Interactive Story Prototyping to Service Imagery

以互動式故事雛形法為基礎之服務意象體驗

by

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Abstract

Along the fast changes in technology, business should revolute not only products but also services to survive. Service innovation becomes a popular competence that every business wants to have. However, there are the gap between intentions and results. Most of business are lack of resources but forced to do service innovation because of environment factors. The result usually is a failure. This research wants to develop an interactive prototyping tool to help business avoid the risk of investing on innovation by creating their service prototypes in advance. A service is always intangible and this prototyping tool would elaborate the prototype contents in a storytelling way. For business needing unique services or products, we adopt service image as the main concept in constructing the story prototype. In this research, an image represents the attitude of business toward its services or products. The goal of this research is that business can test its image and get new inspiration through the interactive prototyping process.

Keywords: Service Innovation, Interactive Story Prototyping, Emotion Annotating, Image Testing

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CHAPTER 1 INTRODUCTION

Along with population grows up and information technology improves, there are more and more company start-ups in every industry on the earth. Most of them are passionate to build their business but have just a little success. This chapter gives an overview to this research: introduces the background, raises the problems and issues, concepts of solutions, and contributions.

1.1 Research Background and Motivation

First of all, this section mentions two states of business' issue: service innovation and brand image. Doing service innovation isn't quite an easy work and it is lack of tools. We consider prototyping is a convenient tool to pretest the idea before production. If business could have this kind of prototyping tool, they would reduce costs and risks of one new product or service. This section mentions the status of prototyping being used in business.

● Service Innovation

A service is created by the interactions between actors under a governing mechanism (Araomson, 1997). Nowadays, a lot of companies know that selling physical goods is not enough to fulfill with the customers, instead, they want to provide services beyond the goods for an advance profit. There are so many companies searching for a new business model and that's a good way to extend their business by creating new services. However, innovation is not just an easy "Aha" idea.[1] According to resource-based view (Wernerfelt, 1984), a business with more resources to allocate has a higher successful rate on executing the strategy than others.

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[1] Businessweek magazine, 2008,
http://www.businessweek.com/innovate/content/oct2008/id20081020_368485.htm

Innovation as a strategy of a business becomes difficult when it is lack of resources, especially for small and medium business (SMB). Moreover, there are no ideas for SMBs to innovate their business even they have resources to do that. It needs a good methodology to help these kinds of enterprises do service innovation. In figure 1.1, we can see the relationships while SMBs want to do service innovation.
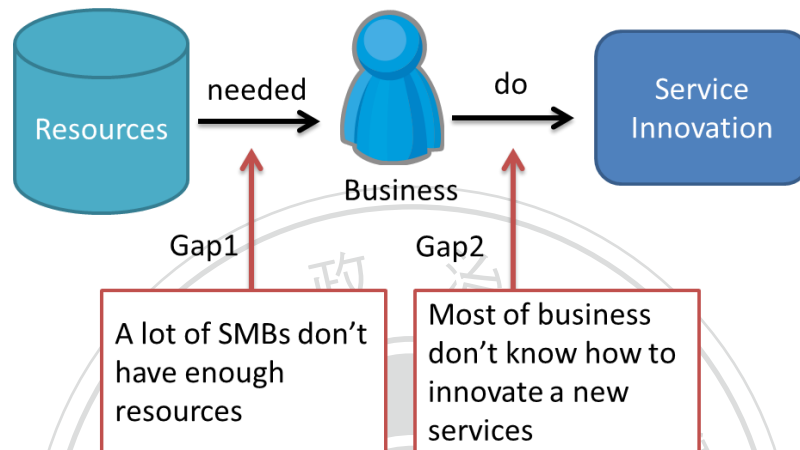
Figure 1.1 Service innovation gaps to a business

● Brand Image

Brand image (Gardner and Levy, 1955) is another issue for business to build their brand. Enterprises try to embed their image into customers' mind. Whenever talking about keywords or seeing the graphics, customers will soon associate the products and brand. In figure 1.2 we know that it is not easy to create the brand image and plant it into everyone's mind. Except understanding marketing rules and strategies, creating a brand also takes time and resources. That's a heavy burden for SMBs. However, it's a good way that business could just focus on product or service innovation instead of finding out the brand image, if the image can be built in a systematic way.

● Prototyping

How do businesses do after they realize what brand image they want to give to consumers? Prototyping, an approximation of the product that considers one or more

dimensions of the idea or concept, is an effective approach to test the new ideas (Blackburn, 2010). There are many types of prototypes in telling a concept, especially a story. A story delivers not only virtual ideas but also a thing that happens in the real world. However, story prototyping will make audiences feel just a virtual tale. So this research would propose a methodology which can connect image and story prototyping. Whenever prototype is closed to the audiences, they will be convinced that this prototype is almost true for them, and follow the steps in the story may lead them to the success. This research constrains the prototype into service innovation and tries to help SMB users create their unique services.
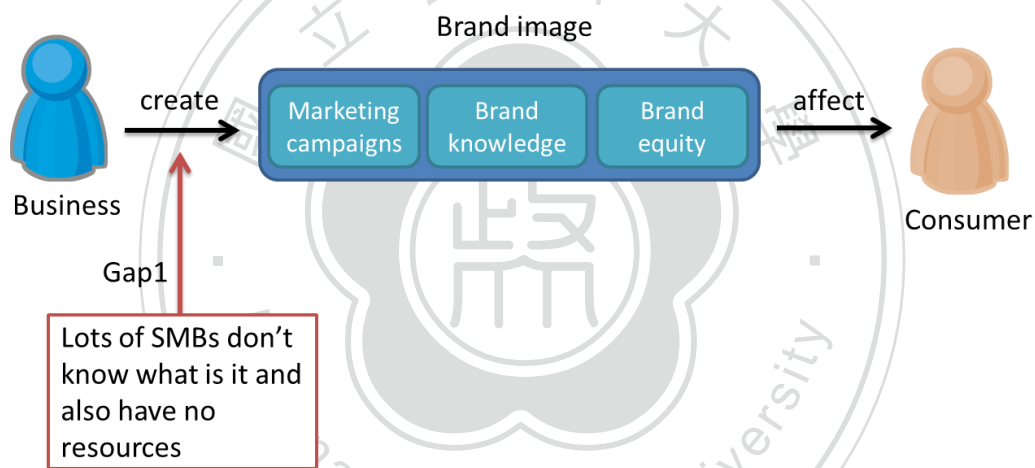
Figure 1.2 Brand image gaps to a business

1.2 Research Questions

In order to provide service innovation prototype to business, it needs to convert innovated concepts to specific service contents, which are different from one to another. Whenever this research uses story prototype to represent thoughts or images, the most important thing is how to understand imagery and create comprehensive contents automatically. It is not easy for a human, let alone a computer. To make prototype closer to reality, user involved is necessary. From the above statements we

could summarize the following problems:

- How to transform the innovated thoughts into concrete description?

- To building a story prototype with context and culture data, how to connect them with innovation concepts?

- How to find a proper structure for a story prototype with user's data?

- For building an interactive service journey, how to measure user's mood through their inputs and how to give the response immediately?

This research would provide solutions to above problems in chapter 4.

1.3 Research Objectives and Contributions

The goal of this research is to automatically create a story prototype for service innovation through service imagery.

In the research, we define service imagery in a business as an idea or a concept for creating a new service. While businesses get new service imagery for them, they can try to build a prototype automatically to realize if the imagery fit the business or not. If businesses feel the image unsuitable or unfeasible for their services or products, they could go back to create or search for another imagery. Business could cost less spending on developing new services or products. That would make business have more wills to do service innovation.

To achieve the objects we have to solve the problems mention in previous part. For the problem "*How to transform the innovated thoughts into concrete description?*" we may find theories in semantic or other proper domains. Second, we can find some story writing theory to solve problems of story structure and content. Third, about service journey design, we could follow the principles from the domain of interactive prototyping.

