of users (IDEO 2008, Chris 2009).

The service design

Shostack (1982) proposed that service design is the integrated design of tangible products and intangible services. “Service design is the design of intangible experiences that reach people through many different touch-points, and that happen over time.”(Live| work) When planning a way for providing service, designers should listen to users and facilitate users to have great using experiences.

Currently, the progress of technology brightens the prospects of the service industry. Increasingly diverse service has developed to provide users with a higher quality of life; however, this is sometimes a result of expectation, especially when the users are not familiar or have difficulties in using service. Therefore, service

must help people accomplish their goals, but this may eventually cause more confusion.

To create a service that can satisfy the needs of users, some service companies are dedicated to exploring user viewpoints, and adopt the co-design method as a key technique for innovating service (live|work, engine, IDEO). Eric (2001) also suggested that using a co-design toolkit could help users express their real demands.

Designer's role

In recent years, design has played a vital role in the experience economy and user-driven innovation (Palsbro, 2008). The problems designers must solve are more complex than before. To overcome these challenges, Parker (2006) stated that designers of the next generation would become management consultants with graphic skills. That is, designers should not only handle original design issues, but also be concerned about service.

Additionally, designers are considered the once have ability to understand people Designers acquire the strength required to produce innovative ideas from understanding the demands of people.

Co-design with customers

Co-design originated from the participatory approach that has been led by Northern Europeans since the 1970s. The method helps designers and users produce design results by working together.

A growing number of studies have discussed the issue about co-designing with customers. Sanders and Stappers indicated that the approach to co-designing changes the roles of designers and users to facilitators and collaborative designers (2007). When accepting users as co-designers, designers need appropriate methods and tools for involving them, such as creating an inspiring space (Lucero & Vaajakallio, 2009), co-designing activities in an artificial environment (Kirsikka, 2008), and facilitating collaboration through design games (Brandt, 2008). These are ways to facilitate communication, explore the ' needs of users, and develop leading ideas.

1.2 Motivations

When co-designing service, there are difficulties arise, such as the communication between members from different backgrounds and the service concept being troublesome to present. Describing initial service concepts is difficult for designers. Also, expressing ideas and real needs clearly is challenging for users. The results of co-design should meet the needs of users, but sometimes designers fail to do so because of inappropriate methods.

Additionally, planning a co-design workshop is sometimes more complex than the act of designing itself. Numerous concerns must be considered when conducting a workshop, such as facilitating collaboration and guiding participants to generate ideas. Therefore, this study expects to learn more about the co-design method and to create such a method for service design.

Therefore, the proposed method was developed to help designers propose ideas that satisfy user demands. Also, the appropriate manner of conducting a co-design workshop is explored further.

1.3 Issues

In a co-design workshop, users are expected to provide insight from life experience and the designers are responsible for generating ideas. To maximize use of user ability, the method should be designed to help users collaborate effectively. Three related issues are presented as follows.

The way to improve communication

First, this issue is about how to encourage people to exchange ideas with each other. That is, finding a way to help users express needs and help designers introduce ideas.

The inspiring tools

The inspiring tool plays an important role in a design workshop, because it encourages participants to have more imagination. Moreover, the intangible service is not easy to imagine in the early design stage, so this study was conducted to determine what tools help participants generate service ideas.

The ways to deliver service concepts

To extend design ideas further, the context of ideas should be presented clearly. This issue focuses on how to assist workshop participants in delivering the context of service design concepts clearly.

1.4 Objectives

The basic idea of this study is to develop a method that helps designers to design service with users. The three main objectives are provided below.

Find out the difficulties in co-design

To learn about problems that could happen in co-design, the collaborative condition of the design members was observed. Members with different backgrounds may have different difficulties in co-design; therefore, this point of view should be considered.

Create a method of implementing co-design

This study explores an appropriate method for implementing co-design and expects to implement improved design quality. Moreover, to apply co-design easily, the proposed method must be presented with steps and guidelines.

Explore the way of developing a method

This study expects to provide an example for developing a method through presenting the entire process with accompanying reasons. In this way, the in-depth discussion on how to design a method and what should be noticed is provided.

1.5 Scope

This study aims to improve the service design quality by co-designing with customers. The service should meet the needs of users first and encourage them to continue using. Although the service design should also consider marketing cooperation or stakeholder's demands, determining the potential needs of customers is of greater value to service innovation. The scope of this study focuses on improving service.

Additionally, this study seeks an example of a service design case to develop the method. In the process, the design team aims to design workshops with customers and apply the method to generate service concepts.

1.6 Outline of thesis

To provide an overall view, this chapter introduces the backgrounds, objectives, related issues, and the scope of this thesis. The comprehensive literature is then reviewed in Chapter 2, which includes theories of co-design and service design. Chapter 3 presents the process of this study in detail and explains each research task, such as conducting workshops, interviewing, and analyzing data. After that, Chapter 4 discusses results of the study and reviews the process. The final production of this study, the co-design method U-Service, is presented in Chapter 5. The U-Service is introduced by explaining how to use and what should be noticed. An example of implementing U-Service is also provided. Finally, Chapter 6 concludes study results and reviews mistakes of the study process. Recommendations for further work are also provided.

Chapter 2

Literature Review

The related works of our study are organized in this chapter. First, the co-design studies are divided into three aspects to review. The second session introduces the notion of innovating services. Finally, the studies of design methodology are reviewed.

2.1 Co-design

The co-design method originated from the participatory approach that led by Northern Europeans, since the 1970s. It's the method that produces the design results through the collaboration between users, stakeholders, and designers. Sanders and Stappers (2007) point that, the co-design method is different from user-centered design method, which is seeing users as co-designers not just the subjects that be observed by researchers. Moreover, the rising design categories are more complexity than before and concern the experiences of using, such as the service design and interaction design. The design activities are changed from designing of products into designing for people's purposes. (Sanders and Stappers 2008) And, the design method should more concern to the future users of what they design. Thus, the increasingly method researches are dedicated to deeply knowing users goals and desires through co-design with them.

2.1.1 Co-design session

Sanders and Stappers (2007) proposed that the new landscape of design research has become co-designing with users and it changes the roles of designers and users to facilitators and collaborative designers. (Sanders & Stappers 2007) Therefore, it's important for designers to communicate with users and facilitate effective ideas by using appropriate methods and tools in the co-design sessions. (Vaajakallio, 2007) Lucero and Vaajakallio (2009) proposed the inspiring co-design space that promotes participants be involved. (Lucero& Vaajakallio2009) Vaajakallio and Mattelmäki focus on an artificial environment that helps

participants have things to communicate. (Vaajakallio and Mattelmäki 2007) Brandt and Messeter (2004) developed a series of board games to inspire participants to produce ideas with each other. (Brandt and Messeter 2004) These paradigms of co-design sessions would be individual presented as following, including their background, methods for communications, collaborative insights, and the concept design games.

2.1.2 Communication

The precondition for using co-design method is in believed that all people are creative. However, the people with creativities of diverse domain and life experiences need to be integrated through appropriate tools and methods. The related studies that dedicated to develop methods and tools were emphasized on the communication between participants in the co-design workshops. "The dialogue-labs method"(Lucero 2009) provides the way that help participants to create dialogues through the appropriate tools, which is an inspiring space that full of visual and tangible design materials for designers to collaborate with users. There are seven communication tools for using, such as collage toolkit, video, and make tools, and participants could choose their preferred one to finish three-phase design exercises. Each co-design session had four participants form two pairs consisting of one designer and one end-user and its procedure is as the figure 2.1, that participants evaluated the effect of tools and design results in the end of co-design sessions. The research has pointed that it was important to have diverse materials and strategies to motivate participants to get started and to keep them on a creative mood throughout the session. (Lucero 2009)

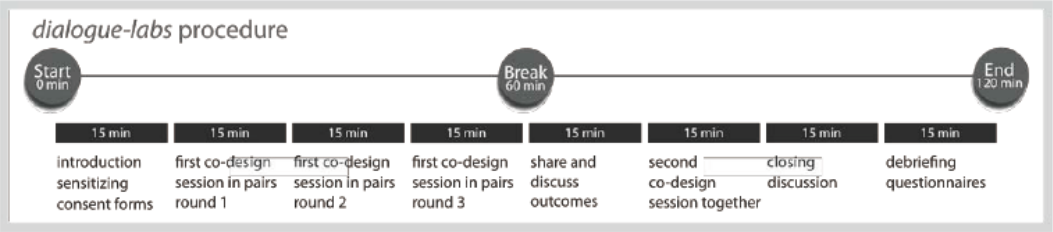


Figure 2. 1 the procedure of the “dialogue-labs” session

From “*Co-designing interactive spaces for and with designers: supporting mood-board making*. “A. Lucero, (2009). Unpublished PhD Thesis, Eindhoven University of Technology.

Vaajakallio (2007) proposed that the key issues of co-designing are rely on arranging the artificial environment, setting the design tasks and supplying design tools and materials. In their research, the design environment was divided into three areas that belong to each design activities and there were related materials such as magazines, postcards, work table and sketch tools put in areas. The actions, discussion contents and the move line of participants were observed by researchers to explore the effect of co-design methods. Especially, the author mention that although some researchers have suggested that the more ambiguous the tools, the more surprising design openings it provides, but after their research, the tools that help participants to present ideas which make sense should not provide for them a huge amount of either abstract tools or recognizable tools such as readymade figures. Additionally, the research figure out the evolving situation that two individual designers having their own parallel conversations in the beginning, then they start to do things at the same time sharing the same conversation while they getting familiar with the situation and later their actions become united and thus they work as one entity.

These two studies of co-design methods provide the paradigms for facilitating the communication through design tools and inspiring space. Also, they provide the research methodology to explore co-design methods by holding workshops and observing the evolving situation of participants.

2.1.3 Collaborative insight

The co-design method is seeing user as the expert of their life experience and become the co-designer in the design process. In order to fit this role, users should be given appropriate tools to express their context of life. (Roberta Tassi2008) Designers and researchers have developed methods in context mapping and should use the techniques to get the user experiences of diverse aspects such as discovering user needs through contextual inquiry, observing the actions of the user, and using co-design method to create innovative products or service with user. (Visser, 2005) Because knowing these techniques and tools, designers have more opportunities to innovate service. (Samalionis, 2009)

According to Visser (2005), there was a method structure be built to conducted a study of context mapping and it typically involves a sequence of research steps,

including preparation, sensitizing participants, group sessions, analysis and communication. The study of context mapping could begin with the preparations such as setting up the study involves the formulation of goals, planning, selecting participants, choosing techniques, and so on. Sensitizing participants mean to prepare them for group sessions by encouraging and motivating them to think, reflect, and explore aspects of their personal context in their own time and environment. In third stage, the session is a meeting in which participants do generative exercises that researchers or facilitators could explore their context and unexpected directions through it. The design results and data collected in the sessions were continuously analyzed and discussed in last stages. (Visser 2005) The authors illustrated the procedure of a context mapping study as figure 2.2.

Figure 2. 2 the procedure of a context mapping study

From "Contextmapping: experiences from practice." by F. S. Visser, P. J. Stappers, R.van der Lugt, & E. B. Sanders, -N. (2005). *CoDesign: International Journal of CoCreation in Design and the Arts*, 1(2), 119 - 149.

In the stages of preparation and sensitization, the probe approach was used similar to preparation works that facilitate users to express their creativity in later participatory sessions. The probe is the increasing approach of exploring user context through interesting ways of recording life. It promote users to become positive to get involved in design process and invite them to express the experience, mood and personal attitude through the workbooks, which might contain the diary, open-end questionnaire, tasks of sketching, making collages, or taking pictures and so on. Mattelmäki(2005) pointed that the probe approach could apply not only to be the inspiring notes but also the collaborative insights. It was used through the empathy probe process that begins with designing the workbooks, and then recruiting users for taking life records. After that, user was invited to interview for understanding the context and ideas in their records and involved in co-design workshops. The authors illustrated the empathy probe process as figure 2.3.

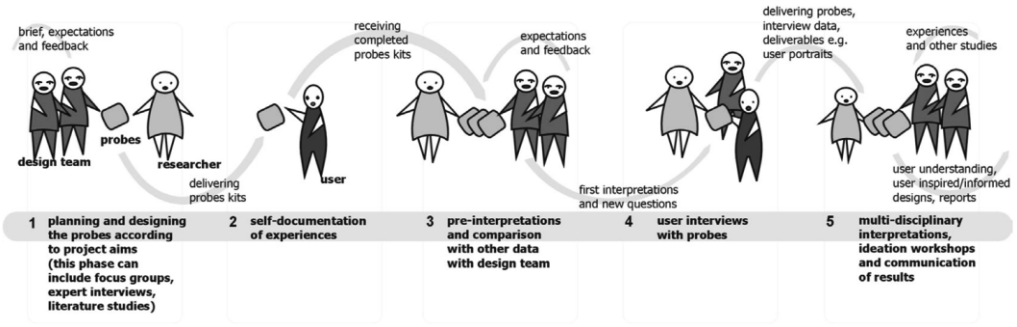


Figure 2. 3 the empathy probe process

From "Applying probes – from inspirational notes to collaborative insights. " by T. Mattelmäki, (2005). *CoDesign: International Journal of CoCreation in Design and the Arts*, 1(2), 83 - 102.

The author mentions that "the probes data opens fresh and holistic perspectives and vivid information on individuals and their contexts. However, the data may be too ambiguous and fragmented with too broad a focus to be used for concrete design decision-making in companies." (Mattelmäki 2005) So, using probe approach to sensitize and prepare participants should be together with other methods for collecting completely data for the design decision. The Active@work (Vaajakallio 2007) presents a series of make tools that help to explore user context in the session stages. It helps users to bring up their real needs or expectations by making prototypes and imaging the situation of using new products.

