

*A Smart Guiding Tours of Eco-tourism for Taiwan's Fairy Pitta: The Service Design Viewpoint*

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**Abstract**

Fairy Pitta, is a special bird that could be found in Taiwan during the summer season. Currently, we can only find their appearance in Huben area in Taiwan. In each summer season, there are many backpackers and birdwatchers all around the world traveling to Huben area to watch this bird. However, the serious outward migration in Huben area is like other villages in Taiwan, causing the lack of human resource in Eco-tourism narrator for Huben area. In addition, a lack of favorable tour guiding map for Ecotourism, causing the tourist to be confuse in the area. Therefore the tourists couldn't have positive experience without information of the Fairy Pitta Eco-tourism. This study utilize Service Experience Engineering (S.E.E) approach, combining with the knowledge of mobile technology to generate service blueprint for Mobile App of smart guide. Researcher gathered information regarding the Fairy Pitta in Huben area through various means. After the information are gathered and organized, researchers analyze the Tourist's need and motivation, and deliver important findings to generate a concept for how the guide should be designed. Once concept development was done, researcher could shape the Service Blueprint that would fit the tourist's need for eco-tourism smart guide from the concept development.

This study focus on the service design approach of an eco-tourism smart guide. By observing the Service Blueprint, researchers accurately pin point the service Touch Point and understand the whole service experience. Furthermore, this study can serve as a reference for future development regarding eco-tourism and smart guide.

Keywords: Service Design · Eco-tourism · Smart Tour · Service Blueprint · Fairy Pitta

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## **Background**

Fairy Pitta is Fairy Pitta family in Passerine order, and there are thirty two kinds in this family. We only can see them in the tropical and subtropical forests on Eastern Hemisphere, and some Fairy Pitta lives in Africa, Australia, New Guinea, India, China, Japan and Taiwan. This bird is currently classified as vulnerable by the BirdLife International Union. Because deforestation in breeding range of Fairy Pitta and trapping them for the cage bird trade, its population is suspected to be in rapid decline.( Syu,Pei-Shuang , Li,Pei-Fen , Lin,Ruei-Sing ,2013) Currently, we can only find their appearance in Huben area in Taiwan. Huben area is located in the Northeast corner of Yunlin County. Because Huben area is situated on the divide between plain and mountain, there are a lot of species in Huben area. Taiwan Council of Agriculture posted that Huben area became the important wild habitat for Fairy Pitta in 2008. Therefore Fairy Pitta is regarded as the important protected species in Huben area.

In each summer season, there are many backpackers and birdwatchers all around the world traveling to Huben area to watch this bird. However, the serious outward migration in Huben area is like other villages in Taiwan, causing the lack of human resource in Eco-tourism narrator for Huben area. There are an ecological cooperative and two narrators to provide birdwatching guiding experience service, and lack of enough narrators to provide birdwatching guiding experience service. In addition, a lack of favorable tour guiding map for Ecotourism, causing the tourist to be confuse in the area. Therefore the tourists couldn't have positive experience without information of the Fairy Pitta Eco-tourism.

## **Objectives**

According to the deficiency of the guiding condition in Huben area, the study combine the viewpoint of Service Design with the concept of smart guide Information Design to raise the Eco-tourism experience. The study is contained Service Design, Information Design and Eco-tourism smart guide to apply the methodology of Service Design with Information Design concept to develop a Service Blueprint of an eco-tourism smart guide for Fairy Pitta. The study hopes to develop a good eco-tourism experience in the condition without disturbing natural environment.

The purpose of study:

1. To understand the guide information for birdwatching backpackers, and to investigate the element of Eco-tourism smart guide.
2. To investigate the guide condition in Huben area, and to find the service fault.
3. To develop a Service Blueprint for Fairy Pitta eco-tourism smart guide in Huben area.