Given the achievement of research goals, the research contribution is to transfer imagery into story prototypes automatically. These prototypes also connect imagery and service innovation. That will create a new ecosystem for one industry. If one business, especially SMB, has this kind of tool, it can test its thought of creating a new service with low costs. The business put more resources in research and development after owning a good enough prototype. There will be more and more new innovated services with lower cost. And then, the question may change from "*how to do service innovation*" to "*how to improve the service quality*".

1.4 Research Method

As the research questions mentions, this research wants to build a service journey to co-create value with those business users. Interactive prototyping (Cartwright, 1997) is a good for us to create the environment for users. To let users get involved in this service journey and provide their thought through interaction, we try to use a story prototype to connect the experiences of users, who would project themselves as a character in the story. To relate users' image to prototype, we would build a method to annotate image. Then this research would implement an information system using above three methods to justify this research's contributions.

1.5 Content Organization

From Design Science in Information Systems Research (Hevner et al., 2004), the proposal with this framework proceeds as follows:
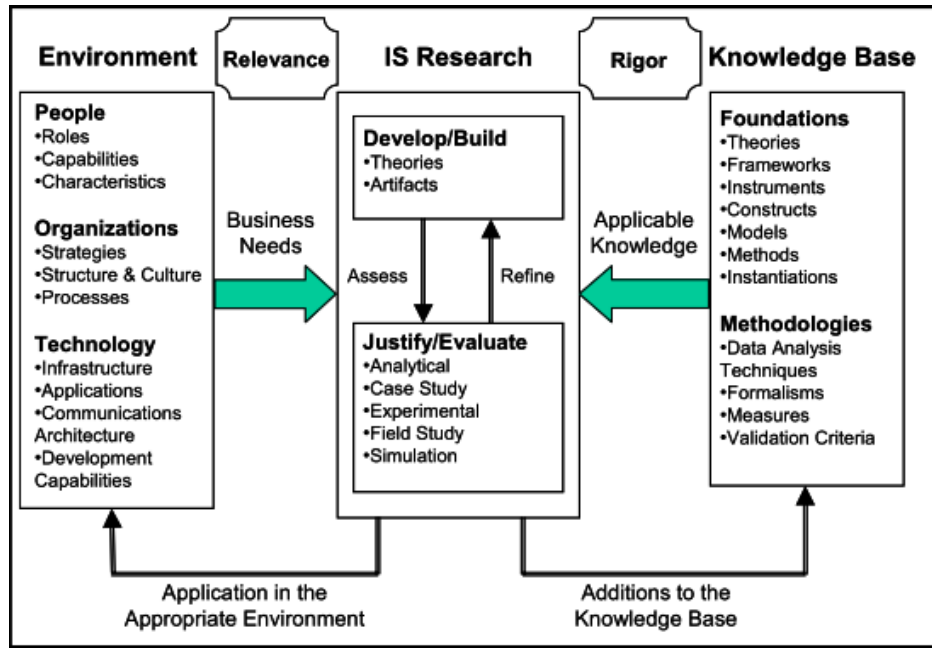
Figure 1.3 Information systems research framework (Hevner et al., 2004)

- Chapter 2 – Literature Review: surveys relating researches which have the similar problems and views the solutions as our basis to extended or create. We review the topics: prototyping, image, and story. With these theoretical supports, we can position this research's significance.

- Chapter 3 – Motivation Application: gives the whole picture of the research project and previous related works, and positions the role this research played in this research project.

- Chapter 4 – Image-based Interactive Story Prototyping: elaborates the conceptual framework and provides the details of the system architecture.

- Chapter 5 – Conclusion: offers a scenario of system usage for better understanding and address future works.

CHAPTER 2 LITERATURE REVIEW

This chapter reviews three topics which are related to this research. The first one is prototyping. In prototyping we describe the literature definition of prototyping and the problems in prototyping domain. This research uses interactive prototyping to develop the method, so this part would mention the benefits of using interactive prototyping compared with other prototyping approaches. The second section provides a list of story theories and their brief introduction and then compares them. A theory would be chosen for our method development. The final section of this chapter is to review the theories of image and the connection to the enterprises and consumers. In this research, we will use the above related theories to construct a model for image-based story prototyping.

2.1 Prototyping

During the creation of any new design, the disparity between the desired outcome and the actual outcome was always under great uncertainty due to the yet unknown fields of the new design. A commonly used methodology to lower the risk of new product development is prototyping – an approximation of the product that considers one or more dimensions of the idea or concept (Blackburn, 2010). Blackburn mentioned the benefits obtained from prototyping as followings (Blackburn, 2010):

● Help the development team to learn whether ideas worked as anticipated or not; if customers are involved, then they can also check the concept fulfilling the requirements or not.

● While conversations and documents might express one's idea poorly, the prototype of the design can boost the communication.

- Integrate the information of the design teams, while the concept might requires multi-disciplinary.

- Function as the milestones of the new design development.

The methodology of prototyping was widely accepted in many fields, examples like system design (Nunamaker, 1991), product/service design (Ragatz et al, 1997), constructions (Brooks, 1987), movies and animations (Suzuki, 1999). However, although prototyping provides plenty of advantages, the design outcome of products, systems and services still fail to meet customer's needs, considering the level of ambiguity of the design requirements and the non-deterministic solution paths (Piela et al, 1992). Aware of this raising issue, Piela and his fellow researchers argued to integrate the user into the design process (Piela et al, 1992).

Some other researchers agree to this notion, but rather extend this idea to an extreme. According to Dym's findings (Dym, 1994), due to the articulation and externalization of the process of design was improving, an concept of "automating the process of design" had appeared, which argues to provide powerful tools to support the customers and let them do the design.

However, Piela et al (1992) argued that in non-routine design, on-going human intervention is required; and when facilitating the customers to do the design through only information systems, the output of the design process will be highly depending on how well the system is. The reason for such arguments is because while it is easy to abstract routine actions of humans into information systems, but it is also easy to wrongly- embed the preconceptions of the system designer of the solutions, no matter it is deliberately or not. While a new design often requires brand new thoughts and linkages between different knowledge and is not able to be supported by the systems, preconceptions of the system designer will jeopardize the design – because it limited

and shortened the user's ability to innovate.

The changing trend of the process of design and the notions Piela et al (1992) have interwoven into a new concept – interactive prototyping (Cartwright, 1997). In interactive prototyping, powerful tools to support the user (or customer) is required; but rather focusing on the system performance, interactive prototyping puts more emphasis on the interaction with the user, which intends to integrate more human intervention to create innovation during the output generation process.

Other than the "innovations from users" benefit, interactive prototyping was also having another great advantages - a good expression tool and an interesting tool (Carbonaro et al, 2007). Due to Carbonaro et al's research, they found that for user which are not good at expressing their ideas, are having good time with using the interactive prototyping tools to communicate with others. Also, in their research, they discovered that users who are using the interactive prototyping method are more satisfied with the result than other methods.

In summary, interactive prototyping is a good method for prototyping for three reasons: more innovative, better communication, enhanced satisfaction. We believe the characteristics of interactive prototyping are good match with our research purpose – creating story prototype for service innovation through service imagery for SMBs. However, Piela et al (1992) and Carbonaro et al (2007) all agreed that interactive prototyping requires powerful systems, which would make the difficulties of development increases. In order to tackle the problem, knowledge related to story writing and brand image must be intensifying.

2.2 Story

This section lists three popular story making theories or approaches, and gives a brief introduction of them.

- Propp's formula (Propp, 1968)

Propp was a college teacher in German[2]. He analyzed the structure of Russian Formalism, a fairy tale narrative approach in Russia[3], and extended the structure to 31 functions. Each function has the guideline of creating a plot of a fairytale story. For example, the function "INTERDICTION" defines the following guidelines: "An interdiction is addressed to the hero ('don't go there', 'don't do this'). The hero is warned against some action (given an 'interdiction')." (Propp, 1968). In the function, a storyteller needs to create a hero character with the action he cannot do. These functions are combined on demand. For example, a storyteller can use function "INTERDICTION" and "BRANDING", which means "hero is branded (wounded/marked, receiving ring or scarf)", to create a story, such as the hero does interdicted action and gets hurt. A storywriter can create different stories through using different functions combination.