These studies provide the paradigms for exploring users' insight and context, such as the probe approach, the frameworks of context mapping studies, and the make tools.

2.1.4 Concept design games

The concept design games were proposed by N. John Habraken (1987) and originally applied in architecture design and urban planning, which explore the process of design thinking by observing the actions of designers in playing design games. Brandt and Messeter (2004) emphasize that concept design games are different to the games which have win and lose, it not consider the competition between players, but focus on facilitating the ideas generation. According to Brandt and Messeter's research, they presents a set of four design games to facilitate collaboration, improves idea generation and communication between participants.

2.1.5 Summary

The paradigms of co-design method above are categorized into two major types: one is devoted to improve the communication by developing tools or creating an inspiring lab that helps participants express ideas. The other one focus on exploring the user context, such as using probe approach, makes tools that applied to get user insight. Both of them have same concept that visual, tangible artifact and tools could effective support participants to communicate ideas or express experience. However, it still need some adjustment to use in intangible service design, because the studies gather here are mostly applied in designing products.

From this session, we can see the ways about how to get user insight and how to communicate with them through the co-design session. And we hope to combine the advantages of both and design the method that help designers and users to easily prototype and discuss their service ideas.

2.2 Service design

What is service design? To take mobile phone property for an example, it was originally the communication product but became to have complexity system after supplying service. However, while the various service functions that due to the commercial considerations and technology combination without considering the experience of using, it would make using new service functions like training people to get services that even not really fit their needs. Service design is not intended to increase consuming but make people use it continuously.(LIVE|WORK) Thus, the key of promoting service values is not to develop various service functions and items but consider people. The service design could be understood as an experience design by having empathy for user, and the good service should always put people's needs and expectations first. (IDEO)

2.2.1 Characteristics

Shostack (1982) has pointed out that service design is the integrated design of tangible products and intangible services (Shostack 1982). And the company, LIVE|WORK introduced that, "Service design is a method for designing experiences that reach people through many different touch-points, and that happen over time."(LIVE|WORK) Unlike products, service come to existence at the same moment they are being provided and used.(Eiglier 1977; Normann 2000; Morelli

2002) in conclusion, service design focus on organizing the tangible and intangible elements and constructing the system which allow each particular people to have good service experience. To achieve this goal, the service design can be seen as an experience design (LIVE|WORK) and concern the value, system, journeys, peoples and propositions. It helps to have useful questions and tools with which to design (Engine)

2.2.2 User driven innovation

Because the user is goal-directed, good service should allow people to accomplish their goals than just complete tasks. (Chris, 2009) On the other hand, with the increasing of technology, people have chance to get service through their own way instead of completing tasks which might not satisfy their needs.(IDEO) So, to improve the service that fit requirement, it should put people first and figure out their using goal and intentions. (Chris, 2009)

However, it's not easy to predict user's goal because there are quite different using needs and expectations of each particular user. Moreover, some users might used to current service products and have no expectation of new one, even if the current one is not appropriate for them.(Leonard) That is, to understand the real need would base on making people figure out the problems and express it.

Samalionis(2003) point that, the demand of customers are more than ever before, but some traditional market research are no longer to deal with. The research is unable to tell anything new which just regurgitates the past marketing campaign but without articulating what people need. To get more understanding of user need, the author is in favors of using empathic human factors research techniques as an integral component of every project. From this, it helps to get insight of customers and clarify the real needs of each role in the service ecologies. Similarly, Parker (2006) proposed that service design should start with understanding people's life instead of consider the system organization. That is, to figure out what people need and how people use service can make designer to find new aspect of innovation.

Besides, there's different way to explore the innovative ideas of service. According to Hippel and Katz (2002), they try to translate the design ability to user and facilitate them to explore their real need and express ideas. To help user design the

products or service for their own, the user friendly design toolkits are created by authors. They mention that user friendly toolkits aim to make user have chance to try and error, then learn by doing, and explore their real expatiation by designing it.

2.2.3 Summary

After reviewing the literature of service design, we can find that the key of promoting service values is always considering people. From the observation of service property, it became complexity with the increasing technology which allows customers have more demands than before. And in order to maintain the service quality, the responsibility of design includes understanding people's need and satisfying their diverse requirement. It should be supported people's life and provide great experience instead of asking them to get the job done. That's why service design is more than just design system.

For improving service quality, there were many studies try to define what is service design and how to design. According to the results of studies, we learn that service design seems like to integrate tangible products and intangible services (Shostack), to create the best value for customers and providers(Engine) and come to existence only at the same moment they are being used (Eiglier 1977; Normann 2000; Morelli 2002) It's a challenge for designers to deal with these new elements, but it's also a good moment for us to explore the methods for solving and thinking service design.

2.3 Methodology

First, the design methodology is reviewed. Then the studies that focus on service design methodology are organized. In the end of this session, the method paradigms for designing service are gathered.

2.3.1 Design methodology

According to Jones (1992), the design methodologies are divided into six categories (see table) which include methods of controlling strategy, methods of exploring design situation, methods of searching ideas, methods of exploring problems and methods of evaluation. (Jones 1992) The methodologies are provided to solve design problems with different purposes.

Table 2. 1 The six categories of design methods.

CATEGORIES	PURPOSE	METHODS
1	Strategies prefabrication	Systematic search, Value analysis
2	Strategies control	Strategy switching
3	Exploration of design situations	Interviewing users, Questionnaires
4	Ideas search	Brainstorming, Synectics,
5	Problems exploration	Interaction matrix, system transformation
6	Evaluation	Selecting criteria, Specification writing

Base on above categories of design methods, this study would focus on developing the method for exploring situations and searching ideas.

2.3.2 Service Design methodology

"Services need to be understood as a journey or a cycle – a series of critical encounters that take place over time and across channels." (Parker 2006) While describing and organizing a service, the framework of a customer journey is helpful to think the experience of a service (Samalionis 2003) And, according to the book "journey to the interface "(Parker 2006), the language of service are organized with definition. The definitions of touchpoints and service journey are as following.

1. Touchpoints

Touchpoints refers to diverse channels that customer can get the service. It seems like the physical elements of a service system. "Touchpoint is everything that a person accessing the service sees, hears, touches, smells and interacts with."

2. Service journey

The journey refers to the process for customer getting service. They might interact with numbers of touchpoints in a service journey. "Tracing the person's journey enables service providers to reflect on the effectiveness and appropriateness of each intervention."

For improving the design quality, there are related techniques proposed by Design Council (2009), which are the service designer works with.

1. Observe the situation
2. Involve user
3. Create a blueprint
4. Analysis the quality of service
5. Evaluate the ideas
6. Prototype a new service.
7. Test

According to Morelli (2006), the overviews of the methodologies for designing service are proposed. There're three main directions that include the method for identifying actors in the service system, defining the logical structure of the service and representing the service:

1. Identification of the actors

Identify the actors in the service environment, which might have customers and stakeholders. Also, use the appropriate method to figure out their requirements, such as observation techniques, culture probes.

2. Definition of possible service scenarios

The method that helps to describe the characteristics of the interaction in the service. The related tools include scenario and use case. Morelli point that, these methods of service design should concern tangible and intangible component of a service, time sequences and flows.

3. Representation of the service

The method that can clearly present all the components of a service, define the specific interaction process, and physical elements. The blueprint is an example for representing the service.

2.3.3 Paradigms

Service Touchpoint Cards

The case, AT-ONE Project (2009) that created a set of Service Touchpoint Cards for the Nordic Service Design conference, provides the useful methods to deliver service ideas by thinking collaborations of actors in the form of value network (AT-ONE 2009). The card set contains about 52 touchpoints examples that might

be found in a typical service. (See figure 2.4) And the cards are grouped into five categories: Media, Graphics, Servicescape, Communications, and Ephemera.

The first category refers to media outlets, such as TV, radio, newspaper or the latest social community like YouTube, Facebook, and Twitter. The next stands for graphic production, including business cards, brochures, and advertising. The servicescape refers to the environment of the service, such as wayfinding, call-centre or building. The communications category contains the channels that people get in touch with others, such as smart phone, e-mail, SMS and the person who deliver information are also included, such as friends or family. Finally, the ephemera category refers to the objects of business that connect services together, such as receipts, bills, credit cards. This project provides a considerable way for inspiring designers to thinking service through actors' definition and card sorting.

Figure 2. 4 the touchpoints cards

From "AT-ONE Project" ,Service Innovation website, http://www.service-innovation.org/?p=411

Touchpoints matrix

Touchpoints matrix is the method that developed by Gianluca Brugnoli -teacher at Politecnico di Milano and designer at Frog Design. Roberta (2008) introduces this method that "this method merges the features of the customer journey and the features of the system maps and is based on the use of personas."

This method provides a visual framework for helping designers to plan the experience of using service. The first step is defining touchpoints that might be the component of the service system, and fill the ideas in the vertical axis form. Then, the actions that service system can support are listed in the horizontal axis form. After that, designers could clearly design several specific journeys that personas

might experience. Figure 2.5 illustrated this touchpoints matrix graphic.

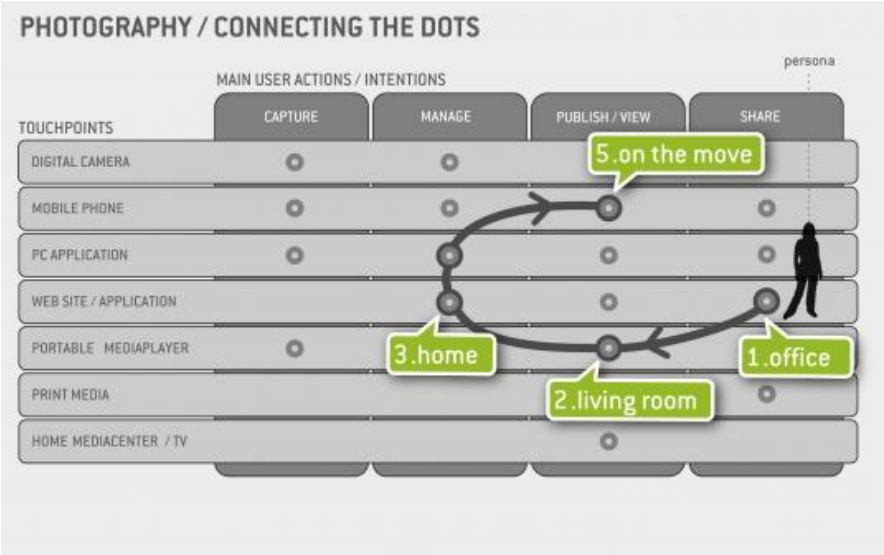


Figure 2. 5 The touchpoints matrix

From "Frog Design" by G. Brugnoli, http://www.brugnoli.net/

2.3.4 Summary

According to the six categories that Jones (1992) proposed, the design method of this study belongs to the method of searching for ideas or the method of exploring design situation. The method is expected to make designers create the innovative ideas which can meet the user's demand.

For helping designers and users can easily design the service, seeing service as a journey provide us a basic idea to plan the design method. The three directions of service design methodologies that Morelli (2006) proposed forms the initial framework of the method design. The elements of the proposed methodology would base on those directions, which include the method for defining the actors in service environment, the method for defining the possible service scenario.

Chapter 3

Methodology

This study aims to develop a co-design method that helps designer to reveal the users' inner demands. For a better understanding, the three-stage study procedure (exploration, testing and analysis, finalization) is designed. And through a series of research works, including literature review, framework draft, workshops, interview and data analysis, the U-Service method is formed and proposed. In this chapter, the process of the *U-Service* development would be explained in detail.

3.1 Procedures of the study

At the outset of this study, a comprehensive literature review was conducted. And an initial framework of the U-Service method was drafted. Then the framework was implemented and tested in a series of workshops for a bicycle touring service. After that, the participants were interviewed to further understand the usability of U-Service method. Finally, the data collected from these workshops and interviews were analyzed to modify and finalize the proposed method. The process for developing the U-Service method is shown in the figure 3.1.