## **Service Design**

The concept of service design first originate from Shostack (1983) in his paper regarding designing service. The article mentions the competition between the firms and how the importance of service emerges over time. Service design could be broken down into service and design. Vargo & Lusch(2004) defines service as using specific skill, knowledge, and ability, to provide value and benefit through action or process. Su & Song (2014) purpose that service is an experience aided by the company or its

system, and is seen as a user-center perspective. Lindbeck (1963) describe design as a plan to create in order to satisfy the needs. Williams (2000) interpret design in an education point of view, as an important method to create tools in order to satisfy people's need, along with improve their ability. From the perspective of service as well as design, one can conclude that both fields emphasis on the user and the importance of satisfying people's need,

Service design is an Interdisciplinary study which consist of different area of expertise along with different methods and tools. It is not a new field of study, but a new way of thinking. Service design utilize visible and invisible medias, to design process or system, to provide a better and complete service experience (Schneider & Stickdorn, 2011). Service Design could use innovating methods to improve on existing service, and to create new service (Livework, 2012). Song(2014) defines Service Design as designing value through co-create network in a holistic point of view, to deliver effective value proposition to all the actors involve during the process, ultimately to achieve a greater gain in a long run. All in all, Service Design is an Interdisciplinary field of study that uses rigorous methodology while emphasis on the importance of value co-creation in a user-centric perspective, in order to deliver a better service for everyone.

An ordinary service processes and be broken down into sequences of related activity in a timeline fashion. A single service process can also unfold into multiple sub process or sequence (Ramaswamy, 1996). In contrast to typical service process, the process of service emphasis more on the service and the interaction between the provider and service consumer, as well as all the related actors in timeline fashion. Shostack (1982) purpose that service blueprint as an effective tool for service design, because it could visualize the different event and touch point of t a service and its related relationship. Service Design is not only a tool for academic research, but also an effective tool that has been tested on enterprises and companies as a method for developing new service. For example, British consult company Engine uses the double diamond (4Ds) to develop their service in 2000. In Taiwan, due to the Taiwanese market's demand, Institute for Information Industry develop a methodology for developing service that is suited for Taiwanese environment in 2007. The methodology is known as Service Experience Engineering (SEE). SEE involve 4 different stages of development, which are FIND, INNOnet, Design Lab, and Living Lab; in order to provide the service blueprint for company to develop further service on.

In conclusion, Service Design is an Interdisciplinary field of study, which utilize a user-centric perspective. With carefully crafted method and tools, service design has produce several effective methodologies, ultimately allowing researchers to design a better service.

### **Information Design and Mobile App for Smart Guide**

The term Information Design comes from Information graphic. It is a method which combines of both graphic and text to explain evidence or data. The meaning now extended to developing a holistic information visualization for user's cognition.(Chen, yu, 2002). The core value of information visualization is communication, Wuman purpose that most data is non-useable by mankind (Jhang , 1989). However when

those data were being processed and designed through an organized means, it could potentially transform into information that has value. By using conceptualization, symbolization, and systematic approaches and methods, designers could communicate large and complicated information. Furthermore, those hard-to-describe pieces of information could be presented by visualization presented through lines, color, graphics, and symbols. Allowing users to absorb massive amounts of information in a short period of time, as well as understanding the design of the information in itself (Chen & Yang, 2008). Information design is a design principle that involves a user-centric perspective. It emphasizes the study, analysis, structuring, and representation of information content, in addition to allowing users to easily understand the information through a visualized means. (Chen & Liang, 2001) In conclusion, information design is a design that visualizes complex information; by using systematic methods and a user-centric approach, information could be processed and transformed into designs that users could easily understand.

Information is also important to the user, especially helping the users to find easily accessible information from a large set of complex information is critical. Below is the principle regarding information design purpose by Chen, Jyun-Wun & Liang, Chao-Yun in 2001:

- (1). Clear and understandable title, with descriptions that are grammatically correct and easy to read.
- (2). Short information, avoid long paragraphs.
- (3). Content organized well, graphics and text must be related to the information presented, to avoid information overload.
- (4). Attract tourists' attention, arouse their curiosity.
- (5). Reference some things that are related to tourists' daily life.
- (6). Describe the entire event's phenomenon, reorganize in a way to become a logical and coherent story or concept.
- (7). Emphasize the theme and unify information.
- (8). Using a unique perspective to interpret and explain insights.

In conclusion, after surveying the rules and guidelines of information design, information design could be summarized by using a systematic, conceptualization, symbolization process, to create an appealing visualization that could arouse interest and provide the user with a better understanding of the information.