- The anatomy of story (Truby, 2007)

Truby is a screenwriter, director and screenwriting teacher.[4] He wrote a series of books and open classes to teach writing scripts. In the book "The anatomy of story: 22 steps to becoming a master storyteller", and gave a systematical way to create a story. In this book, he uses "Character", "Story World", and "Plot" as the elements in a story. To make reader understand the process of creating a story, this book also provides an approach of 22 steps for creating a sequence of plots. A storyteller weaves elements as a story by using the plot creating steps (Truby, 2007).

- Dramatica (Phillips and Huntley 2001)

In the book "Dramatica, a new theory of story", there are two sections of creating a story: one is "the elements of structure" and the other is "the art of storytelling". In

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[2] Wikipedia, 2011, http://en.wikipedia.org/wiki/Vladimir_Propp
[3] Wikipedia, 2011, http://en.wikipedia.org/wiki/Russian_Formalism
[4] Wikipedia, 2011, http://en.wikipedia.org/wiki/John_Truby

the section "the elements of structure", a storyteller can follow the definition of elements to create each kind of element in a story first, such as character, theme, plot, and genre. While having the basic elements, a storyteller can enter the next section "the art of storytelling" for creating a story with these elements. There are four stages in this section: "Storyforming", "Storyencoding", "Storyweaving", and "Story Reception". The book calls these stages are "the four stages of communication". A storyteller can create a complete story step by step with the approach of Dramatica (Phillips and Huntley, 2001).

Table 2.1 Story creating approaches comparison

	Propp's formula	The anatomy of story	Dramatica
The Elements of Structure	Plot	Character, Story World, Plot	Character, Theme, Plot, Genre
Story type	Fairytale	All	All
Systematic steps	31 Functions	22 steps for plot	The Four stages of Communication
Architecture	Semi-structured	Structured	Structured

In table 2.1 we compare the three approaches. Propp's formula is based on the narrative method of Russian folk. It focuses on the fairytale story type and provides a set of functions that can be combined as the story structure. However, it only provides functions to write plots and the other things are relied on the storyteller. We think it is not a structured architecture because it doesn't provide a complete process to create a story. The other two approaches have the similar definition of a story structure. A storyteller can write different types of stories through these two approaches. Both of

the two approaches also provide a systematic way of creating a story. So we think these two approaches are structured architecture of creating a story. Hence, these approaches are proper ones, except Propp's formula, to utilize for developing story creation methods as attempted by this research.

2.3 Image

Image, or imagery, is defined as a form of mental representation which allows the human mind to retain and manipulate the information extracted from its environment in Psychology (Denis, 1991). In this section, we discuss two topics: brand image and service image. A brand image is related to products of one business. When a business provides services or products, we have to know service image.

● Brand image

Gardner and Levy gave the notion of brand image a formal introduction: an awareness of social and psychological nature toward "products" (Gardner and Levy, 1955). After that, a lot of researches investigated brand image, especially in marketing domain (Dobni et al., 1990). Dobni et al. analyzed the researches of brand image and grouped the researchers by their points of view: Blanket definitions, emphasis on symbolism, emphasis on meanings or messages, emphasis on personification, emphasis on cognitive or psychological elements (1990). Although researchers have different points of view, they still emphasized on the survey of consumers' attitude, such as symbolic, meanings, cognition, toward products.

● Service image

In business, a service is the non-material equivalent of a good (Cardoso, 2009). Consumers would buy and experience the intangible goods. As mentioned in previous part, a brand image is related to consumers' attitude toward products. A service image can also be related to consumers' attitude toward services. However, the effect factors

of consumers' attitude transfers from tangible goods to intangible goods, such as experience and memory.

As the goal of this search is to help business do service innovation by prototyping, service image is an important part of this research. With the review from brand image, we can give a realization of service image for our work.

Chapter 3 MOTIVATION APPLICATION

The topic of this chapter is to give a brief introduction of existing research project called "uVoyage" (Yang, 2010) and its related research project "imageCons" which this research is belong to. The introduction part of "ImageCons" provides the whole picture of this research project and focuses on the architecture. The following chapter presents more detail of methodology of service imagery prototyping.

3.1 uVoyage – the imagery-based service innovation platform

uVoyage, the imagery-based service platform, applies thoughts to reality. SMBs can define feelings which they want to give to customers, and uVoyage helps them come true by using an information platform to find the appropriate partners to cooperate through image. Business can develop and improve their services or products if they can provide the image to deliver to consumers.

The most important issue uVoyage faces is: businesses don't know what kind of image they want to give or they misunderstand the meaning of image. So this research would like to provide a methodology or theory to discover, create, and define the imagery of services. It saves time and money that business users can get and test their service imagery before entering uVoyage platform. The new research project is called "ImageCons".
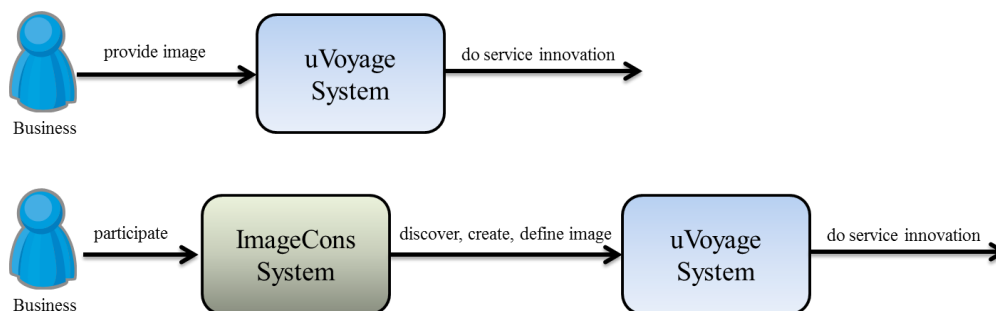
Figure 3.1 change of operation flow

3.2 ImageCons System Architecture

ImageCons project provides a service platform for users. This platform would co-create goal imagery through iterated processes: understand, motivate, inspire, co-develop imagery, assess imagery, and test imagery (Figure 3.2). Process "Understand" is to understand the culture and environmental context for finding innovation changes. "Motivate" provides a short story to stimulate coming people and motivate them to innovate with next processes. "Inspiration" would be the inner intangible level through previous process. "Co-develop imagery" provides the imagery model and co-create the goal imagery through iterated interactions. "Assess imagery" measures the co-develop goal imagery, and identifies the gap between users and system. "Test imagery" would like to provide an interactive way to test the imagery through story.
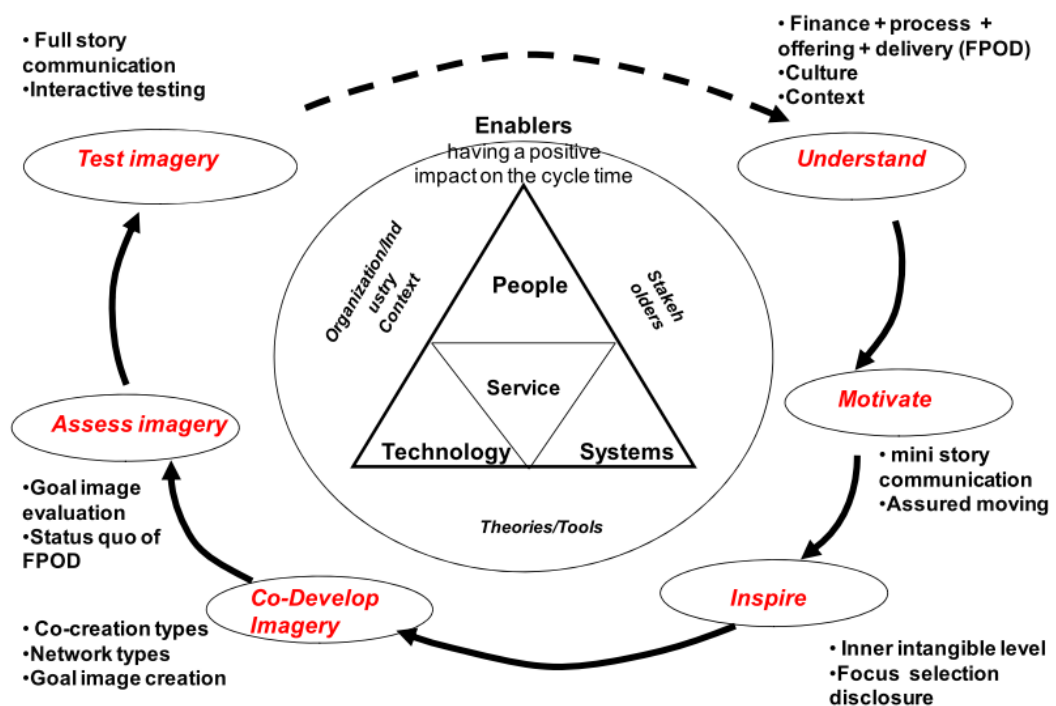
Figure 3.2 The Architecture of Goal Image Creation (Yuan, 2011)