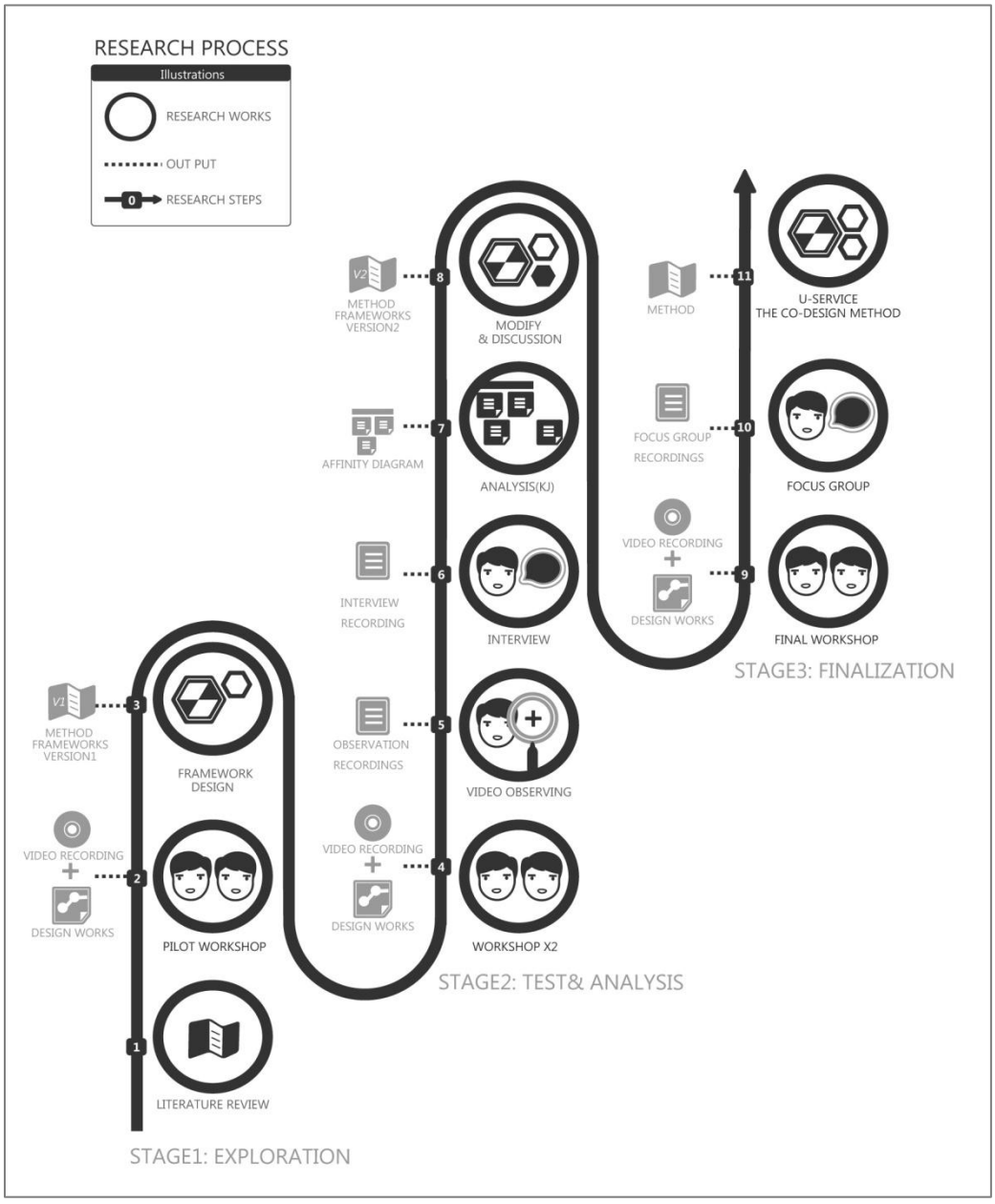


Figure 3. 1 The process of the U-Service Method development

3.2 First Stage: Exploration

To gain the understanding of method development and clarify its directions, the related works, such as the co-design session (Brandt and Messeter 2004, Vaajakallio 2007, Lucero and Vaajakallio 2009), communication tools (Lucero 2009, Vaajakallio 2007) and service method design (Morelli 2002, 2006) were reviewed. And an exploratory workshop was applied.

3.2.1 Pilot workshop

In this exploratory stage, the intention of the pilot workshop does not consist in evaluating the draft method is effective or not, but in figuring out needs and problems that participants may met, and then organizing the possible answers.

To get closer to the truth, the workshop goes through a real design project and makes users and designers involved. It takes about two hours for workshop participants accomplishing design tasks collaboratively. And each participant was given the same design tools for observing if there is different performance between them or not. (To compare designers and the person without design background) From this way, we try to find the possible different requirements of method using.

The workshop was mainly divided into three stages from user experience sharing, ideas co-expanding to design results delivering. And in the end of the workshop, we have a discussion with participants to talk about their experience and comments of method using. Finally, the guide for developing frameworks of U-Service method was provided from this result. Table 3.1 presents the process of pilot workshop and the figure 3.2 shows the situation in workshop.

After this workshop practicing and reviewing, there are two obvious problems being found as below:

The first one is that inspiring tools didn't work as our expectation. The inspiring tools was created to help users to recall the related experience but failed in facilitating user's imagination. Second, the task of designing service journey was misunderstood for participants. They seem to sequence different kinds of services in a daily process.

Table 3. 1 The procedure of the pilot workshop

PHASE	TIME(min)	GUIDE
Introduction	5	*Warm up and introduce participants*
Design Activity 1	30	*To figure out needs and chance.* This activity aims to make the user share his experience and explore the possible problems user was asked to draw a map with landmarks that related to his life. While drawing, there are hint cards for designers to explore user contexts and for users to recall the environment situations of landmarks
Design Activity 2	45	*To expand service ideas* According to user's life style and their living environment, participants were asked to think the possible items that service could supply
Design Activity 3	45	*To sequence the actions of using service* This activity is for presenting the experience of using service The work is to think a scenario that describes the ideal process for user to access service.
Discussion	15	*Review the design result and exchange ideas or opinions*

Figure 3. 2 The participants were co-designing the service in pilot workshop.

3.2.2 Initial method design

After conducting the literature review and the exploratory workshop, frameworks of the U-Service method was formed. It was designed base on the theory and methods of participatory design first and reformed according to the workshop results, which show the difficulties that participants might have in co-designing service. Finally, the clearer method framework was built from repeatedly practicing above steps and would be implemented and tested in the next stage.

3.3 Second Stage: Testing and Analysis

Because of the previous exploration, the framework of the U-Service method was formed and clarified. For a better understanding of its usability, it was implemented and tested in a series of workshops. Then, the video record of workshops was observed and the participant's interview was conducted to realize the potential problems and its causes. After that, data collections form workshops, observation and interview were analysis by KJ Method.

The intention of this stage is to test effects and figure out existed problems of the U-Service method. And the suggestions for modification are also provided.

3.3.1 Workshops

The workshop consists of three collaborative activities and participants were asked to complete them for generating innovative concepts. The first step we worked is to prepare design material and propose the plan. Then, participants were recruited contain designers and customers balance. After that, design activities were conducted and the observer was involved for taking notes. In the meantime, whole process was video recorded for later coding and analysis. Through running workshop activities, the framework of U-Service method was implemented and tested.

Preparation

To facilitate the design workshop and generate effective results, we spend time in preparation for setting up a space for co-design activity, and making material. Then produce a workshop plan that guides each design activity to working successfully.

In each workshop, the bright, clean and comfortable discussion space was selected to be a design lab. It's decorated with wide desktop for sketching, the projector for

ideas presenting, and the video equipment for recording design process. The inspiring materials are also prepared, such as magazine, pictures, stickers. Additionally, music and snacks are helpful to facilitate participants having high involvement. Besides, the brief introduction of design subjects and the guide of each activity are arranged to a presentation slide.

Participants recruiting

Participants for these workshops are selected balance including designers and customers (without design background). The customer participants were recruited through BBS information post or friends, and the designer participants are mostly members of the simultaneous design project. They are invited to join the inspiring design activities. Figure 3.3 lists the criteria of participants recruiting.

Figure 3. 3 The criteria of recruiting participants

Besides, to lead design activities going and to record the process, there are the moderator and the observer in workshops. The numbers of participants are about four to six person in workshop, and the composition of them is listed in Table 3.2.

Table 3. 2 The composition of the workshop members

PARTICIPANTS		AGE	GENDER	BACKGROUND	EXPERIENCE
	User	20	Male		
	Designer	24	Female	------ Pilot Workshop ------	
Workshop1	A	21	Male	Tour Guide	Lead Tour Groups
	B	27	Male	Electrical Engineering	Travel
	C	25	Female	industrial & user interface design	------
	D	26	Male	industrial design	------
	E	24	Female	industrial design	------
Workshop2	F	24	Female	Materials Engineering	Independent Travel
	G	25	Male	Materials Engineering	Cycling Tour
	H	27	Female	User interface & Visual communication design	------
	I	26	Male	Industrial & user interface design	------
	J	24	Female	Industrial design	------
Workshop3	K	24	Female	Computer Science	Travel & Photography
	L	25	Male	Computer Science	Cycling Tour
	M	24	Female	industrial design	------
	N	24	Female	industrial design	------
	O	24	Female	industrial design	------

Workshop Process

There are three main activities in a co-design workshop and it takes about two hours. Table 3.3 shows the timetable and guides of design activities. The following session would introduce each stage of the workshop with details.

Table 3. 3 The timetable of the workshop

PHASE	TIME(min)	GUIDE
Introduction	5	Warm up and introduce participants
	10	Present the design subject.
Design Activity 1		Guide participants to co-design the moodboard step by step such like:
	5	*"choose ten pictures which stand for your insight."*
	5	*"introduce the reason for choosing pictures."*
	10	*"Put similar pictures together with other participants."*
	5	*"Use those pictures to build the collage which make sence for all of you."*
	5	*"Present insignt concensus and discuss the design guideline."*
Design Activity 2		Guide participants to build the sequence of service such like:
	5	*"Set the goal that you may like to achieve through service ."*
	10	*"How would you achieve the goal ? design a scenario to show it "*
	10	*"Re-sequence the scene for thinking better context."*
	5	*"Present final design scenarios and discuss it."*
Design Activity 3		Guide participants to define the service components such like:
	10	*"Describe the leading roles in your design scenario "*
	10	*"what leading roles would be ? define it"*
	10	*"describe every roles' use context and map to scenario."*
Discussion	15	Review the design result and exchange ideas or opinions

- *Introductions (15 min.)*

  Before main design activities, there was the introduction to warm up and guide participants to gain an overall view of the design subject.

- *First Design activity: Concept exploration (30 min.)*

  In order to generate service that fulfills user's needs and takes users opinions into consideration. This activity was created to facilitate participants exchanging ideas with each other. The service concepts were first explored through the collaboration between designers and users. That is, each participant should express their subject related opinions or ideas and then discuss with others.(see figure 3.4) In the meantime, amount of pictures and collage tools were provided to inspire participants' imagination and help communication. The design production would have collages with stories.

Figure 3. 4 Participants were making a moodboard to present their ideas.

- *Second Design activity: Service journey (30 min.)*

  After concept exploring, the following activities are both dedicated to further specify the concept. In this design activity, service concept was expanded through the consideration of service journey. And the scene cards, which present the divers service moments were provided. Participants were asked to plan the service process and deliver a scenario with a series of scene cards.

It's similar to the comic strips that describe a story in sequence. The situation of this design activity is shown in figure 3.5

Figure 3. 5 The picture shows one participant was planning his service journey by sequencing scene cards.

- *Third Design activity: Service touchpoints (30 min.)*

This activity applied with same purpose of previous one, but further specifies the service concept through designing touchpoints. Participants were asked to think the touchpoints that supplying services, such as website, e-mail, intelligent mobile phone etc. The ideas like that should base on the service journey (which was designed in previous activity). They wrote down the ideas on the *Post-it*. (see as figure 3.6)Finally, participants told a story that contains the description of their touch-points ideas.

Figure 3. 6 The participant was looking at the description of each scene card and they wrote down the ideas of touchpoints.

- *Discussions (15 min.)*

  Same as the pilot workshop, to gain an understanding of their experience and opinions of each design activities, there's a discussion with participants in the end of the workshop. Also, the design results are discussed and organized.

3.3.2 Observation

The view of observations consisted of three main parts:

(1) The difficulties that come with co-designing service;

(2) The outcomes of inspiring tools used;

(3) The collaborations between participants, and their role in the team.

Besides, some behavior or phenomenon that beyond understanding in this step would further interprets by interview. The collected data from observation were analyzed to direct the further interpretation and modify the proposed method.

3.3.3 Interview

To further understand the usability of U-Service method, workshops participants were interviewed individually for inquiring their co-design experience.

Before inquiring, the interview script was framed to control the progress and directions. And the open-end questions were set to gain an understanding of

participants' mind, design context and their opinions. However, in process, the set questions would be a little bit adjusted depends. The interview questions are listed in six categories as Table 3.4.

Table 3. 4 The interview questions

INTERVIEW QUESTIONS
The comments of workshop
How did you feel about the design activities?
The collaboration process between participants:
Please describe the process of the teamwork.
How did you understand the ideas of others?
Explaining how you share the job.
The suggestions of design materials:
How did you feel about the design materials, did it work?
The expectations and self-in-role of participants:
What did you think your own role in the teamwork?
What's your expectation of workshops?
What did you think about the functions that method should have?
The understanding of design tasks:
Which task were you unsure of?
How did you finish each task?
The context of design process:
Please describe the steps of each design activities.
Explaining how you get ideas?

After workshops, participants (including designers and customers) were invited to a ninety minutes interview. It's a little difference between the inquiring with designers and customers. For designers, we are interested in their requests and expectation of the method. And for customers, we concern if the method is helpful to them in communication and imagination or not.

The interview was conducted through three steps, which includes discussing the design results, reviewing the video record and inquiring the design context. The interview environment and situations are as shown in figure 3.7. This work aims to make respondents describe their opinions or experience in more detail. And in order to call up their memory, the design production and video records of workshops were provided.

Figure 3. 7 The pictures show the interview situations and environment.

3.3.4 Data analysis

The analysis is consisted of two main parts: the benefit and difficulties of the method. The benefit of method applied is analyzed through comparing results from different workshops. And, to detail understand method user's context in workshop, the part of analysis are focus on their difficulties and expectations in process. Figure 3.8 illustrate the data analysis. After taking notes from workshops, observations and interview, the data was logically organized and grouped through affinity diagram. Since that, the problems and requirements are revealed with context and the improvements of the U-Service method are provided.

Figure 3. 8 Data analysis

3.4 Third Stage: Finalization

To develop a user driven co-design method, the whole study is dedicated to find a better way for inspiring and take user's insight in considerations. And, the U-Service method with its developing process is proposed here for an example but not the only answer. The final stage is conducted to conclude our study results for opening the discussion of further exploring.

3.4.1 Final workshop

The U-Service method was revised and finalized base on the results of previous testing and analysis. And it's implemented in workshop again for reconfirm.

The design spaces, equipment, inspiring tools are controlled as previous workshops and the rule of design activities were modified to improve the collaborations. There were four participants (designer and consumers balance) involved to practice the revised method. The timetable and guides of final workshop as shown in table 3.5.