Molz stated that tourism is certainly emblematic of a new 'mobility nexus,' even more so now that tourists, travelers, and backpackers are increasingly bringing mobile devices on their journeys and toggling back and forth between mediated and corporeal co-presence with distant social networks (Molz, 2012). In fact, a new term coined "flashpacking" is created by describing the behavior shift from packing everything in a backpack, known as backpacking, to simply packing with technology gadgets and basic essentials as they were able to connect instantly with multiple networks from virtually anywhere through an array of mobile technologies (Germann Molz & Paris, 2013). The change of mobile is developing the new tourism behavior, and affects the tourists' tourism experience. Therefore, mobile guiding is the best way to guide backpacking. Because mobile guiding is provided with no time, no space, low cost and easy to keep, tourists can learn information with mobile guiding in any time and location (Chabra, T. & Figueiredo, J., 2002). Mobile guiding replaces the traditional guiding map, and solves the manpower shortage or no reservation in

advance in ecological area (Wijesuriya et al., 2013).

## **Methods**

This research uses Service Experience Engineering as main methodology for the study. It is a method which utilize various models, methods, and tools to design a proper systematic service. This methodology is widely use on designing new service step by step; it includes 4 steps, including FIND, Innovation Net, Design Lab, and Living Zone. Due to the fact the study only covers the service design portion, the study uses the FIND and Innovation Net as main study.

The study attempt to use S.E.E.'s method and tools to design and plan out a smart ecotourism Service Blueprint regarding Fairy Pitta. The study follows the guideline and methodology of designing service, and design the service blueprint for Fairy Pitta. The study divide the 2 phases into 2 stages, the research stage and design stage. Those 2 stages were then divided into 5 subsets, including contextual inquiry, analyzing data, concept development, context design, and nevertheless, service expansion. During the first step, the researcher mainly focus on the touring experience regarding Huban area and fairy pitta to analysis the needs and the status quo. Later using models to analysis the service pain point and user's need. The second step uses the data gathered in first step, using service design tools to design user's experience design. Using the design guideline previously reference in the literature review, ultimately produce a service blueprint regarding smart guiding tour of ecotourism for Fairy Pitta. The methodology is shown in Figure 5-1.

During the research stage, the study use interviewing and focus group. This study uses these two methods on a pair of married couple and a male backpacker who love ecotourism. We let the participant describe their experience and their need on ecotourism. By using interviewing and observation, the researcher can understand more about user's behavior and contextual inquiry. During the research stage, the researcher uses story sharing and Behavior Model to organize previous data, Story Sharing is a method to create a story for under researcher to get a more in depth understanding of the whole situation. Behavior Model is a model which researcher can understand the relationship between the participant and the whole related service touch point, for the researcher to easily identify the critical touch point regarding the service experience. One can understand the relationship between different actors in a service using Behavior Model, to mark for an important finding for the design stage.

During the design stage, the study use Persona and Brainstorming to develop the concept. By Persona to display the tourist target and behavior of the service in future. The tool display the tourist's identity, personality in final. Researcher can objectively understand the user's need and requirement by Persona. Brainstorming is an open design method to produce many creative ideas by many researchers thinking together for the guiding of Huben area. During the last design stage, the environment design of study use Customer Journey Map to collect the tourist's mood in the Huben area. The Customer Journey Map is a method to display the tourist touching each service touch point in full service process. By the Customer Journey Map, researcher can certainly understand the mood turning in the link of service process, and can understand the factor influencing tourist's mood to certainly improve the step in the process.

The last design stage is service expansion, and use the Service Blueprint method. Service Blueprint is a method which specifically explains each service level, and systematically displays the service process to effectively help servicer to understand the service content. Service Blueprint need to display user, service provider and other related characters. The content show the process from customer to supporter.