According to the processes, the platform contains six sub-systems: Culture

Analysis, Interaction Pattern Analysis, Motivation Story Generation, Goal Imagery Evolution, Interactive Story Prototyping, and Imagery Assessment.

Culture Analysis analyzes from the business culture side and Interaction Pattern Analysis are related to the process "Understand", and their goal is to find the chances from these analyses. Motivation Story Generation" is related to the processes "Motivate" and "Inspire", and its goal is to provide a motivated story to motivate users. Goal Imagery Evolution uses an interactive way to co-create goal imagery, and it is related to the process "Co-develop imagery". Interactive Story Prototyping interacts with users for a story prototype of goal imagery, and it is related to the process "Test Imagery". Imagery Assessment, as an important support role, measures imagery from macro and micro levels, and it is related to the process "Assess Imagery". Figure 3.3 shows the interactions between these sub-systems.
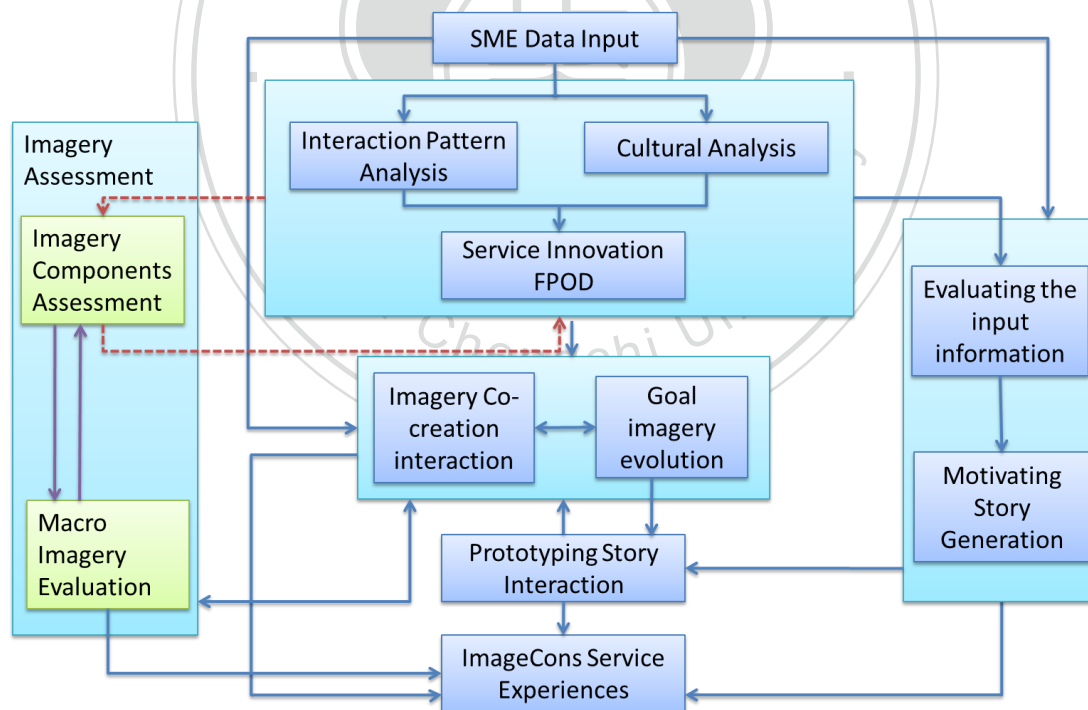
Figure 3.3 Information Flow in imageCons System

Figure 3.4 shows the relationship between ImageCons system and uVoyage system.

uVoyage System		

Imagery Assessment	Interactive Story Prototyping	
	Imagery Co-creation interaction	Goal imagery evolution
	Motivating Story Generation	
	Interaction Pattern Analysis	Cultural Analysis
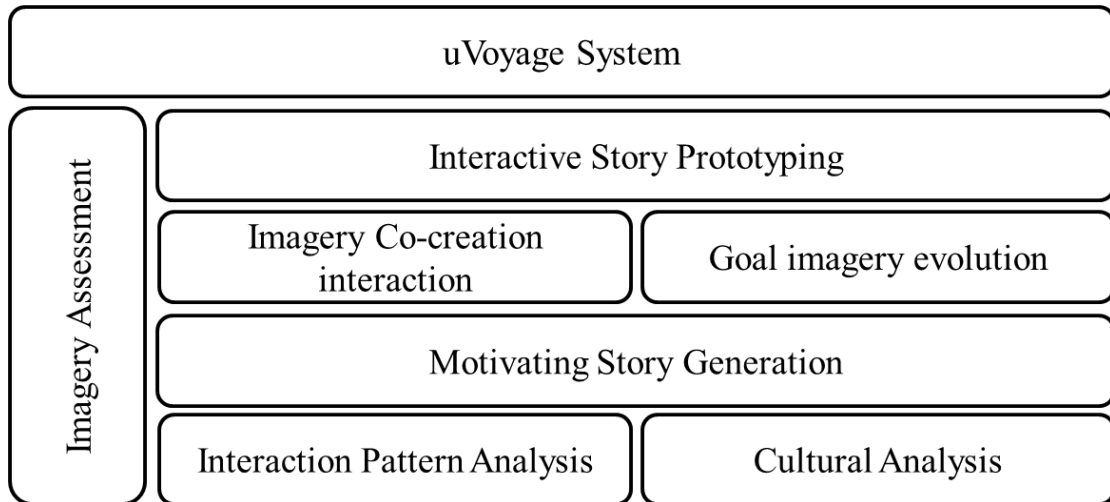
Figure 3.4 Layer-based System Architecture with "uVoyage" system platform

This research focuses on interactive story prototyping. As the architecture in Figure 3.3 and Figure 3.4, interactive story prototyping needs inputs from the other sub-systems. So we give assumptions to continue this research work and the details will be provided at chapter 4.

- Goal imagery would be the input for be the goal of the story prototype.
- The analysis data from Interaction Pattern Analysis and Cultural Analysis has the same format, or can be transformed to, as story materials.

CHAPTER 4 IMAGE-BASED INTERACTIVE STORY PROTOTYPING

This chapter puts forward the details of interactive story prototyping to service imagery. It is separated into two parts. First, it elaborates the relationships between different foundational concepts. Second, it describes the solutions and their implementation. Throughout the implementation we would make this research's method logical and specific.