Table 3. 5 Timetable of the final workshop

PHASE	TIME(min)	GUIDE
Introduction	5	Warm up and introduce participants
Design Activity 1	30	"Mood puzzle" The work of participants is to co-design the moodboards.
Focus Group	10	Discussion of the design acticity 1
Design Activity 2	20	"Journey story" This activity guides participants to design each key moment in the journey.
Focus Group	5	Discussion of the design acticity 2
Design Activity 1	20	"Touchpoints pattern" The work of participants is to co-design the touchpoints with context.
Focus Group	15	Discussion of the design acticity 3

3.4.2 Focus group

To in-depth understand the usability of proposed method and to guide the exploring, focus groups was conducted after each design activity in workshop. The participants were gathered to discuss about their collaborations, the difficulties in process, the understandings of the method and comments. From this way, it is efficiency to get a brief review of the method to help method further developing.

After above works, the method which named U-Service was proposed. Review this chapter, the methodology was presented through three sections. First, the section 3.2 explained the way to explore the difficulties in co-design and frame the draft method. Then we introduced how the draft method be implemented and tested in workshops. To further understand the effect of using method, the interview was conducted. Above works of test and analysis was shown in section 3.3. After that, the draft method was reconfirmed and modified through workshop and focus group. And it was explained in section3.4. After these study works, the results and findings would be presented in the next chapter. And the proposed method (U-Service) would be detailed introduced and discussed in chapter 5.

Chapter 4

Results

In this chapter, the results of analysis are presented and three topics which we were interested were chosen into discussion further. First, the process of developing a method is reviewed and the comparison of co-work condition in each workshop is discussed. In the end, the testing result of the U-Service method is provided.

4.1. A Method Development

During the process of the U-Service method development, the U-Service was modified efficiently by means of practicing the method. This session would introduce how to design a method and what to consider.

4.1.1 Reviews on Process

Reviewing our study, it's not only a method was created but also a manner for developing a method was explored. An example for designing a method was provided here. The following presents what we have learned from the method creating process.

The basic idea of this study is to create a way to help designers co-designing services with users. Thus, the workshops were held repeatedly for exploring the possible way. In the beginning, the methods we developed were usually failed to use. However, we learned how to design a better one by examining previous works and correcting the mistakes.

Afterwards, clearer ideas of the method were emerged. Meanwhile, the method was continually tested in the workshops. In the whole process, the participants' behavior of using method was observed, because we were curious about what kind of conditions may cause the problems. Then, the results of observing may help us to understand the reasons caused the method failed to use.

However, there were still some problems with this method, which we can't get the solutions from practicing the method. Therefore, we further interviewed the participants in addition to testing the method. Through the interviews, we could realize the real problems from users' description. Moreover, the data that collected from the interviews were analyzed to find out the defects of the method. After the previous analysis, the key points of modifying the problems were caught. Then the method for co-designing the service would be more appropriated.

In the whole process of developing the u-service method, we could directly feel the benefits and the damages of the method by practicing it continuously. To developing a co-design method, practicing the method and discussing with the participants are especially indispensable.

4.1.2 Consideration of designing a co-design method

The challenge we need to face while designing a co-design method is that we should make the method be useful by helping both designers and users. They would have quite different requirements during the co-design process. Additionally, we take the using stage into considerations because the goals of each stage might be different.

In this study, we are focused on developing a method that can help the co-work between designers and users. Moreover, we found that they had different requirement while co-designing a service. We expected that the method could help designers generate ideas and help users provide their opinions through designing service. Therefore, we tried to design the method which is easily to be used by both designers and users. Furthermore, their imagination should be inspired by means of the method. Finally, we tried to help designers and users easily organize their ideas by using the method.

The goals of different stage also need to be taken into consideration while the method was created for design projects. With the change of the goals, the purposes of the method may also be changed. The U-Service method is developed for helping generate concepts in the initial design stage. Therefore, we considered that the method should help people generate lots of ideas firstly. Secondly, it should help users to deliver concepts clearly. Besides, the U-Service was applied to a real design case to confirm its effect.

4.2. Workshops

There are four main workshops be hold in the process of this study. And, the co-work condition of each workshop was compared. There is some interesting phenomenon be found by observing the workshop's participants. The findings of the co-work condition would be introduced as below session. And, the effect of using inspiring tools is also provided.

4.2.1 Collaborations between Designers and Users

In this session, the co-work condition between designers and users are discussed. The key point of observation is concentrated on how participants work together and share the work.

In the beginning of a workshop, the participants are confused with their responsibility of the work. Originally, designers hope to gain new ideas from user because they seeing user as co-designers. However, the result is less than their expectation. In fact, users are good at describing the experience rather than proposing the ideas. Thus, designers and users start to share different parts of the work.

A designer seems like the facilitator in a co-work. They try to propose lots of ideas base on user's opinion. They help users to accomplish the design works. And also, they provide ideas to inspire other co-designer's imagination.

While making a collage of ideal service, designers and users is doing the same work but have quite different mind. Designers make a collage to display the process of providing a service (e.g. the process of renting a bicycle). And, users make a college to show their experience (e.g. one experience of cycling tour). This is showing that design results indeed contain user's opinion but it still needs change into design ideas.

Most of workshop participants glance at others' work before the conversation. They try to understand other's ideas through this way. Some design results provide an opportunity for them to start a discussion with others, such as the collages of their ideas. They open the communication by sharing ideas that they presented in a college.

4.2.2 Influence of Inspiring Tools

In the workshops, there were a series of pictures or magazines provided in order to help the participants have more ideas. And we create a series of inspiring tools for each design activity.

The contents of picture need to be carefully chosen. From the observation, we found that the participant's ideas were based on what they saw in the pictures. They felt that the pictures with whole background are better than the graphics only, because the picture with the specific object may limit their imaginations. Therefore, the better content is to present the situations, space or activities.

In the process of the study, we have experimented with two different types of inspiring tools. One is providing pictures that we have cut and the other is providing magazines. The design results of using magazines are better than using the cutting pictures. The participants of the workshop preferred to cut pictures from magazine by themselves because they can organize their ideas by doing this step.

4.3 Testing Results of the U-Service

The collected data from the workshops and the interviews were analyzed by doing Affinity Diagram. After that, the benefit, the difficulties and the improvements of the U-Service method were organized. They would be introduced in the following sections.

4.3.1 The Benefits

The benefits of the U-Service method were listed from the interviews and the results of the workshops. There were mainly tree benefits: One is to help participants organize their ideas. Another is to make designing service become easier. Still another is to help participants have efficient discussion.

Participants felt easy to organize their ideas because of the provided tools. The users designed the service for themselves that also stands for their real needs. The basic concept of inspiring tools is to make participants feel free to compose their ideas. The tools help participants to easily present their ideas, and they also help them to adjust ideas. For an example, participants could present a service journey by aligning the scene cards. Then, they could exchange the sequence of the scene cards to adjust ideas.

Besides, another consideration of designing a method was to make service be thought over simply. One useful way was to design the service journey. The way was chosen to make participants think the serving process as a journey. And the u-service was also created to guide them designing a serving process by sequencing scene cards. According to the interviews, the participants felt this kind of design work made them deliver design concepts clearly.

Last but not least, the other benefit is that designers could gain the feedback from users immediately. During the design process, it's very helpful to get users involved because designers should generate ideas that satisfy user's need. Therefore, the U-Service method makes designers to gain better ideas by designing with users directly.

4.3.2 The Difficulties

There were still some difficulties in the U-Service method. As the participants mentioned, no matter they are users or designers, they were not sure what they were responsible to do in co-working. They usually followed what others have done because they were confused about their role and responsibility. For example, some users tried to do the work as designers without designing specialty, so they got frustrated. And some designers generated ideas without considering users' need. This situation might cause worse design results than expectation.

In addition, the participants also felt confused with designing the touchpoints. They succeed in listing the objects that exist in the serving process but they are frustrated to define touchpoints. For example, they just wrote down the objects that may exist in the service, such as a counter, a smart phone, or a bicycle. However, they did not explain the design results with using context. The participants were not sure how detailed of the touchpoints they should define.

Is the user a co-designer or an experience expert? Most of time, we often were confused with this question when designing the activities. The current way is seeing users as the co-designers because they might have lots of ideas from their experiences. However, while users do the same works as designers, one phenomenon is that the sharing work of producing ideas is still not appropriate to users. User's ability of expressing experiences is better than proposing ideas.

Therefore, the u-service method need to be further improved to make users can do the jobs they are good at.

4.3.3 Improvements

To improve the difficulties that have mentioned above, the modification would be explained in this section.

First of all, an example for each design activity needs to be prepared because it helps participants know how to do. The example might present a design result or introduce the steps of accomplishments. This way could success in controlling the quality of implementing methods.

The previous works showed that the participants felt confused with defining touchpoints. Therefore, the paradigms of touchpoints were prepared to solve the problem. The touchpoints-cards are consisted of about fifty paradigms, which is common existed in a serving system. This tool is provided to help participants think what might be appropriated for them to create a new service.

Besides, all individual works are changed into co-work, such as making the collage. The change is conducted to make all design results can be produced through the communication. To prevent the participants get confused with their responsibility, the works are assigned in the beginning. Finally, the concepts they proposed are combined with users' opinions and designers' ideas. This way made the design results be more valuable to expand further.

Chapter 5

U-Service: The Co-Design Method

This chapter introduces *U-Service* and divides it into three phases. First, the overview of this methodology is presented through frameworks and brief steps. Second, the detailed account of method implementation is provided with examples. Third, the suggestion for conducting *U-Service* is proposed and comprehensive assessments are provided.

5.1 The U-Service method

The basic idea of *U-Service* is mainly to inspire innovative concepts by customers and designers co-designing activities. *U-Service* consists of three stages, namely, preparation, workshop, and organization as shown in Figure 5.1. The following session introduces each stages of the *U-Service* with examples.

Figure 5. 1 The suggested procedure of implementing U-Service method

5.1.1 First Stage: Preparations

To facilitate the design workshop and direct effective design results, it is worthy to spend time on preparation, such as recruiting participants, designing space setting, and designing materials. This section describes ways to prepare with the following examples.

Participant

Each workshop must recruit approximately four to six participants, including designers and customers equally. Additionally, to help finish design tasks and record the design process, the moderator and note taker participate in the

workshop. The customer should qualify the setting and persona of the design project, so criteria for recruiting are according to personal profiles. The role of customers in this workshop involves offering ideas or establishing expectations according to their life experience. Designers join this workshop as facilitators. Their job is to communicate with customers and provide various ideas based on expectations of the customers. Table 5.1 presents the components of workshop participants.

Table 5. 1The checklist of recruiting participants

Role	Numbers	Recruiting Criteria
 **Moderator**	1 Person	☐ Understand the goal of design project ☐ Be familiar with the workshop procedure ☐ Be able to facilitate workshop activities
 **Note Taker**	1 Person	☐ Help to document the decision making process
 **Co-designer** (Designers)	2~4 Person	☐ Have basic training of designing service ☐ Be able to work with other co-designers ☐ Help other co-designers accomplish design activities
 **Co-designer** (Customers)	2~4 Person	☐ Have typical characteristics of persona ☐ Without design background ☐ Be able to work with other co-designers

The design lab

The implementation of the *U-Service* method entails conducting workshops where customers and designers gather to communicate ideas face to face. While conducting workshops, establishing an inspiring design space is the first step toward successful communication. For controlling the design efficiency and promoting higher quality collaboration, the lab setting should support the design activities and inspire the participants. For example, prepare a lab that is comfortable for discussion, such as a room fully equipped with facilities and design material. Considering the three design activities, the lab should have areas for browsing overall information, presenting ideas, and discussion. Additionally, providing music, snacks, and magazines are helpful for facilitating the dedicated

involvement of the participants. Figure 5.2 illustrates the setting of the design lab.

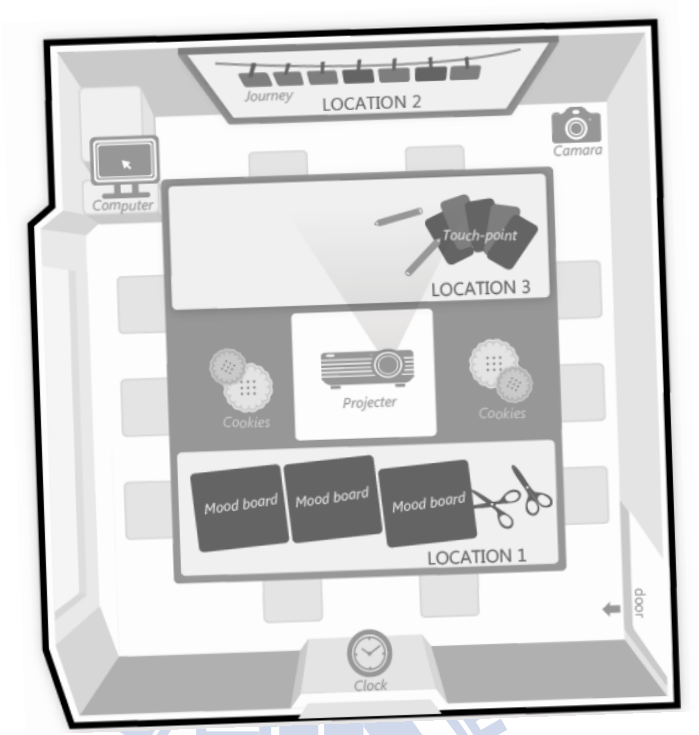


Figure 5. 2 The layout for space decorating of design lab

Inspiring tools

The design materials should be prepared for assisting participants with finishing each design activity in the workshop. To expand ideas following the main concept, materials should be prepared according to the design topic. A detailed account of material preparation is provided below.