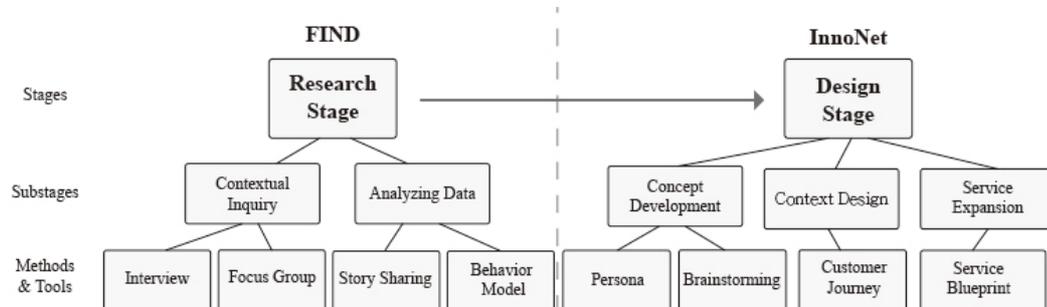


Figure 5-1 : methodology

## Results

During the research stage, researcher uses Interviewing to a couple who like eco-tourism and a male backpacker to describe their need and experience. Researcher understands the user's behavior and context more by observing the content of Interviewing. The study generalizes five points: (1) Participants usually go alone to ecological area, and they seldom participate the group touring. (2) Participants use web searching to know the related information of Fairy Pitta to the Huben area. (3) Participants bring cell phone and camera to record the natural ecosystems, and web searching the information by the photo.(4) Participants hope that there are the target of toilet and visitor center to seek them faster.(5) Participants hope that there are the explanatory signs to understand the local natural ecosystems.

According to the interviewing, researcher finds some points: (1) Most of tourists come alone to watch Fairy Pitta in Huben area, because they read some information about Fairy Pitta on website.(2) A lack of favorable tour guiding map for Ecotourism, causing the tourist have to ask information in ecological cooperative, before they start their ecological tourisms. (3) The purposes of the tourists is enjoying and understanding Fairy Pitta, therefore they take pictures and collect information. According to observing environment and tourist's behavior, researcher generalizes some points: (1) Because the ecological cooperative is under private management, tourists sometimes can't get the guide information on official holiday.(2) A lack of favorable tour guiding targets for Ecotourism, causing the tourist disappointed to watch Fairy Pitta. (3) There are many foreign tourists visiting Huben area in each bird season, however there isn't guide information for foreign tourists. Therefore they always need the narrators to provide Fairy Pitta guide service, they can't bird watch by themselves. After the information of interviewing collection, the research progress to the analysis stage.

On this stage, the study uses Story Sharing and Behavior Model to collect the prophase information. The study uses Story Sharing to other researchers to understand the research topic, and use Behavior Mode to analysis the tourist's behavior in Huben area. The research is applied the Interactive Model in Behavior Model to analysis the tourist's behavior model in Huben area. The data become an important reference

blueprint in each character position and interactive objects. Finally, researcher learns tourists' behavior in tourism that will encounter many problem. For example, they don't know whether see the narrator, can't find the restroom, and there aren't good target to ecological area. Researcher can know the fault from the tourist's Interactive Model.

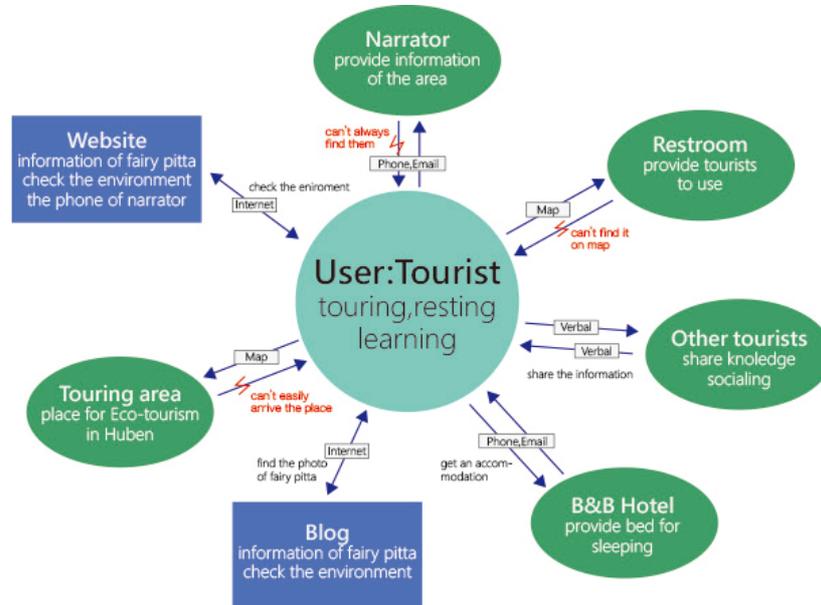


Figure 6-1 : Interactive Model

Time Series Model is one model among Behavior Model. Time Series Model is show time sequence in interactive behavior. According to tourist's behavior process, researcher knows the touch point, communication, interactive objects in full event, then redesigns and adjusts from the process. Researcher can understand the fault and sequence in the process of tourism by Time Series Model. First, they maybe can't get the guide information from ecological cooperative, then can't find the target to birdwatching area. Finally, there aren't explanatory signs in the birdwatching area. The tourists encounter many inconvenience points in the full tourism.