4.1 Conceptual Framework

The underlying conceptual framework of this study is shown in Figure 4.1 that offers the basic concepts of the following methods. The primary goal of this research is to build a prototype for SMBs' services or products with their image. So the foundational concepts of this research begin with prototyping.
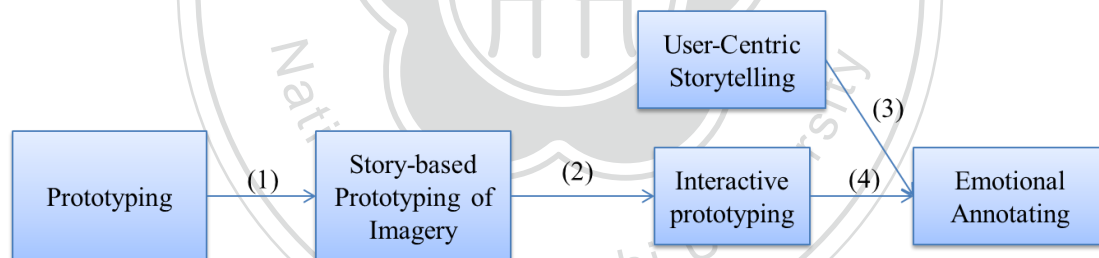
Figure 4.1 Conceptual Framework

- Prototyping

"You only know how to build the system when you have built it – and then it is often too late." (Floyd, 1984)

Business could prevent failures or pretest the new idea by using prototyping. A "prototype" literally means "first of a type". That means prototyping is to produce model for production in advance. (Floyd, 1984)

- Story-based Prototyping of Imagery

It is hard to express the feeling of one image, so does services which are always

intangible. This study tries to construct a prototype as a story. Through this kind of text expression, it can convey the meaning of image. And also, user can give feedbacks to improve the prototype.

Every reader is delegated a role unobtrusively in a story (Braun, 2003). If there is a role in story with similar experiences to the reader, he or she would feel impressive and familiar, and they would like to trust the story, or a prototype. As the reason mentioned above, this concept connects user-centric storytelling to bring users' experience into the prototype.

In "Mixed prototyping for product assessment: a reference framework", Monica Bordegoni, Umberto Cugini, Giandomenico Caruso and Samuele Polistina (2009) separated prototypes and users into two part in their framework: virtual and real.
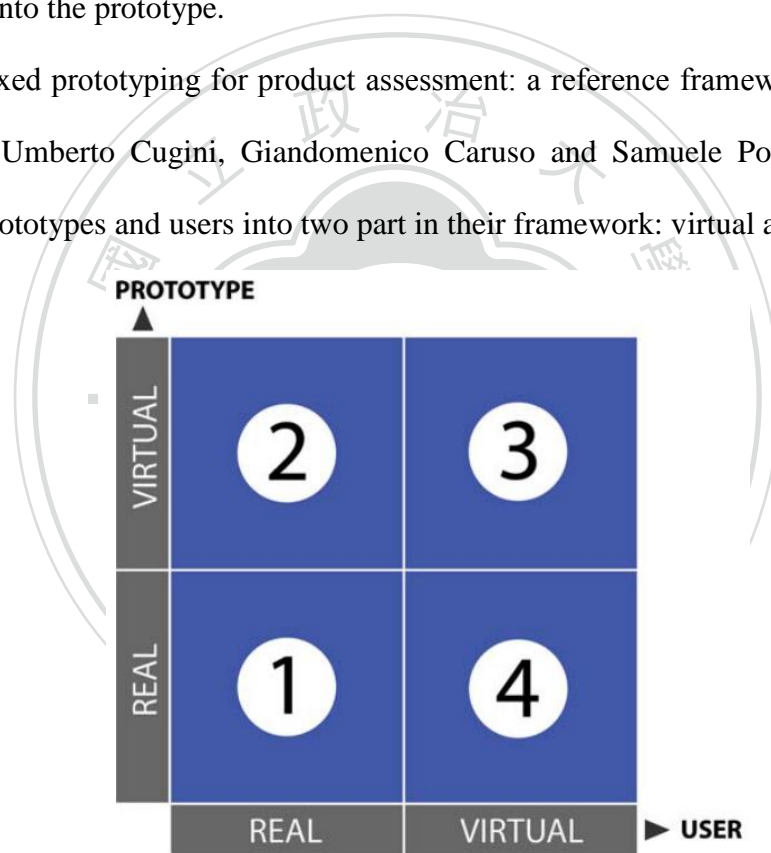
Figure 4.2 Reference framework for mixed prototyping (Bordegoni et al., 2009)

This research aims to help SMBs do service innovation by using story prototype. The user here is "Real". The prototype is "Virtual" because of prototypes used for representing the service innovation directions. When the user is "Real", there would be lots of interactions with the prototype. A user can also modify the prototype for

improving functionality and feasibility. So "Interactive Prototyping" is the extent topic of this concept.

● User-Centric Storytelling

There are two main topics raised in the story theory—Dramatica (Phillips and Huntley, 2001): one is character and the other is theme. We can know characters and themes are important in a story. Good characters and plots make audiences have resonance and project themselves into the story. If materials in a story could easily link to audiences' experience, it would then be easy to make audiences feel impressive. This concept explores the relationships between user and story materials.

● Interactive Prototyping

As mentioned previously, users interact with the prototype for the purpose of improving. Something interactive is effective for users to do the improvements. An interactive tool is a good expression for users because of being easy and suitable, and it is also interesting to users (Szafron et al., 2005). Another reason for using interactive prototyping is that SMBs do not have information technology background. A new technology might be too complex to be used. This research needs an easy interface to interact with users to finish their prototypes. In the end, we will implement an interactive story prototyping system.

There is a goal first before prototyping. As the assumption mentioned in chapter 3.3, there is an input called goal image which becomes the goal of service innovation in the business. Image, or imagery, is defined as a form of mental representation which allows the human mind to retain and manipulate the information extracted from its environment in Psychology (Denis, 1991). However, image is too abstract to implement. For example, a user wants to build a service to let customers have the feeling "Paradise". That's difficult to express the feeling because we cannot tell what a paradise is.

According to color emotion researches and color psychology studies, given an image is known psychological words, or colour-emotion words, these words can be mapped onto colors separately, such as red for dazzling (Ou et al., 2004). According to another extended research, non-colour-emotion words can be mapped to colour-emotion words through semantics. Hence, we can translate formal words to colour-emotion words or colors (Shin et al., 2010). Figure 4.3 shows the processes from non-colour-emotion words to colors with RGB values.
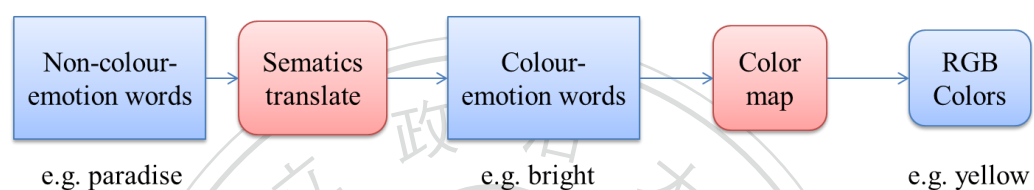

Figure 4.3 Processes of translating non-colour-emotion word to a color

When the goal image can be decoded into a specific definition, we can control more factors in the next steps of prototyping. As we have emotion words, we can continue our work to emotional annotating concept.

● Emotional Annotating

As the previous concept mentions, there are some emotion words from the goal image. We can connect the emotion to the character in a story. In the story theory Dramatica (Phillips and Huntley, 2001) provides a lot of elements about the story structure. We will focus on the character dimension and develop structures for the story. Then we can find story structures if we have the connection between characters and emotions. This research provides methods to annotate emotion to a specific structure for the different goal of stories. Therefore, constructing a story prototype can follow the steps of creating a story in Dramatica (Phillips and Huntley, 2001).