- *Contents of the topic introduction*

  Presenting the design topic begins with background narratives that introduce the purpose and scope of the design. This is the first step for participants to understand the design topic; therefore, describing the overall concepts briefly is essential. The basic introduction may contain the background story (for example, a scenario that presents current problems or a situation regarding the current state of service) and the description of persona (for example, their attributes, needs or personal profile). Additionally, preparing related issues for facilitating participants to think further is recommended (for example, encouraging participants to discuss the potential needs in service or possible reasons for problems).

The following serves as an example:

"This service design project aims to provide people a pleasant cycling experience. The design support two types of customers, one is native, the other is a newcomer to Taipei. The service design should fit the daily life of the native and meet the expectations of the newcomer. Presented here is the scenario of the current cycling life of the native . . ."

- *Moodboard pictures*

  The first design activity is the Mood Puzzle, which aims to help participants express feelings or initial perceptions of the service. While working on it, various moodboard pictures (see Figure 5.3) are prepared to facilitate participant communication and help them express their ideas. The numbers of pictures should prepare per participant 20 pieces above and it can be the magazine instead. The collection of pictures needs to be carefully chosen, especially regarding the content of pictures. The guidelines for picture selection are provided below:

  (1) **Mood pictures** (for example, pictures expressing emotions such as happiness, love, fear, anger or atmospheres depicting relaxation, silence or liveliness). Both positive and negative moods are balanced.

  (2) **Topic-related pictures** (for example, a picture of cycling, outdoor activities or pictures representing related experiences).

  (3) **Pictures with context** (for example, pictures describing the buying of tickets, the environment of cycling or pictures representing people in action with context). Pictures that only describe function should be avoided (for example, a vending machine, a multi-function clock or a bike, which are too specific and limit the imagination).

  (4) **The visual element is balanced** (for example, pictures that contain diverse colors, materials or build feelings for the viewer.); these inspire participants to apply for presenting feeling abundant.

Figure 5. 3 The moodboard pictures which are collected by above guidelines.

- *Scene cards*

  While working on the second activity, Journey Story, a set of scene cards should be prepared to present at the moment of using the service. A scene card containing clear situations or incidents can prompt participants to imagine the service in real life. For planning a journey, six to eight scene cards should be used. Each set of scene cards should be prepared in triplicate. Figure 5.4 provides examples of scene cards, which can be prepared according to the following guidelines:

  (1) **The content of the scene cards is activity-based** (for example, booking a cycling tour online, attending a cycling course, applying for membership of a cycling club). These help participants to imagine the service account more

widely.

(2) **The scene presents specific situations regarding the problem** (for example, a restaurant without parking spaces for bikes, a market so crowded that bicycles cannot pass). These help participants to recognize problems and solve them.

(3) **The scene presents possible solutions** (for example, people obtaining travel information from a website).

Figure 5. 4 A set of scene cards that used in designing a cycling service.

- *Touchpoints toolkit*

  The main part of this toolkit involves the paradigm of touchpoints, which is divided into four categories: *People, Space, Devices, and Resources.*

  (1) **People** refer to the service staff (for example, cycling trainers, travel guides or others associated with customer service);

  (2) **Space** refers to physical facilities (for example, parking spaces, the cycling classroom or cycling roads);

  (3) **Devices** refer to machines (for example, phones or vending machine);

  (4) **Resources** refer to information or materials that supply services (for example, travel information, timetables or supplies).

This toolkit is created to improve participation and generate more solutions in a limited amount of time. Additionally, the *"Pattern form"* should be prepared (as shown in Figure 5.5), as the form to fill in *"Problem, Solution, Context"*. This form guides participants to define touchpoints with detailed descriptions.

Figure 5. 5 The Pattern form

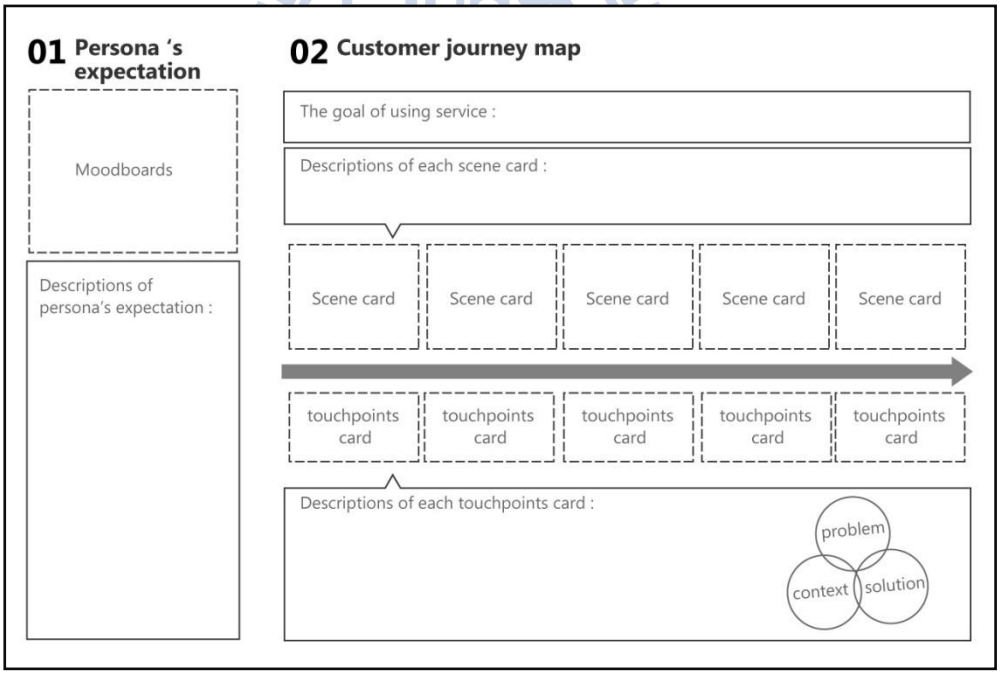
5.1.2 Second Stage: Co-design workshops

Three main activities compose the co-design workshop: *Mood Puzzle*, *Journey Story*, and *Touch Point Pattern;* completing these activities requires approximately three hours. Table 5.2 shows the timetable and guides for the design activities. For conducting workshop activities, the design production has the moodboard, customer journey map, and touchpoints that conceptually define the service ideas (see Table 5.3).

Table 5. 2 The timetable of the service co-design workshop

PHASE	TIME(min)	GUIDE
Introduction	5 10	Warm up and introduce participants Present the design subject.
Design Activity 1		Guide participants to co-design the moodboard step by step such like:
	5	*"Choose ten pictures which stand for your insight."*
	5	*"Introduce the reason for choosing pictures."*
	10	*"Put similar pictures together with other participants."*
	5	*"Use those pictures to build the collage which make sence for all of you."*
	5	*"Present insignt concensus and discuss the design guideline."*
Design Activity 2		Guide participants to build the sequence of service such like:
	5	*"Set the goal that you may like to achieve through service ."*
	10	*"How would you achieve the goal ? design a scenario to show it "*
	10	*"Re-sequence the scene for thinking better context."*
	5	*"Present final design scenarios and discuss it."*
Design Activity 3		Guide participants to define the service components such like:
	10	*"Describe the leading roles in your design scenario "*
	10	*"What touchpoints would be ? define it"*
	10	*"Describe every touchpoints' use context and map them to scenario."*
Discussion	15	Review the design result and exchange ideas or opinions

Table 5. 3 The template of the workshop results



Introduction (15 min.)

The workshop starts with the introduction of design topics to warm up and help participants understand their roles.

First Design activity: Mood puzzle (30 min.)

The *Mood Puzzle* was created to help participants express their ideas or experiences, inspire their imagination, and define the service characteristics that make sense to them. The task for participants involves co-designing the moodboards.

- ***Step1:*** to express ideas or the experiences related to the topic

  Each participant selects ten pictures that make sense to him or her. All participants then express the meaning of pictures to each other (for example, stories in the picture, related experiences, interesting ideas). This step is conducted to prompt participants to develop abundant imaginations and to help them communicate successfully.

- ***Step2:*** to group similar ideas and create the initial service concept

  After exchanging ideas, this step entails grouping similar ideas. As shown in Figure 5.6, one participant uses a picture to express the concept of "ecologically friendly", and other participants share their pictures that express the same concept; therefore, a group of "ecologically friendly" pictures is formed. This grouping activity is repeated until all pictures are in a group. After that, participants can discuss concepts of each picture group and use them to create moodboards.

Figure 5. 6 Participants works on moodboards to present their feelings by the collage toolkit

Second design activity: Journey story (30 min.)

While viewing the process of service using as a journey, this activity guides participants to design each key moment in the journey. That is, participants design

the sequence of interaction between people and service. The task for participants involves co-designing the customer journey. Figures 5.7 and 5.8 show participants working on this activity.

- ***Step1:*** to propose the expectation of the user

  First, the task for participants is to determine expectations and goals of the customer, and can be set up as “What the customer wants to do and when to do it.” This format helps to describe the goals of the customer in context; participants can then design journeys that follow these goals.

- ***Step2:*** to describe process of accomplishing goals

  According to previously established goals, participants pick up scene cards that relate to the goals. Each scene card represents a moment of using service, and participants plan the process by sequencing them.

- ***Step3:*** to describe the mind of the customer

  Participants should present their service journey and explain the mindset of customers in each scene. Participants sequence the “scene cards” from left to right and present their design of service journey.

Figure 5. 7 Participants use “scene cards” to design the process of interaction

Figure 5. 8 Participants use “scene cards” to present their journeys of using new service.

Third Design activity: Touch point pattern (30 min.)

The touchpoint pattern was created to define the touchpoints of supplied service. The task for participants is to co-design the touchpoints in context.

- design the touchpoints in each scene

  This step involves planning the ways people accept service. The touchpoints are like windows for providing service, and participants can design them by thinking, “What ways are appropriate for people accepting service?” Participants then select the touchpoints for each scene card and write down the related context (for example, “Why these touchpoints?” ”What types of problems does it support?” “How do we use it?”).

5.1.3 Third stage: Organization

While in the organizational stage, participants were gathered to discuss their designing processes and productions. The process of the workshop was video recorded and the design result, such as the moodboard and service journey, were documented. Therefore, the detailed discussion could be conducted with those data and contexts of ideas further understood.

The discussion was conducted from reviewing the design result with participants, and then participants were prompted to describe their thinking processes regarding service ideas. Finally, participants presented the complete concept with the customer journey and touchpoints descriptions in detail.

To expand the service ideas further, this stage focused on finding real needs of customers and determined the reasons for ideas. The production of this stage would be the context of participants’ ideas.

5.2 Design practice

After forming *U-Service*, it was implemented into a design case. The target customers of the design case were invited to the workshop and they collaborated with designers. This section introduces the design case and presents the production of the design workshop.

5.2.1 Design case and process

The case is mainly designed for promoting the cycling life. The service system is expected to help customers join the cycling life step-by-step, and it might provide a positive experience toward customers becoming cyclers.

Before the design work, the design team conducted a series of interviews with the potential customers to define the persona. They then provided initial understandings of the current life of the customer and further produced design ideas. The brainstorming was conducted to produce an abundance of ideas. Approximately six main design topics were organized from brainstorming, such as a sharing platform for the cycling life, a composite service with cycling and the market, and the cycling team. After that, targeted customers were invited to co-design these topics with designers. The design result was arranged according to the document, mainly defining the service journey and touchpoints. The concept expansion was designed according to the workshop result. Figure 5.9 is the design process of this case.

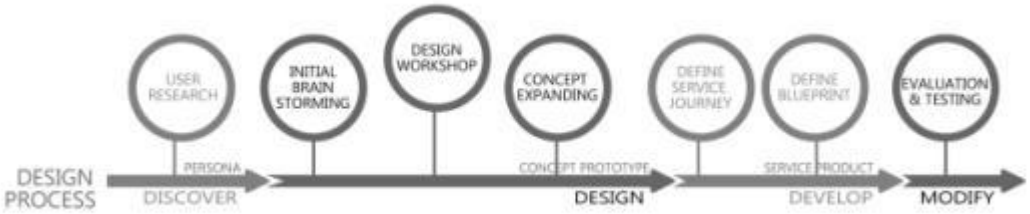


Figure 5. 9 the process of the service design case

5.2.2 Design concept

The workshop was conducted to allow designers and customers to collaborate in the service design. Customers who are interested in cycling tourism were invited. This section presents situations involving how workshop participants designed the concept of *U-Service*.

In the beginning, the workshop moderator introduced the design topic, which involved designing service for a cycling team. The main idea of this topic was to design many types of cycling team services and to guide more people to join the cycling life.

After introduction of the design topic, each participant selected ten pictures to express their feeling of the topic. They then glanced at other pictures and grouped all pictures that had similar meanings for them. The pictures were mainly grouped into four categories, as shown in Figure 5.10. The categories stand for *Peaceful, Companion, Natural, and Insight*. Workshop participants expected the service of a cycling to cause them to have these emotions.

Figure 5. 10 From left to right, the moodboards for “peaceful atmosphere”, “companion”, ”natural” and “insight”

When participants worked on the second activity, they were separated into design teams. Each design team contained designers paired with customers. In this activity, participants stated the service item that they would like to have experienced. For example, the design team focused on the *“Companion”;* they wanted to provide a service item that helps elders join the cycling team of their family’s companion. Then, participants used the scene cards to show the moment of using service, such as booking services online or a service car for helping the elderly. The final concept the design team presented involved providing interesting service ways for grandparents and grandchildren cycling together. Participants used scene cards to present a scenario of their concepts as shown in Figure 5.11

Figure 5. 11 the workshop participants are designing the service journey by scene cards

After planning the service journey, they had to design the object used in service, such as the “smart phone” for booking services online. They also had to explain why they selected that object to obtain service. The third activity aimed at prompting them to think about what touchpoints were appropriate for obtaining service.