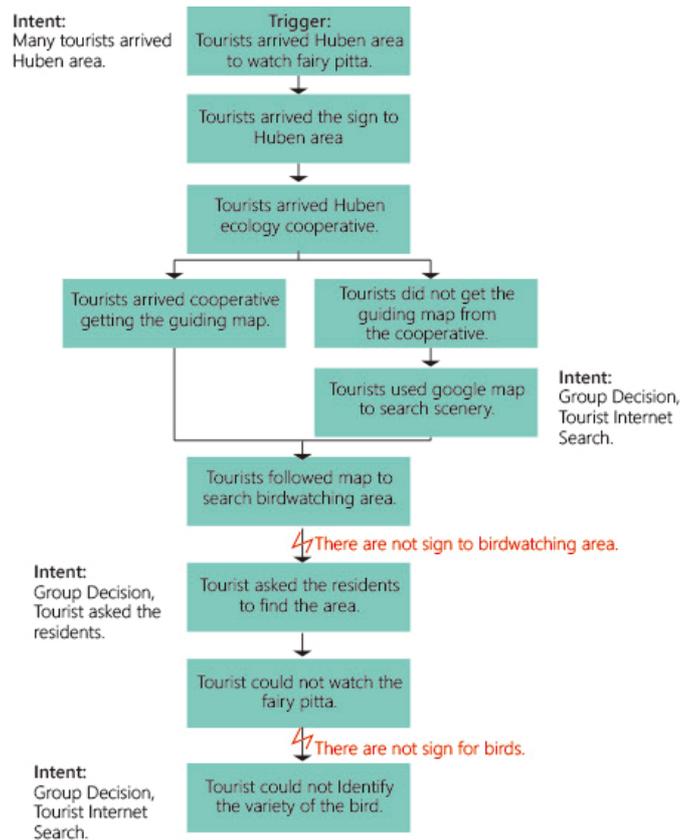


Figure 6-2 : Time Series Model

During design stage, the study uses persona to be the front work for Service Blueprint. Persona is analysis from tourist behaviors with intersect induction, and uses true tourist's information to be the model. The study is applied the college students who likes eco-tourism to be the model. The character's habit is observing animal and plant in normal, and love the nature. He usually travels with family or travels alone in the weekend. Before he start a trip, he will gather information by web searching and discuss trip stroke with friends or family. He uses cell phone or camera to record the scenery, and he also uploads the photo on community platform to share with public. The character is a tourist who like planning, searching and recording by using network.