4.1 System Architecture

As mentioned before, the goal of this system is to construct a prototype of service imagery. For helping users get their desired results, the system is designed to interact with users, real time analyze data, and provide appropriate contents of the prototype. To achieve this, the system architecture is built to develop the whole system.
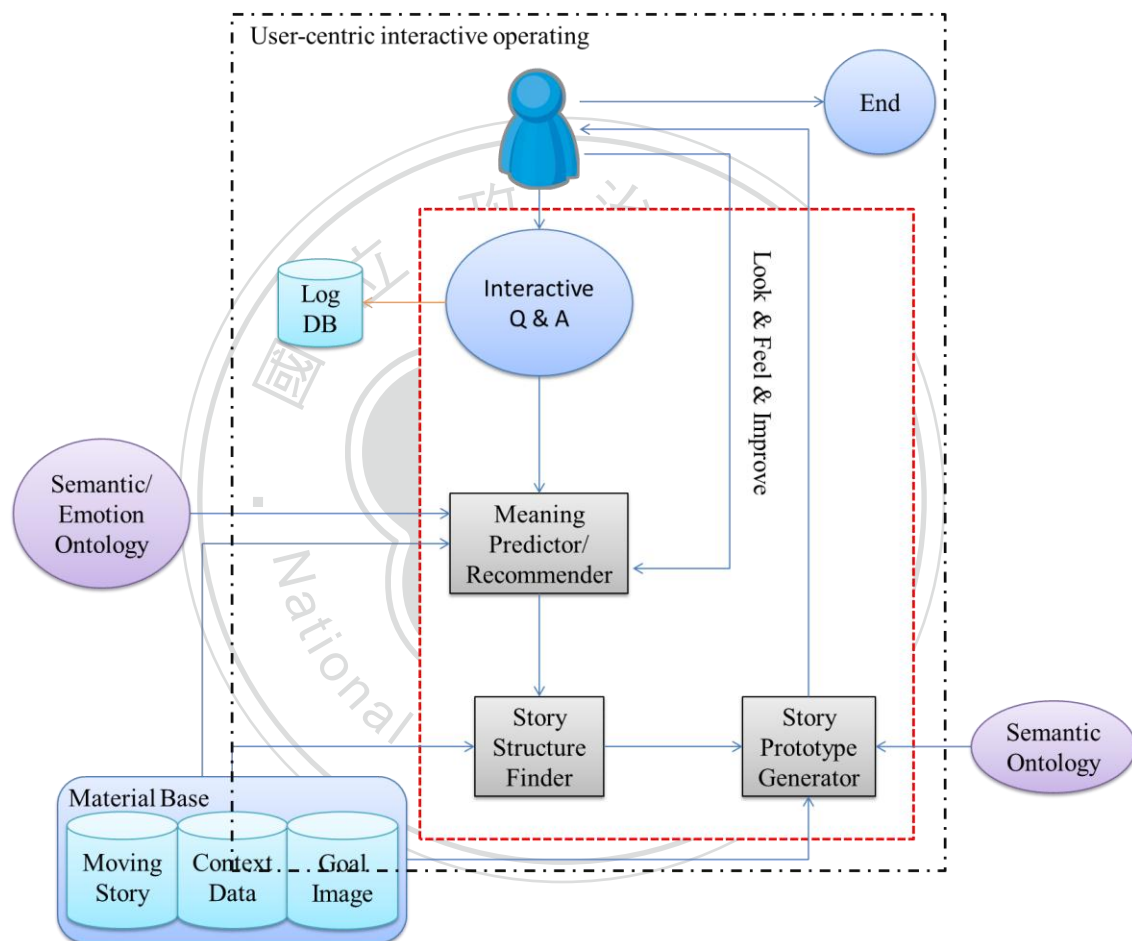

Figure 4.4 System Architecture

In Figure 4.4, there four main parts in the system (the red frame): user-centric interactive operating, meaning predictor (or recommender), story structure finder, and story prototype generator.

- The purpose of user-centric interactive operating is to make user feel get involved. This module is related to the concept "Interactive Prototyping".

- Meaning predictor (or recommender) is to predict or to recommend the meaning of image in user's mind, and to make the story prototype more proper for the SMB user. This module is related to the concept "Emotional Annotation".

- Story structure finder is to find a logical structure for the story through story theory and service innovation basis. To make the story is not just a story; the story is a feasible innovating prototype. This module is related to the concepts "Emotional Annotation" and "Story-based Prototyping of Imagery".

- Story prototype generator is to fill up the structure by proper materials. This module is related to the concepts "Story-based Prototyping of Imagery" and "User-Centric Storytelling".

The following sections provide details of each module.

4.2 User-centric Interactive Operating Module

There are 3 parts in this section: interactive questionnaire, and interactive parameter adjustment, interactive two-way feedback. Doing the questionnaire can gather the data from users. Adjust parameters can let users modify to fit their requirements. Interactive two way feedback can give users a good experience. Interactive questionnaire is the first part of this whole system, but the other two parts are common functions for the system. Interactive parameter adjustment is called when the system needs it. Interactive two-way feedback gives or receives messages while the system or user has the requirement.

- Interactive questionnaire

As the assumptions mentioned in chapter 3.3, this information system needn't collect culture and context data because they are the inputs at the beginning. However, the data may not totally fulfill the next processes. This part would give some questions dynamically to fill the gap. The log database would record all the

interactions, and provide data for data mining to improve reliability and validity of questionnaire.

There are two types of questionnaire: one is culture and context data, such as culture traits or activities; the other is personal traits of the user, such as characteristics. All the questions have the precondition that it is not contained in the input data. The story prototype would connect to users' experiences by this data and make users feel impressive. Another goal of questionnaire is to know what direction of the story theme to guide. The user with positive attitude will have a wider scale prototype than passive users. This function is the start point of this system.

- Interactive parameter adjustment

Parameters comprise two types: one is about the story prototype, and the other one is about system configuration. Story prototype parameters affect the output of story prototype, such as emotion words. System configuration parameters affect the computing in each module, such as searching range value. We will introduce these parameters in the next modules.

- Interactive two-way feedback

This function can send messages both system side and user side. From the system side, it can give recommendations to users and guide them to use this system. From the user side, users can give feedback to the interface. In the future we can improve the recommends or usability of the system. Both types of feedbacks would be recorded to the log database. This database can be mined for the improving guiding rules and user interface. This function also provides a protocol as a service for others of this research project.

4.3　Meaning Predictor (Recommender) Module

This module supports users to find a new meaning of their goal image. Through the new meaning they choose, users can modify the prototype with system's guide. This module contains three functions: mapping onto color-emotion words, calculating colors' distance and searching next possible word. Figure 4.5 is the data flow diagram of this module.

In the introduction of interactive concept we mentioned that there are color-emotion words (Ou et al., 2004) and non-colour-emotion words. These colour-emotion words come from Color Image Scale (Kobayashi, 1992). Color Image Scale is a coordinate system for those colour-emotion words. Each word owns a RGB value and an index, like positions, in the two dimensions coordinate system. One axis is from "warm" to "cool", and the other is from "hard" to "soft" (Figure 4.6). The word is warmer and has higher red value if its position is near the left side of Color Image Scale (Kobayashi, 1992).