Finally, from this operation of the *U-Service* method, workshop participants provided a set of services that encouraged grandparents and grandchildren to join a cycling team in an easy way. Figure 5.12 provides an example of the design results.

Figure 5. 12 A customer journey map which presents the process of getting service.

5.3 Comprehensive Assessment

This section divides the assessments of the service design method into three parts to explain the application involved. First, the purpose of this method indicates the problems that service designers might encounter. Second, to ensure that the method works, reminders of implementations are shared. Third, the effect of implementing *U-Service* is reviewed. The strengths and weakness of *U-Service* are also addressed.

5.3.1 Consideration of this method

With the progress of science and technology, developing various products and service functions becomes easier. However, new functions do not suggest the great experience anymore, because the process of using is identical to operation training. Therefore, the point of this co-design method is to design service from the perspective of customers, to realize deeply the needs of the customer, and to plan the service function that fits the wishes of customers. Conducting co-design workshops is one way to achieve the aforementioned objectives. The following are reasons for and considerations of this method.

To generate concepts from the experience of the customer

After the exploration stages, the findings of customer's life should arrange to concept that lead design extending. Designing concepts according to customer insights is the aim of this method. Using the Mood Puzzle, entails a large number of pictures for opening the imagination of the participants, prompting customers to express their life experiences, and helping designers present their concepts. Due to pictures, containing more information than can be described in words, designers and customers must think through this visual tool and use the same graphic language to communicate. This co-design method expects to help broaden imaginations and improve communication between customers and designers.

To facilitate participants extending ideas with each other

To design the service experience, the second activity, Journey Story, was created to guide participants to design the activity by planning the process of using service. The activity also facilitates collaboration between designers and customers, meaning their discussion are like connecting ideas and contexts, with customers proposing contexts and designers extending ideas to follow them. In this way, the journey that presents service functions or items would be close to the expectations of the customer.

To specify service concepts step by step

In the beginning, the Mood Puzzle aimed to provide an overview of design service, and the Journey Story systematically specified possible ways to supply service designs. Then, in order to generate usable ideas, touch point pattern aims to help participants define the components of service specifically.

5.3.2 Suggestions for using method

While implementing the *U-Service* method, four suggestions for implementing the method are: the usage of design materials, the role of members in co-design workshops, and the guide of design activities.

The usage of design materials

The topic-related pictures guide participants to think of a topic; but pictures that are too specifically relevant might limit their imagination. The way to address this is to prepare some magazines that are not relevant, thereby broadening the thinking process.

The role of members in co-design workshops

This method aims to facilitate communication and idea generation, and is not concerned about competition or the evaluation of ideas. Therefore, the design from designers and customers are balanced. Customers suggest their ideas from life experiences, and designers generate ideas through observation of use in context. The roles of members are overlap, "seeing customer as co-designer and designer as facilitator".

The guide of design activities

The moderator or facilitator should especially notice some phenomenon that might hint at an error. From previous experience, the result of the Mood Puzzle should express moods, characteristics of concept, but sometimes, participants present the functions or operation processes with apparent misunderstanding. In the Journey Story activity, the journey should be created from the perspective of the user, not from the service providers. Additionally, touchpoints should be context related, and participants should avoid simply designing touchpoints according to function.

5.3.3 Strengths and weaknesses

Through the situation of method implementation, this section presents the strengths and weakness of the *U-Service* method. These results are addressed to help further modification.

The strengths:

- *To make customers express real needs through co-design.*

  (1) This method proposes three activities that help to design service concepts

with customers. The designers who want to design services through co-design workshops could directly follow our steps to save time and effort.

(2) This co-design workshop is design-directed. Unlike gathering customers to explore their contexts, this method helps to produce usable ideas in context through the collaboration between designers and customers.

(3) Because of tools and pictures using, participants have objects to think about, assisting them to express their real desires and ideas.

(4) Because all activities in workshop are collaborative, every participant must express his or her ideas or experiences to each other. In this way, the method causes them to feel indispensable and more positive toward participation.

The weaknesses:

- *It takes time for the workshop conductor to prepare adequately.*

  (1) The level of effort from participants might influence the design results.

  (2) The results of the method mostly show the design concept in a customer context, without the details of developing. Further exploration is required.

  (3) The moderator or facilitator requires training before workshops, and their role is vital to guide method use successfully. Unfamiliar operations might cause the efficiency to be less than it should be.

Chapter 6

Conclusion

This chapter concludes all the results of the study. First, the intentions of the study are explained and the process of method development is presented. Related issues and problems of study are then discussed. Finally, recommendations for further works are provided.

6.1 Conclusions

In this study, the basic idea is to develop a co-design method that can help designers to obtain more ideas by designing with users. To achieve this idea, three main objectives relate to this study. The first involves realizing difficulties that co-designers may have while expressing ideas and discussing service concepts. The second objective is to create a method for implementing co-design. Finally, the way of developing a method is explored. The following sections present reflections of these three objectives and related issues.

To realize difficulties in co-design, workshops were conducted to observe the situation of co-working. Regarding the process explained in Chapter 3, workshop participants were asked to accomplish the design tasks together. They were then interviewed to explain how they finished the tasks and what steps of using the method was difficult for them. After the observation and interview, the results show that communication was difficult because the co-designers exhibited quite different ways of thinking. One phenomenon could be found in co-generating ideas, designers work on creating many numerous ideas but users more concern about the idea is possible or not. The other phenomenon involves designers presenting how to provide a service while the users present their expectations. These two phenomena provided us the direction of developing a co-design method. A series of tools was provided to help them generate ideas consisting of differing opinions.

To contend with the difficulties in co-design further, a set of design toolkits was developed and a systematic method was created. The initial framework of the U-Service method was formed by reviewing literature and practicing service design. In the beginning, the U-Service method was formed according to the characteristics of service design, such as considering the process of interaction and the time element. The first framework of U-Service was then tested and modified in the co-design workshop. Finally, the procedure for implementing U-Service was explained in Chapter 5. The proposed method (U-Service) consisted of three co-design activities: the moodboard puzzle, Journey Story, and Touchpoints Pattern.

The aforementioned co-design activities were created to guide workshop participants to design service ideas from general to specific. First, the moodboard puzzle was conducted to inspire the imaginations of participants and encourage them to express the position of their ideal service. Second, the Journey Story was conducted to prompt participants to think more about service functions and serving ways. Participants were asked to design the process of obtaining service. The last activity, the Touchpoints Pattern was conducted to help participants define key components in the service system. Through these three activities, we hoped to help designers develop more ideas based on the opinions of users and help both of them think about service more easily.

After reviewing the whole process of this study, the way of developing a method is organized. For the first step of developing a method, we suggest to keep trying and review. In the initial stage, trying different ways and observing effects are helpful to define what the real problem is. The initial ideas of the method should then be implemented and tested. The opinions from users of the method can provide designers with clearer directions of method development. The data collected from observations and interviews was analyzed to further modify the method. After modifying the method, the final step involved implementing it to reconfirm its effect. Through three stages that are exploration, test and analysis, and finalization, we developed U-Service from exploring design problems, proposing solutions, modifying the initial framework, and creating the final method.

6.2 Reviews

This section discusses the related issues of this study and reviews the problems that occur in the process.

In the process of the study, a rehearsal was conducted before each workshop. Some designers were invited to the rehearsal and used the *U-Service* method as a test. That is, they used the method or tools before they were in workshops. Due to this, two obvious occurrences in the workshops were realized. One entailed designers finishing the tasks quickly because they had performed them before. Some of the designers proposed ideas they had discussed during the rehearsal. Another occurrence involved designers being in the same workshops as the facilitator, who helped users to complete the job. The rehearsal was effective in facilitating the process. However, the rehearsal might have caused us to miss problems that happened during the initial use.

In the co-design workshop, designers and users were prompted to work together but share different jobs. The users were responsible for telling about their experiences and the designers concentrated on generating an abundance of ideas. This way was planned to allow them perform the job that they were good at. However, the result is out of our imagination. Users presented their experiences and their ideas. Designer ideas came from their life experiences. The role of participants in a workshop can be as a designer, a user or a facilitator at the same time. Their ability cannot be separated into a narrow definition.

U-Service was designed to apply in the initial stage of the design process. In the initial stage, the intention of the method was to facilitate ideas rather than evaluate whether the idea was of high quality or not. This method focused on helping designers and users design the service with open minds. Due to this concept, the method of co-design was created to encourage workshop participants to feel free to generate ideas without competition.

6.3 Further Work

Some difficulties remain with this study, which require further exploration. The recommendations of further works are proposed as follows:

This study focused on creating a method that helps designers and users collaborate during the initial stage of the design process. They could design the concept with open minds in this stage but should consider the feasibility of the ideas later. To make the design results realizable, the suggestions of the service provider must be considered. Thus, collaboration among designers, users, and stakeholders is worthy of further investigation.

Reflecting on the process, a way to develop a method was presented and the *U-Service* method was developed after several times of testing and improving works. The whole process of the method development is presented to provide an example for those who are interested in method development. Additionally, U-Service is proposed to help design teams who have problems similar to ours. Finally, the study hopes to open a discussion on service design or its method development.

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APPENDIX

Appendix1: workshop script

Appendix2: moodboard pictures

Appendix3: scene cards

Appendix4: workshop results

Appendix1: workshop script

Persona Info
使用者資料

非常感謝您的幫忙!
本次研究所收集的資料僅用於學術用途，不會以任何商業形式的公開，請您放心填寫！

姓名:

年齡:

職業:

科技能力:

最近or印象深刻的一次旅遊經驗:

生活中使用單車的時機:

平常的休閒活動:

Task 01
拼貼你對於主題概念的感覺

•請挑選大約十張圖片來代表 你/使用者 喜歡的服務感受。
時間:10 分鐘

Task 01
拼貼你對於主題概念的感覺

•介紹自己選擇圖片的原因。

時間:10 分鐘

「這張圖是放鬆的，因為旅遊對我來說就是要紓解壓力。」

「有活力的，因為一起騎單車好HIGH喔!」

「沉思的，我享受一個人騎單車的孤獨感。」

「使用者適合不太耗費體力的活動，服務應該是休閒的。」

Task 01
拼貼你對於主題概念的感覺

•圖片接龍，輪流將相似感覺的圖片放在一起。

每個人輪流把圖放在相似圖片的旁邊，並說出那張圖的形容詞

•整理圖群，讓它們的組合排列能代表一種氛圍或故事

分別加註圖群的形容詞

時間:10 分鐘 FIN.

Task 02
串連圖片想故事

•以一串連環圖片來說明你的故事。
像是連環漫畫的方式，步驟式的表達一個故事

故事內容一:
你是一名遊客，你要透過服務平台加入一個你感興趣的車隊，過程中你會怎麼做呢?

故事內容二:
自訂/自選

你想要體驗一日導遊的服務，你會怎麼做呢?

你想要透過平台與朋友組一個客製化的小車隊，你會怎麼做呢?

你想要透過導覽服務的車隊，了解當地生態環境，你會怎麼做呢?

你希望可以透過平台，紀錄你的騎車喜好與健康狀況，你會怎麼做呢?

你希望騎單車的美好經驗可以分享給親朋好友，你會怎麼做呢?

•在圖片上標註故事內容
說明每張圖片的情境

時間:15 分鐘

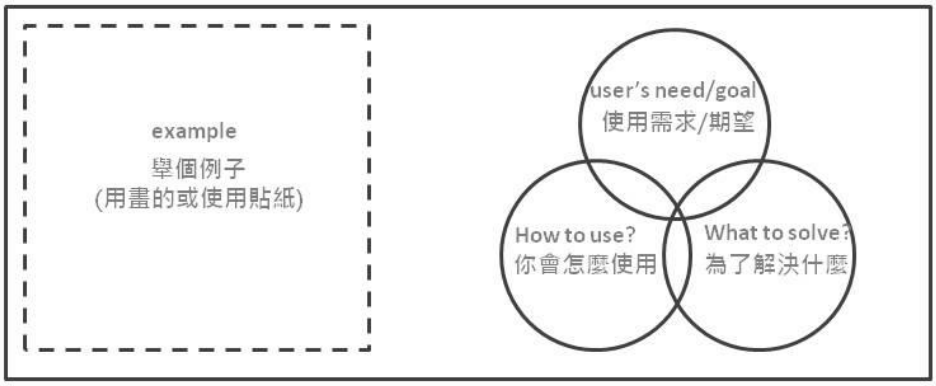
Task 02
串連圖片想故事

•發表故事內容。
互相介紹故事內容

時間:10 分鐘

Task 03
貼上各個情境裡的道具

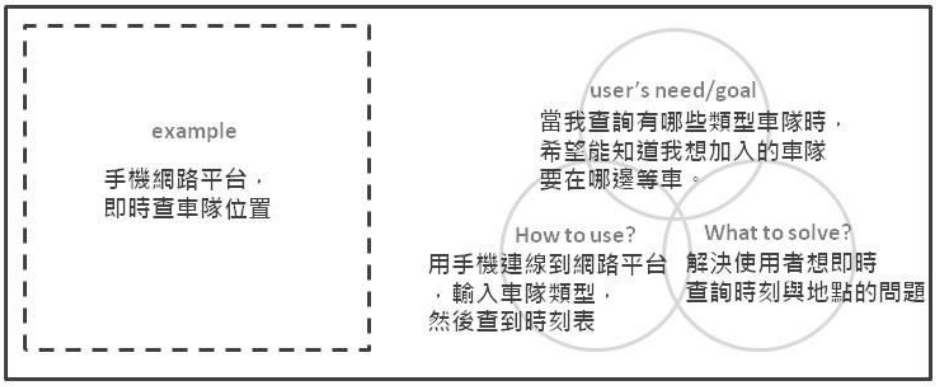
•請根據故事內容發展需要的主要道具。
你想透過什麼取得服務呢?