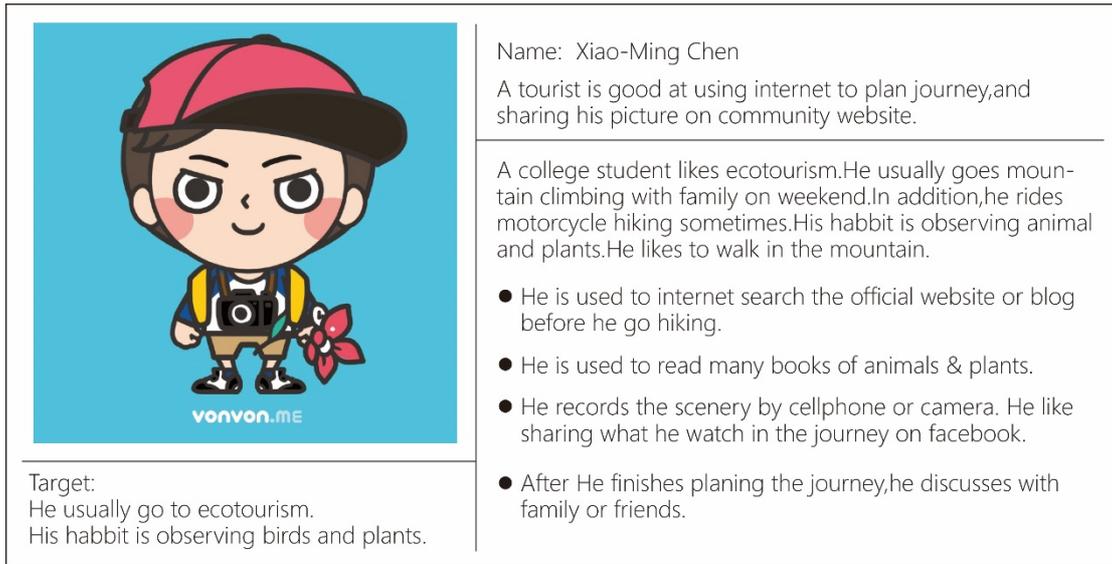


Figure 6-3 : Persona

During this design stage, the research is applied the brainstorming to arouse the imaginative power to make a lot of creative method for the guiding process in Huben area. The research lists the condition and problem in the tourism, like tourists worrying the weather condition and food before departure, and they ask the service center to get some guiding map. The tourists look for the toilet, the target of birdwatching area, and they hope getting some bird information. Against the problems, the research proposes some method to solve the problems, and selects the item to future develop.

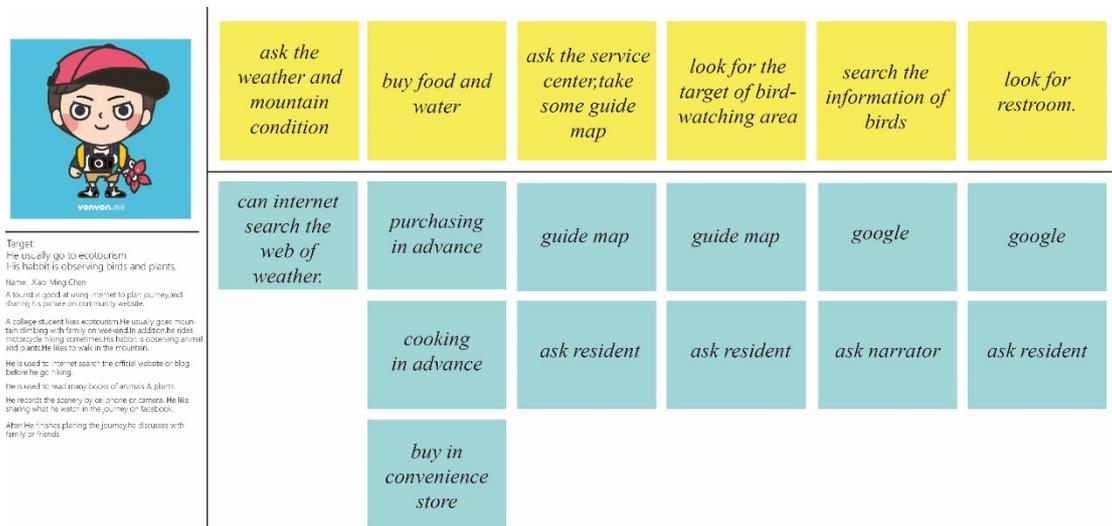


Figure 6-4 : Brainstorming

During the environment design stage, the research is applied the Customer Journey Map to collect the tourist's mood in Huben area. The research can understand the fluctuation of emotion in tourism by the Customer Journey Map. The research collects the point of failure that is not easy finding the target to birdwatching area, restroom and watching the Fairy Pitta in the tourism. According to the Customer Journey Map, the research find the most failed point which is not easy find the target in the eco-tourism of Fairy Pitta.