Mapping onto color-emotion words needs to use a semantic database to correspond non-colour-emotion words to colour-emotion words. Then it can find colour-emotion word's color and its index on Color Image Scale, from database. Calculating the distance between two colour-emotion words not only gets the distance between colors, but also detects position and direction of each other. While having the coordinate information of a colour-emotion word, searching next possible word can infer the color changing direction. With above three steps, this module would give users a set of colour-emotion words as recommendation of prototype modification.
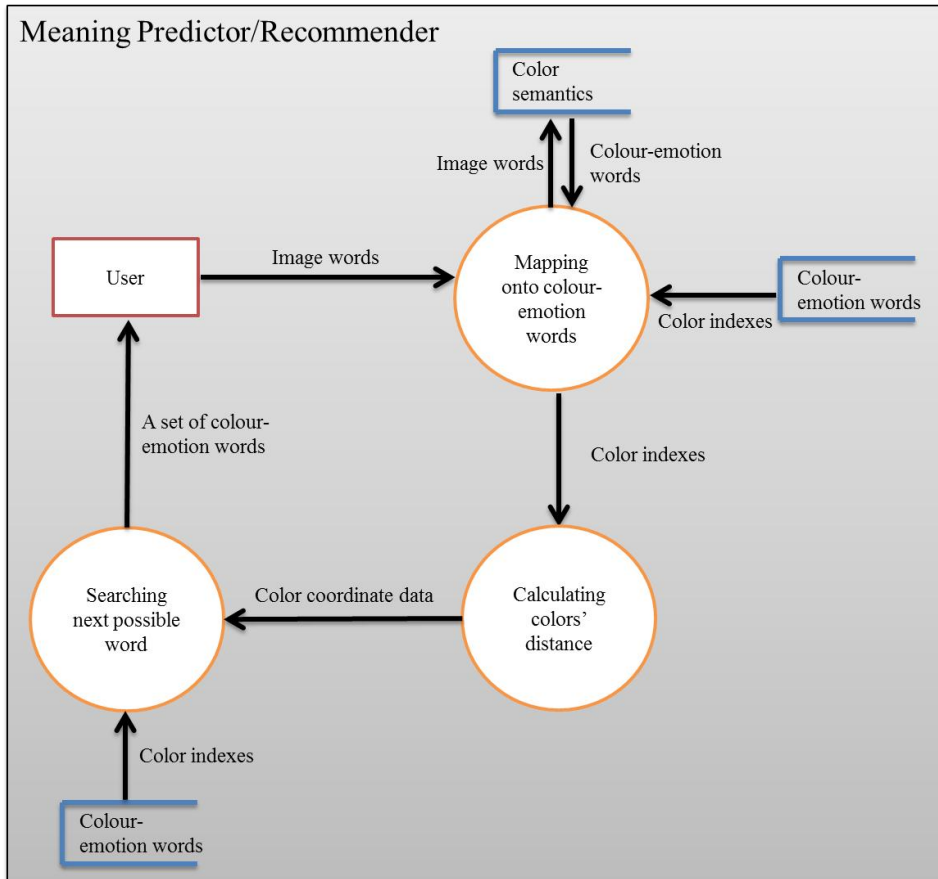
Figure 4.5 Level-0 Data Flow Diagram of Meaning Predictor/Recommender
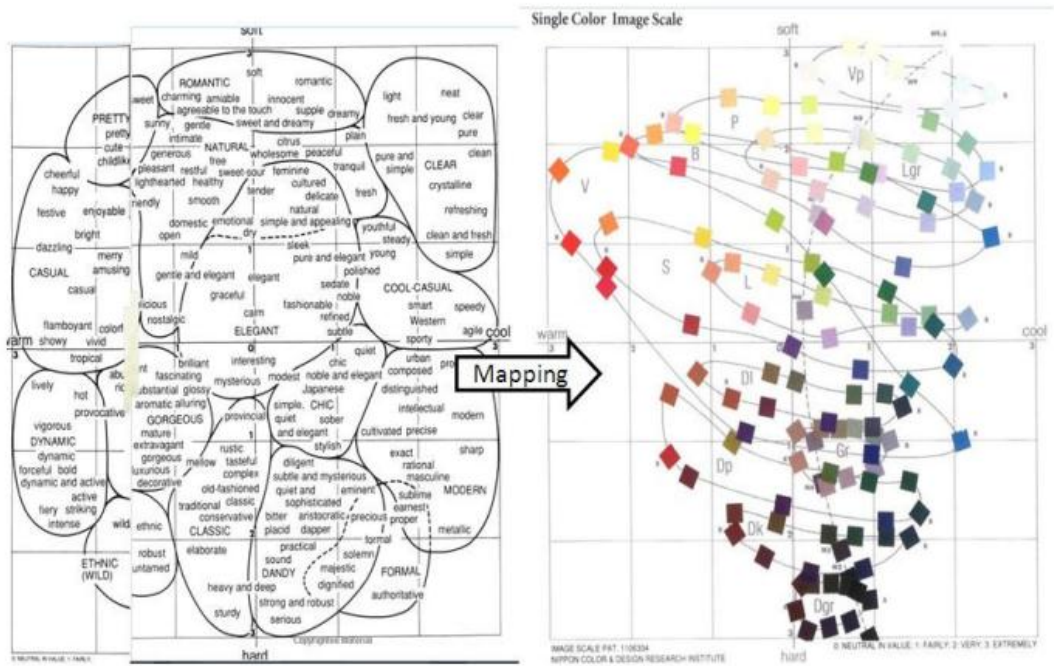
Figure 4.6 Concept of mapping emotional words onto colors (Yang, 2010)

- Mapping onto color-emotion words function

In Figure 4.3 we synthesize two researches to let a word be mapped to a colour-emotion word and a color with an index on Color Image Scale.

Shin et al. further extended Ou et al.'s research for finding the factors of predicting people's emotion from visual features (2010). In this research, we can follow the approach of Shin et al. to build a semantic database to convert an image word to a colour-emotion word by the abstract meaning of emotions (Figure 4.7). A colour-emotion word extracted from a non-colour-emotion word is sent to next step.
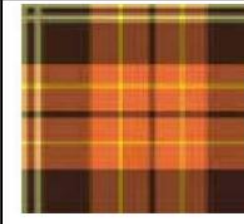
High-level semantics (the terms of abstracting emotions)	Romantic	Cute	Classic
High-level semantics (the terms of object)	Flower	Bubble	Plaid
Visual keywords (the terms representing features)	Pink, curve line and fan-shape	Pink, violet, blue, green and circles	Brown, orange, yellow and straight line
Images			

Figure 4.7 The semantic level of images (Shin et al., 2010)

- Calculating colors' distance function

If it is first time to enter this function, this then means there is no history data and the module will jump this step to the next.

On the other hand, this function would have two inputs: indexes of current color and previous color. A user can have two colors which are from colour-emotion words, when he or she is not the first time enter this module. The color come from previous goal image is called previous color. In this step, it defines a color-vector as the output. A color-vector has following attributes: one is distance which represents the relevance;

the other is position and order that means the direction.

A color-vector

Previous color index

Distance

Current color index
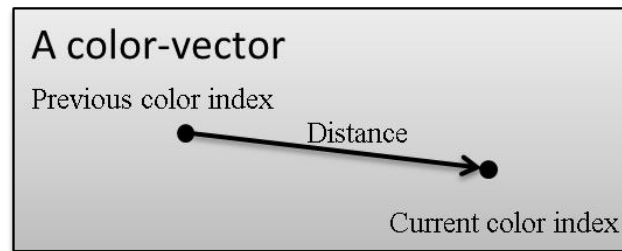
Figure 4.8 a color-vector

● Searching next possible word function

For searching, we need a searching range. Fortunately, there are about 180 color indexes, and we can get a mean "k", which is the average distance between every two colors, to be the default searching radius. Users can adjust this parameter if they want more/less elements in the recommendation set.

As mentioned in previous function, there are two states when entering this function: one is having no history data; the other is having history data. In state one, this function uses index of current color as the center and searching range "k" as radius to draw a circle. Then it uses the circle to find color elements which matches the circle. In state two, this function uses color-vector to drawing a point which has the same direction and the same distance, which is from previous color to current color in Color Image Scale coordinate system. It draws a line by using current color and the new point. This function uses every point on the line as the center and searching range "k" as radius to draw circles, and then matches the color elements. Then this function would find the nearby color elements for recommendation.