時間:15 分鐘 FIN.

Task 03
貼上各個情境裡的道具

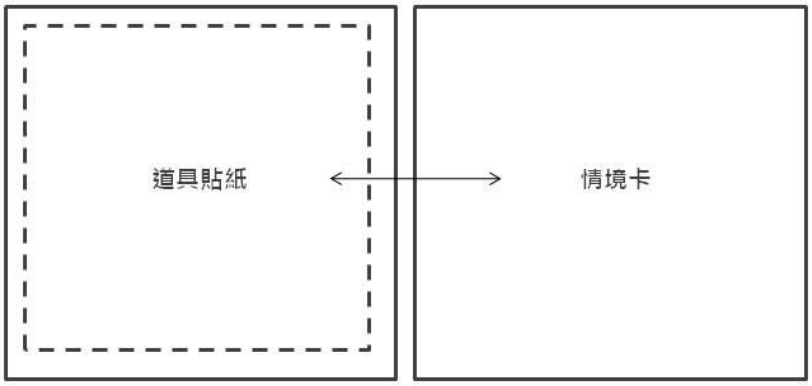
•一個例子



Task 03

貼上各個情境裡的道具

•將主要道具對應到故事內容，並做修改調整。



參與者的意見。

你覺得這個方法怎麼樣?

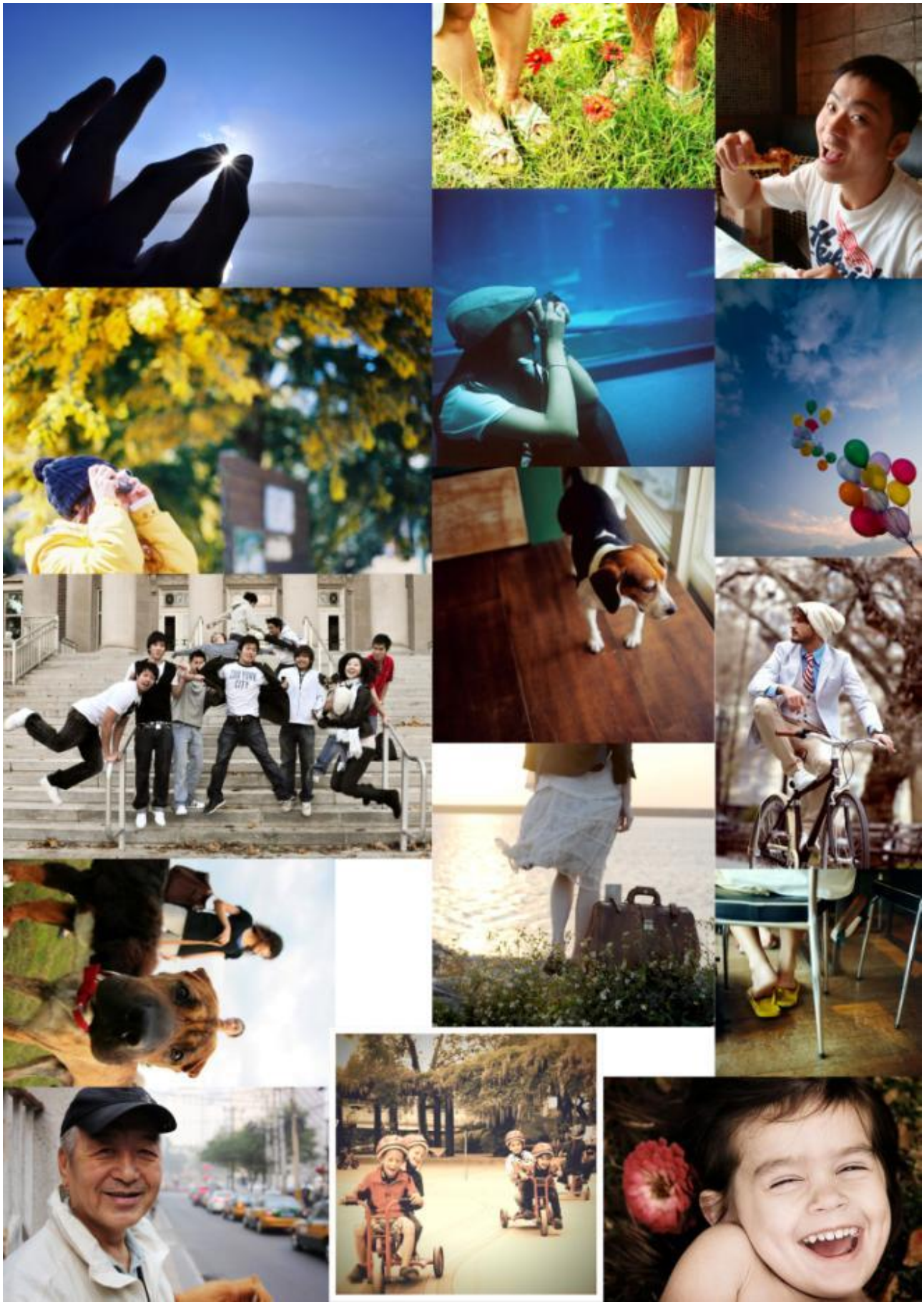
你對於活動的理解是什麼?

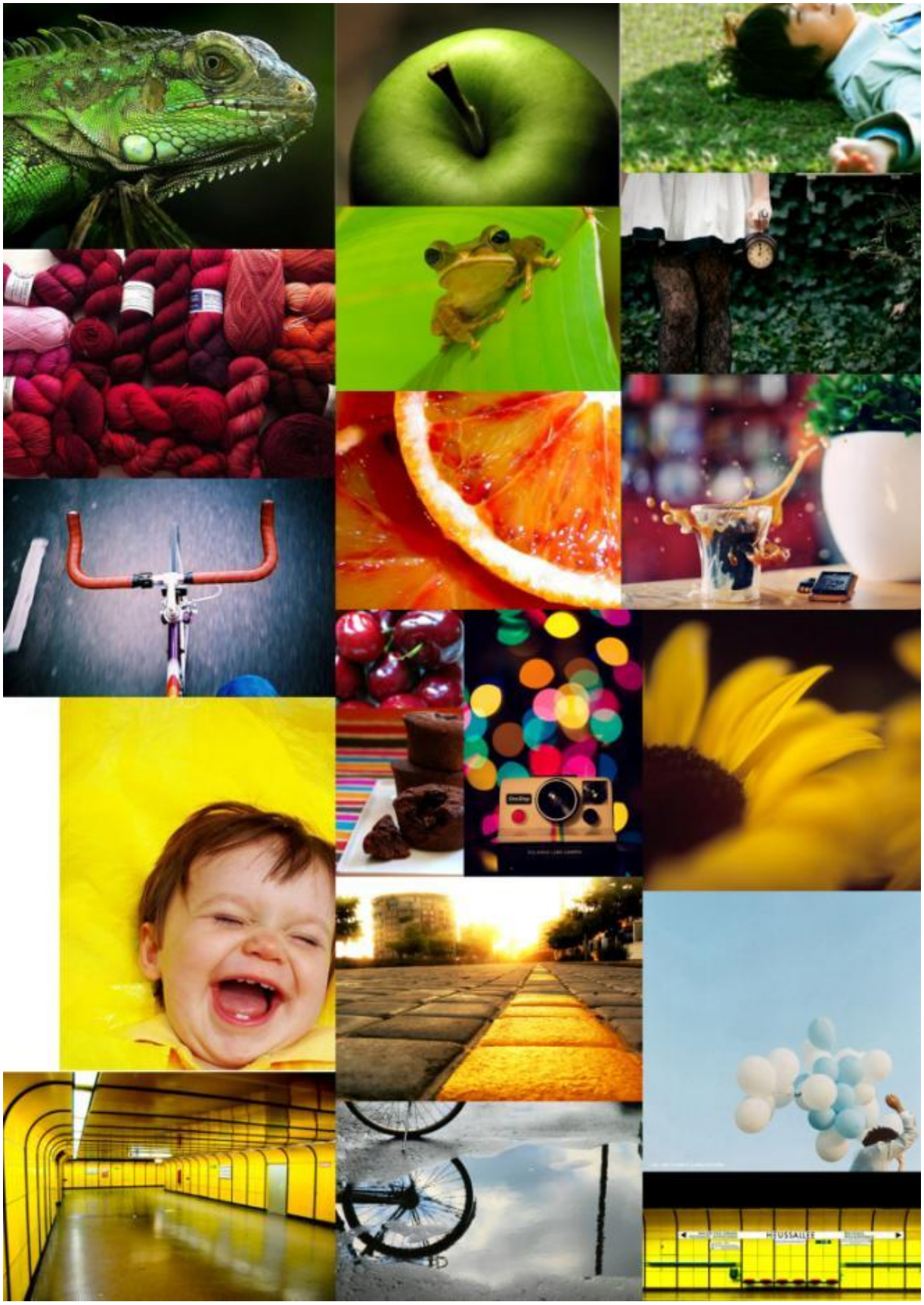
哪些部分你覺得困難?

你與其他參與者對於服務的感覺有共識嗎?

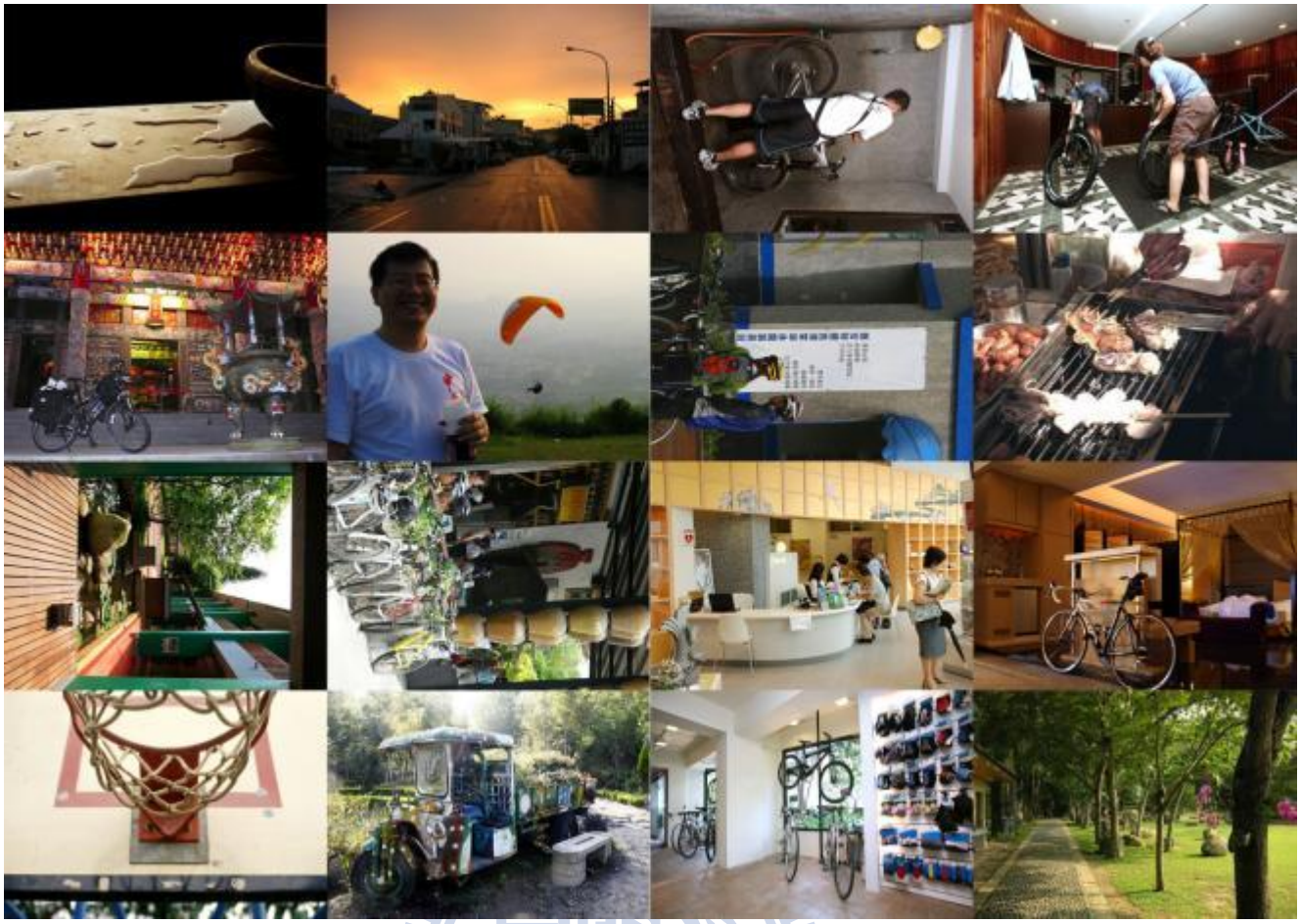
時間:10 分鐘

Appendix2: moodboard pictures





Appendix3: scene cards



Appendix4: workshop results

JOURNEY1 獲得市集地圖活動資訊	GROUP1				GROUP2			
	情境卡	情境描述	心境描述	TOUCH POINTS	情境卡	情境描述	心境描述	TOUCH POINTS
STAGE1		挑選租車店。	想要知道哪家比較便宜，比較多車款可選擇，比較有保障	[空間]集中的租車店		寄放不帶著騎車的物品	安心，輕鬆上路	[空間]廁所，更衣室
STAGE2		檢查與挑選腳踏車性能	希望我選到的車子一路都很好騎	[人]車店老闆&店員 [裝置]性能測試評分機		檢查車況，穿戴裝備調整	打起精神，希望一天順利	[人]其他遊客 [裝置]TO DO LIST 提醒單 [裝置]祈福平安符(憑證換檢查服務)
STAGE3		採買補給品，買水(附近雜貨店)零食與乾糧	開心的挑食物	[人]雜貨店老闆 [資源]便利包(水，補給) [空間]商品種類充足的雜貨店		路上維修點與緊急救援點	未雨綢繆，萬無一失	[資源]維修點位置與相關資訊 [資源]修理工具與打氣機 [人]維修人員
STAGE4		設定目的地與路線(初始的狀態，總里程數)	希望不要太遠，騎太久	[資源]交通路線 [資源]體力與建議休息提示				
STAGE5		出發前的宣告(拍照)	元氣！	[裝置]擺相機的架子				