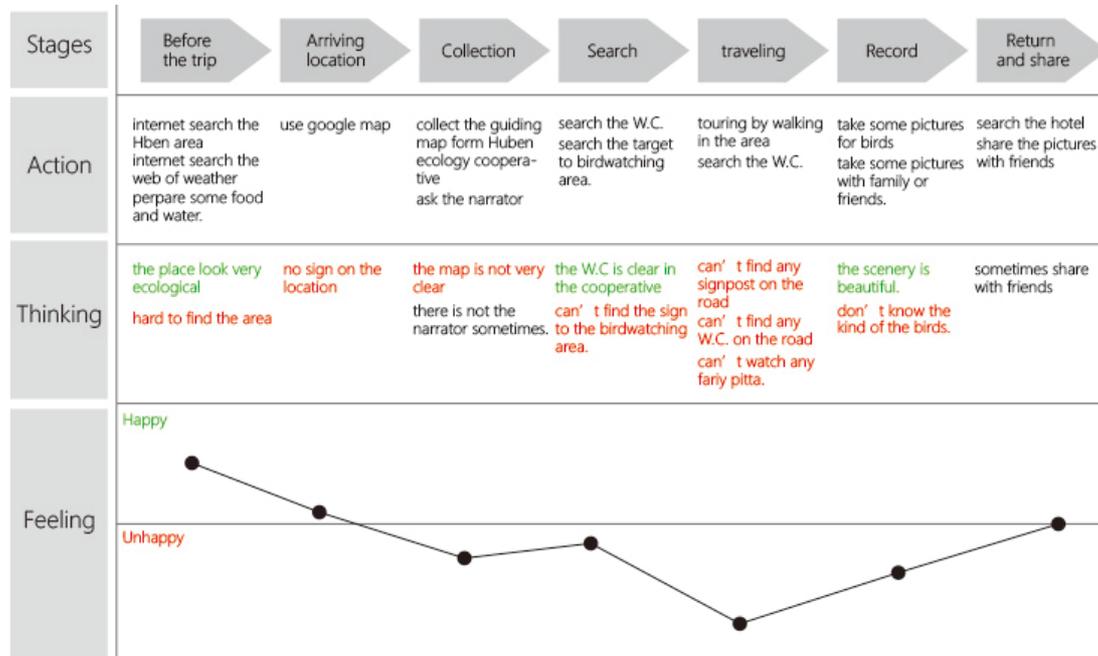


Figure 6-5 : Customer Journey Map

According to the analysis of Customer Journey Map and Behavior Model, the research find the most failed point which is not easy find the target in the eco-tourism of Fairy Pitta. Therefore, the research design the Service Blueprint of mobile guiding with tourist's navigating problem in last stage.

The expansion of Service Blueprint is tourists entering the Huben ecological cooperative, and the tourists will see the explanatory sign of the App download teaching and introduce. The tourist can see the menu after they download the app. The menu display three language selections as Chinese, English and Japanese. They can select a language to next stage. Next stage display the map menu. After they select the map, the screen displays their position by GPS system. The map display the attractions, toilet, rest space and the distance to the attractions. Tourists proceed to the birdwatching area by the guiding map. After tourist arrive the birdwatching area, they can point the bird diagram that shows the birds kind and information in Huben area. By the design of Service Blueprint, the researcher can easily understand the process of tourist behavior and the service process in the tourism. In addition to the Service Blueprint display the service of front stage and back stage, and show the full service process clearer.

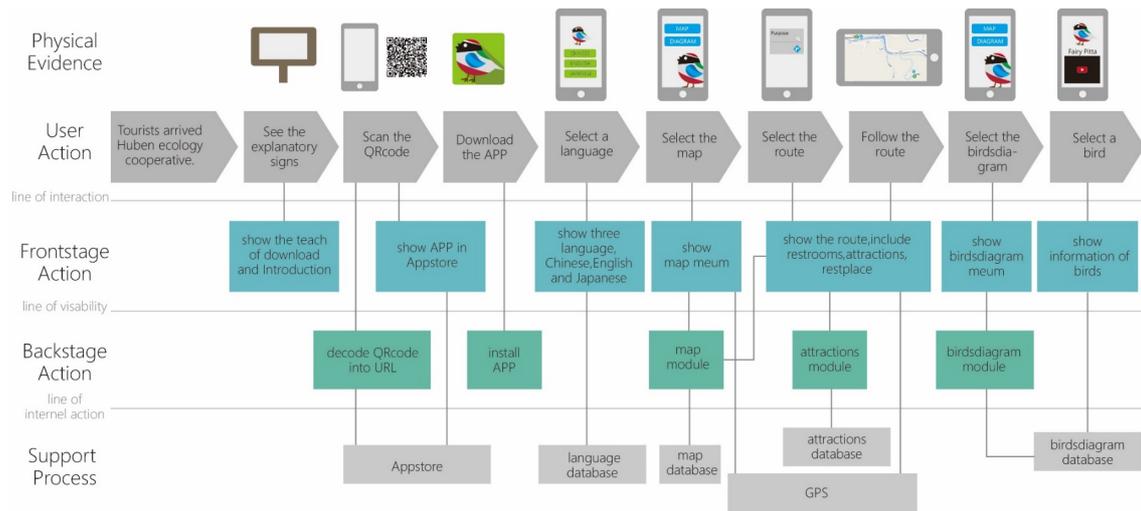


Figure 6-6 : Service Blueprint

## Conclusion

The study uses the method and process in Service Design to analysis the Fairy Pitta's eco-tourism experience in Huben area. By observing the Service Blueprint, researchers accurately pin point the service Touch Point and understand the whole service experience. Therefore, the study infers these below conclusions.

- 1. the study find the most failed point which is not easy to find the target in the eco-tourism of Fairy Pitta.**

Because a lack of good guiding map and targets, tourists usually extra use Google map to navigate in the eco-tourism. Therefore, they can't enjoy and experience their eco-tourism.

- 2. Tourists in Fairy Pitta eco-tourism almost use cell phone as their guiding tool.**

The research find the tourists who like Fairy Pitta eco-tourism most is family or backpacker. The research investigate the backpackers' service experience to find that backpackers most use cell phone to be their guiding tool. Therefore, the research focus on the mobile guiding content to investigate for backpackers. The research find that they hope a clear guiding map, and there are attractions, WC, rest space and service center. At the same time, most tourists want to learn information to experience eco-tourism. Therefore, they hope that there are some bird explanatory signs or narrator service. The serious outward migration in Huben area is like other villages in Taiwan, causing the lack of human resource in Eco-tourism narrator for Huben area. The research combine the smart guiding and diagram for tourists getting the bird information, and solve the problem of a lack of manpower.

### **3. The Fairy Pitta ecological guiding is lack of multilingual service.**

In each summer season, there are many backpackers and birdwatchers all around the world traveling to Huben area to watch this bird causing the tourist to be confuse in the area. Therefore the tourists couldn't have positive experience without information of the Fairy Pitta Eco-tourism. Therefore, the smart guiding App add three languages letting foreign backpackers to watch Fairy Pitta by themselves.

This study focus on the service design approach of an eco-tourism smart guide. By observing the Service Blueprint, researchers accurately pin point the service Touch Point and understand the whole service experience. Furthermore, this study can serve as a reference for future development regarding eco-tourism and smart guide.

## References

Chabra, T., & Figueiredo, J. (2002). How to design and deploy handheld learning. Retrieved from [http://www.empoweringtechnologies.net/eLearning/eLearning/\\_expov5/\\_files/frame.htm](http://www.empoweringtechnologies.net/eLearning/eLearning/_expov5/_files/frame.htm)

Germann Molz, J., & Paris, C. M. (2013). The Social Affordances of Flashpacking: Exploring the Mobility Nexus of Travel and Communication. *Mobilities*, 10(2), 173-192.

Jyun-Hong Chen, Dong-Min Yang (2008). Introduction to Visual Communication Design. Taipei: Quan Hua Publishing, 108

Jyun-wun Chen, Chao-Yun Liang (2001). Information Design and Extension and Application. *Teaching of Science and Technology and Media Quarterly*, 57, 46.

Jyun-wun Chen, Wan-Lai You (2002). Cartography visual communication design. *Design study*, 2, 121.

Lindbeck, J. (1963). Design textbook. Bloomington, TL: McKnight & McKnight.

Livework (n.d.). SERVICE DESIGN, Engage customers and connect the organisation, Retrieved 26 December 2015. from <http://liveworkstudio.com/themes/service-design/>

Marc Stickdorn, Jakob Schneider (2011). THIS IS SERVICE DESIGN THINKING: BASICS, TOOLS, CASE. Taipei: China Productivity Center.

Molz, J. G. (2012). Travel Connections. London-New York, Routledge.

Ramaswamy, R. (1996). Design and management of service processes: Keeping customers for life. Reading, MA: Addison-Wesley.

Shostack, G. L. (1984). Designing the Service that deliver. *Harvard Business Review*, 62(1), 133-139

Su & Song (2014). On the Comprehensive Development of Academic Research Service Design. *Design Periodical*, 19(2), 53-74.

Syu, Pei-Shuang, Li, Pei-Fen, Lin, Ruei-Sing (2013). Fairy Pitta, Council of Agriculture.

Tong-Jheng Song (2014). Essential connotation of Service Design processes and tools. *Design Periodical*, 19(2), 1-8.

Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing*, 68(1), 1-17.

Wijesuriya, M. U. E., Mendis, S. U., Bandara, B. E. S., Mahawattage, K. P., Walgampaya, N., & De Silva, D. (2013). Interactive Mobile Based Tour Guide, Proc. SAITM Research Symposium on Engineering Advancements (RSEA), April 27, 53-56.

Williams, P. J. (2000). Design: The only methodology of technology? *Journal of Technology Education*, 11(2), 48-60.

Wurman, R (1989). *Information Anxiety*. Taipei:Times Publishing