JOURNEY2 前往租車準備出發	GROUP1				GROUP2			
	情境卡	情境描述	心境描述	TOUCH POINTS	情境卡	情境描述	心境描述	TOUCH POINTS
STAGE1		查看推薦行程或餐廳	想知道當地有什麼地方可以去，或資訊站的位置，大致的方向，心情是期待的。	[裝置]輸出工具 [裝置]電腦 [資源]旅遊部落格		看一些當地的資訊、書或雜誌(在家或民宿)	在想哪裡可以去，有點模糊、懸往	[資源]旅遊書報雜誌
STAGE2		當地的遊客中心，拿地圖/活動時間表(小市集或特產特賣區)	希望去到的地方跟自己想像中的一樣	[資源]活動時程表 [人]客服人員 [資源]地圖 [裝置]資訊櫃 [空間]寬敞的服務(資訊)中心		到旅遊中心了解資訊	很多疑問	[資源]旅遊小冊，折價卷 [空間]旅遊資訊中心 [人]解說員 [人]其他遊客
STAGE3		尋找民宿老闆(當地人)介紹當地特色	希望老闆不要敷衍我	[空間]很乾淨，有親切感的民宿 [人]親切的老闆與當地人 [資源]在地人的私房行程或景觀、餐廳		了解當地的特色或別人的經驗	想知道怎麼去	[資源]別的遊客的遊玩影片或聲音 [資源]互動式或動態的照片心得資訊推廣分享 [裝置]戶外看板(互動裝置)
STAGE4						想看可以去哪些地方玩，如何過去，安排行程、路線	期待，每個都想去，開心的	[裝置]隨身(車)GPS [資源]路線圖規劃建議
STAGE5								

JOURNEY3 沿車道逛埔里市集	GROUP1				GROUP2			
	情境卡	情境描述	心境描述	TOUCH POINTS	情境卡	情境描述	心境描述	TOUCH POINTS
STAGE1		沿著市集的指標走。	期待，不知道要走多久。	[人]同行的成員 [裝置]清楚的指標牌與地圖看板 [人]其他騎單車的人 [空間]舒適的車道		循著地圖規畫的路線找方向。	不確定感，怕走錯有探險的感覺	[資源]MAP OR GPS [空間]陌生地點，不熟悉的戶外
STAGE2		抵達市集，在市集看到當日的活動或折扣。	有喜歡的活動或折扣會很開心。	[裝置]電子看板 [資源]當日資訊 [資源]此處特色活動資訊 [裝置]此市集看板		途中停下拍照，觀察景物的變化。	新奇，特別，怕錯過	[裝置]景觀資訊看板 [空間]廣闊的視野(田園風光)
STAGE3		停放腳踏車。	希望腳踏車很安全。 (不會被偷或是被推倒)	[空間]足夠的單車停放空間 [裝置]停車架或停車的鎖 [資源]one by one單車辨識系統 (車子會認主人)		到了人比較多的市集，找地方停車。	希望可以快速的找到車位，需要安全且容易記住的位置	[裝置]停車輔助器 [資源]停車位資訊 [人]管理員
STAGE4		開始逛市集!找看板上提供資訊的攤位。	開心，希望可以看到有趣的東西。	[空間]乾淨熱鬧的市集空間，好的 動線 [人]有趣的當地人或遊客 [資源]交換沿途資訊		穿梭在市集中逛一些新奇好玩的東西，參與活動，與店家互動	好奇寶寶，什麼都想問店家	[人]店家遊客 [空間]市集空間e.g.廣場、通路、建物 [資源]攤位導引 [空間]擁擠熱鬧的空間 [資源]攤位，架子，商品
STAGE5						拍下喜歡的新奇東西	想偷拍	[空間]小空間，擠滿東西與商品 [人]幫忙拍照的人 [裝置]相機與dv儲存裝置 [資源]特產、招牌

JOURNEY4 參與市集活動	GROUP1				GROUP2			
	情境卡	情境描述	心境描述	TOUCH POINTS	情境卡	情境描述	心境描述	TOUCH POINTS
STAGE1		參觀市集內容的各種活動	新奇有趣	[資源]各種活動的資訊 [人]現場示範人員 [空間]舞台		了解產品故事，可以DIY動手做或客製化	想要有一個特製的紀念品	[人]解說的店員 [資源]紀念品
STAGE2		選到特定(自己喜歡的)活動，並報名參加	期待	[資源]提供活動內容 [裝置]活動報名時間與提示 [裝置]資訊站 [裝置]可以輸入活動內容資訊，以留做紀念 [人]活動人員		記錄製做過程	新奇，有成就感	[資源]參與的過程記錄 [人]技術熟練的老闆 [空間]個人攤位
STAGE3		參與並進行體驗活動	挑戰！有趣！	[裝置]自動拍照裝置 [資源]體驗品 [人]指導員，解說員		看到許多小吃	逛餓了，想吃東西	[空間]熱，香味四溢 [人]廚師 [裝置]烹飪器材
STAGE4		帶回活動之後的成果、記錄 與紀念品	滿足！充實！	[裝置]郵票代售機與郵筒 [資源]紀念品		看到特色小吃， 想試試不一樣的	擔心採到雷	[空間]美食天堂
STAGE5						想吃合自己口味的， 和店家討論口味	有參與感	[資源]當地農產品 [空間]餐廳

JOURNEY5 特色休息點	GROUP1				GROUP2			
	情境卡	情境描述	心境描述	TOUCH POINTS	情境卡	情境描述	心境描述	TOUCH POINTS
STAGE1		停車休息	謝天謝地， 終於可以休息了	[空間]方便停車的空間 [資源]體力指數		來到休息區	放慢腳步，想停下來休息放鬆	[空間]很多樹或草地，可供休憩的地方 [資源]樹木花草
STAGE2		休息站可以喝茶	覺得很貼心	[資源]水 [空間]足夠容納車與人的空間，有很多椅子 [裝置]方便取用的茶水台、杯子，垃圾桶		找位置停車，發現旁邊有特別的裝置。坐下來補給	身體累累的，需要能吸引注意力的東西，重新打起精神。	[資源]休息點園區的特點資訊 [資源]公共裝置、椅子 [空間]戶外大自然公園景色
STAGE3		現場簡易料理所採買的食物，提供新鮮的特色餐點	新鮮有趣	[資源]食材 [資源]菜色建議表 [空間]乾淨明亮的餐廳與開放式廚房		休息區有特色的建物與店家可以進入參觀	靜態，想恢復體力的停留	[資源]建物歷史資訊 [空間]當地概念餐廳
STAGE4		休息點的團康活動	有點尷尬又有點咪	[資源]團體活動參與資訊與記錄 [人]超嗨團康人 [裝置]趣味，適合拍照的物品		舒適友善的特色參觀點	放鬆，小躺一下	[空間]空調良好，舒服的環境 [裝置]埔里18度C巧克力販售機 [裝置]按摩椅，懶人椅 [空間]香氛，輕音樂
STAGE5		參觀拍照	想要留下紀念	[人]幫忙拍團體照的人 [資源]展示品				

JOURNEY6 深入探險	GROUP1				GROUP2			
	情境卡	情境描述	心境描述	TOUCH POINTS	情境卡	情境描述	心境描述	TOUCH POINTS
STAGE1		到人煙比較稀少的地方欣賞風景	寧靜，放鬆	[裝置]給人安心的導航系統 [空間]便利的車道		選一些全套的騎車配備，車型適合要去的路程	想很多，考慮後才做決定	[裝置]車型建議資訊站 [裝置]不同款式、顏色的自行車 、衣帽、手套 [空間]店鋪
STAGE2		接觸在地農村生活(接觸在地人推薦的當地特色)	好玩，認識不同的人	[空間]綠油油的 [人]親切的阿伯 [裝置]相機，手機		走「獸徑」 (非人行的路)	想一探究竟	[資源]獨家私房路線 [裝置]路標標示非人走的路 [空間]人煙稀少的地方
STAGE3		前往在地人推薦的特色小吃	覺得推薦人非常實在	[空間]小店家，小吃店 [裝置]GPS定位店家所在地(下次可以再來) [資源]老闆的招牌菜資訊		發現不認識，少見的動植物、地形，並記錄下來	驚喜，新發現	[裝置]電子標本盒，蒐集動植物影像 [空間]大草原 [裝置]走過路程的紀錄與導引 [資源]植物、草
STAGE4		深入當地的信仰與文化	知性，充實	[空間]特色百年老店 [空間]方便停車的地方 [資源]解說牌		鬼屋，無人建物，壯膽一試	緊張又期待	[資源]鬼道具，血 [裝置]過往歷史回顧的資訊台 [人]假扮成鬼的人 [空間]陰森，毛骨悚然
STAGE5						天黑回程途中看到不同的景物	疲倦的，滿足的，開心的，豐富的	[空間]黃昏，天暗暗的 [裝置]照明指引 [資源]路燈照明


DESIGN WORKSHOP SUPERPULIER 14 Jan. 2010 PM 3:40-6:40
設計工作坊產出結果：拼貼單車生活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DESIGN WORKSHOP SUPERPULIER 19 Jan. 2010 PM 6:30-9:30
設計工作坊產出結果：拼貼單車生活
內容摘要:
對於概念的感受像是
嘉年華一樣，異氣熱鬧，
有許多特色建築或藝術品
可以讓遊客拍照與留做紀念。
「休息的椅子很特別，是藝術假特製的!希望我來這市集騎的腳踏車會比別人特別」
「有GPS引導我去一些正在進行的活動點，並且很清楚就可以騎到。我會看到很多嘉年華會裡能看到的東西，人物，與當地小吃。」
「會帶沐浴乳，與一些換洗衣物，方便流汗時可替換」
「可以到處看到站牌拍照留念，拿到有特殊包裝的市集介紹」
「到處都有休息座位」
「可以與有特色的建築或公仔合照」
「我需要望遠鏡，因為市集人多，有這個我可以很遠就看到發生什麼事情」


DESIGN WORKSHOP SUPERPULIER 19 Jan. 2010 PM 6:30-9:30
設計工作坊產出結果：拼貼單車生活
內容摘要:
在埔里騎單車，感覺就是比較鄉村田野，有花花草草，騎車很舒服，是一次悠閒自在的旅遊，可能途中得知市集有表演就會騎去玩一下。
「有GPS不會迷路」
「使用相機記錄沿途風景」
「悠閒的在田野中騎單車；吹來的風有草的味道」
「單車路線包含休息的地方」
「市集可以買到新鮮的農產品」


DESIGN WORKSHOP SUPERPULIER 19 Jan. 2010 PM 6:30-9:30
設計工作坊產出結果：拼貼單車生活
內容摘要:
主要的概念是多元，市集分為幾個區域，有些區域提供休憩，有些集中賣吃的，希望景色也是多元的，並且有白天夜晚的變化，整體而言，是個休閒緩慢的旅遊，然後希望在市集是便利的，買東西時，帶一張卡就OK。
「便利性FOR購物」
「多元的體驗店家、攤位、小吃、夜市」
「友善，認識人」
「親子同遊」


DESIGN WORKSHOP SUPERPULIER 19 Jan. 2010 PM 6:30-9:30
設計工作坊產出結果：拼貼單車生活
內容摘要:
一種休閒式的單車旅遊，
市集會有很多當地文化的展現，
可以看到藝術家現場創作，而戶外的採集，深入探險部分，也可以讓遊客有不一樣的深度體驗，遊客可以自由選擇參加的活動。」
「自己探索的深入體驗」
「當地文化作品」
「千載難逢的當地藝術創作過程」
「休閒式的，非制式旅遊，非嚴謹運動」


DESIGN WORKSHOP SUPERPULIER 19 Jan. 2010 PM 6:30-9:30
設計工作坊產出結果：拼貼單車生活
內容摘要:
所要表達的概念是：遊客可以透過一些裝置來了解當地生態，文物的來龍去脈。而市集的概念，希望是一種可以適合個人喜好的市集，讓不同喜好的人群能各取所需。希望去埔里單車旅遊是一種寧靜而悠閒的氛圍。
「多樣化的市集，不只是埔里特色，也可以是埔里人興趣」
「不疾不徐的步調，不需要一次就看完所有埔里，因為埔里會讓人想再來一次」
「生態的市集、教育的市集、運動的市集、知性的市集、可自行選擇所愛的市集」
「資訊回饋站，隨時有資訊在手機中可以查詢」


DESIGN WORKSHOP SUPERPULIER 19 Jan. 2010 PM 6:30-9:30
設計工作坊產出結果：拼貼單車生活
內容摘要:
覺得去市場比市集更有深入當地旅遊的感覺，個人旅遊的經驗是：旅途中，一定會準備可以記錄的東西，像是紙筆，另外旅途中也一定要有好吃的東西。」
「可以到傳統市場接近當地人，還有找一些好吃的東西」
「如果要住宿，美麗乾淨的民宿也會是美麗的回憶」
「可以看一些有歷史的東西或有故事的人事物」
「可以接近自然，可以放鬆」
「相機拍下所有想記錄的事情」
「紙筆，明信片，寫下當時的感覺和一些其他事物」