After finding color elements, this function maps them on to colour-emotion words as the output data and then end the process of this module.

```
Step 1: Ask for modification of k
Step 2: Check the status and input
Step 3: Searching colors by using color vector
IF status is having no data THEN
                CALL DrawCircle(Center=ColorIndex₁,Radius=k) RETURNING Circle1
                CALL SearchingElements(Range=Circle1) RETURNING
ColourEmotionWordsSet1
                Return ColourEmotionWordsSet1
ELSE
                CALL DrawingNextPoint(Vector=ColorVector1) RETURNING Range1
                CALL SearchingElements(Range=Range1) RETURNING
ColourEmotionWordsSet1
                Return ColourEmotionWordsSet1
ENDIF
Step 4: Mapping onto colour-emotion words
Step 5: Return a set of possible colour-emotion words
```

Figure 4.9 Pseudocode of searching next possible word function
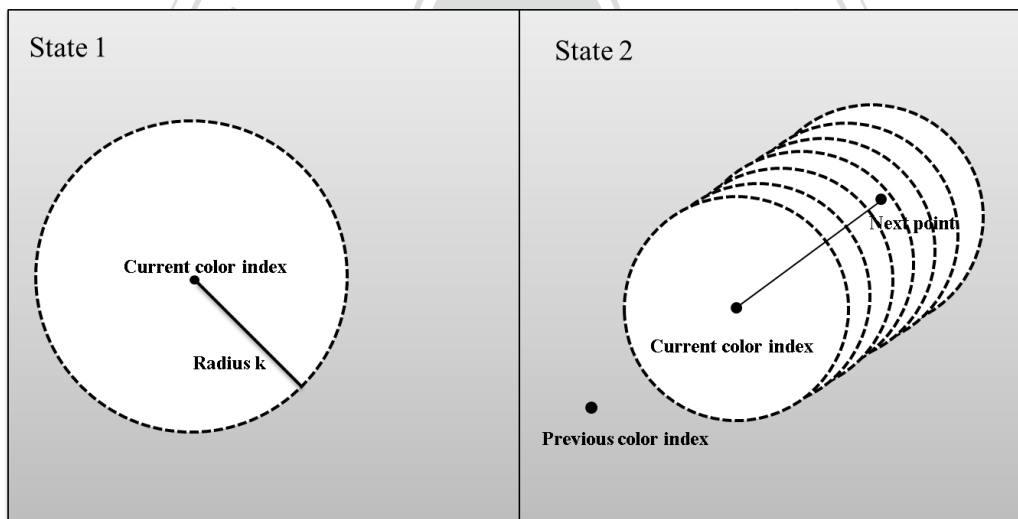

Figure 4.10 searching range of each state

4.4 Story Structure Finder Module

Writing a story needs to determine a story structure at first. This module finds a fit structure from the structure database in advance. The goal of this research is to help SMBs do service innovation and we will use the types of innovation (Keeley, 1999) to be the frame of developing the structure elements.
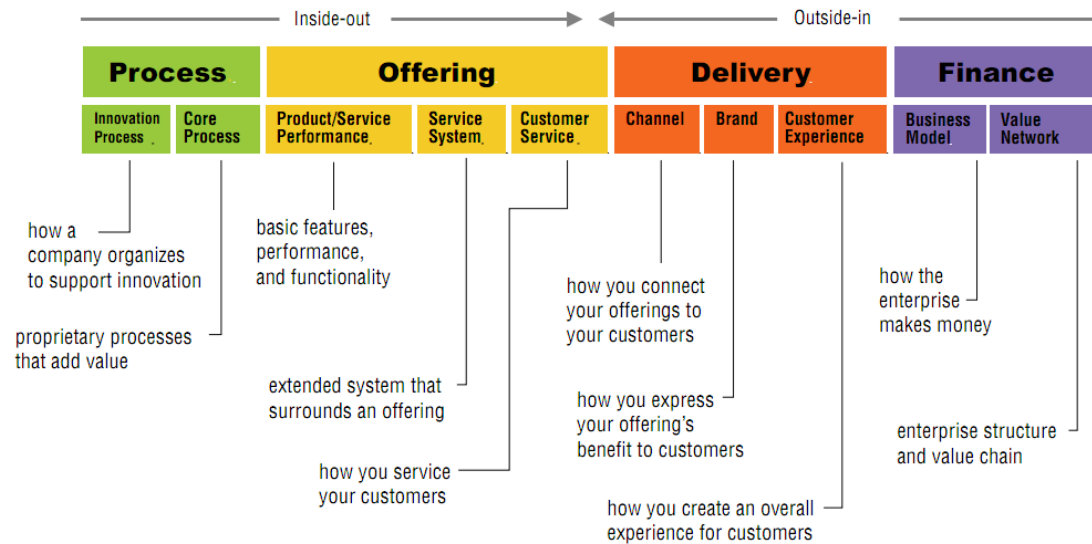

Figure 4.11 The Ten Types of Innovation (Keeley, 1999)

We use the approach of the story theory, Dramatica (Phillips and Huntley, 2001). In the theory, a character has four phases in one story: having a purpose first, being motivated by some reasons, using a methodology to achieve the goal, and evaluating the result. This theory composes a character of four dimensions, which are "Purpose", "Motivation", et al "Methodology" and "Evaluation", each of them has 16 elements inside (Figure 4.12). Dramatica uses these four dimensions to shape a character like real people. According to dynamic pairs, a pairing method in Dramatica, these elements can be paired one by one. A character element in one set has other three elements with the same relative position in the other sets. For example, we choose the element "Consider" in "Motivation" set as the material of building a structure, and another element mapped to "Consider" in "Methodology" set is "Certainty" because they are in the same position of the set. (Phillips and Huntley, 2001)

"Ten innovation types" is a direction for users to think about their innovation (Keeley, 1999). We combine these types with the elements of "Methodology" set in Dramatica and will build 160 structures in the "Methodology" part of a story (10 innovation types multiple 16 elements of "Methodology"). As mention before, each element in one dimension can be mapped to the other three dimensions with the corresponding position of element. Based on this reason, when we use an element from "Methodology" to build a structure, we can have three additional elements from the other three dimensions (Figure 4.13). So there could be 160 pre-built structures as the basic materials in this module. These structures could be attained from successful business cases in every industry. These structures which come from successful cases would be defined as an innovation type with the element of "Methodology" by expert's opinion. We consider that people would be stimulated by successful cases. They feel concepts of innovation if we choose the cases with innovation types. In addition, choosing structures with Dramatica's rule would let these structures easily be categorized. That is, this research will provide such kinds of proper story structures using the aforementioned way of searching for appropriate structures.

Purpose Set

Knowledge	Ability	Actuality	Aware
Desire	Thought	Self Aware	Perception
Order	Equity	Inertia	Projection
Inequity	Chaos	Speculation	Change

Evaluation Set

Proven	Theory	Effect	Trust
Hunch	Unproven	Test	Cause
Accurate	Expectation	Result	Ending
Determina-tion	Non-Accurate	Unending	Process

Consider	Logic	Pursuit	Control
Feeling	Reconsider	Uncontrolled	Avoid
Faith	Conscience	Support	Help
Temptation	Disbelief	Hinder	Oppose

Certainty	Probability	Proaction	Inaction
Possibility	Potentiality	Protection	Reaction
Deduction	Reduction	Acceptance	Evaluation
Production	Induction	Re-evaluation	Non-acceptance

Motivation Set   **Methodology Set**

Figure 4.12 elements in different set (Phillips and Huntley, 2001)

This module can start from finding a composite structure after having the materials. In last module, a goal image is mapped onto a set of colour-emotion words, and users have to choose one as the input before the starting process of this module. As the same approach provided in chapter 4.4, we can map a colour-emotion word onto an element in "Purpose" set by ontology. With the element in "Purpose", this module can determine the elements in "Motivate", "Methodology", and "Evaluation". According to users' culture and context data, the system can also know the innovation direction. After the above steps, this module could find a basic story structure as the output. And then this module ends its process and goes to next module.
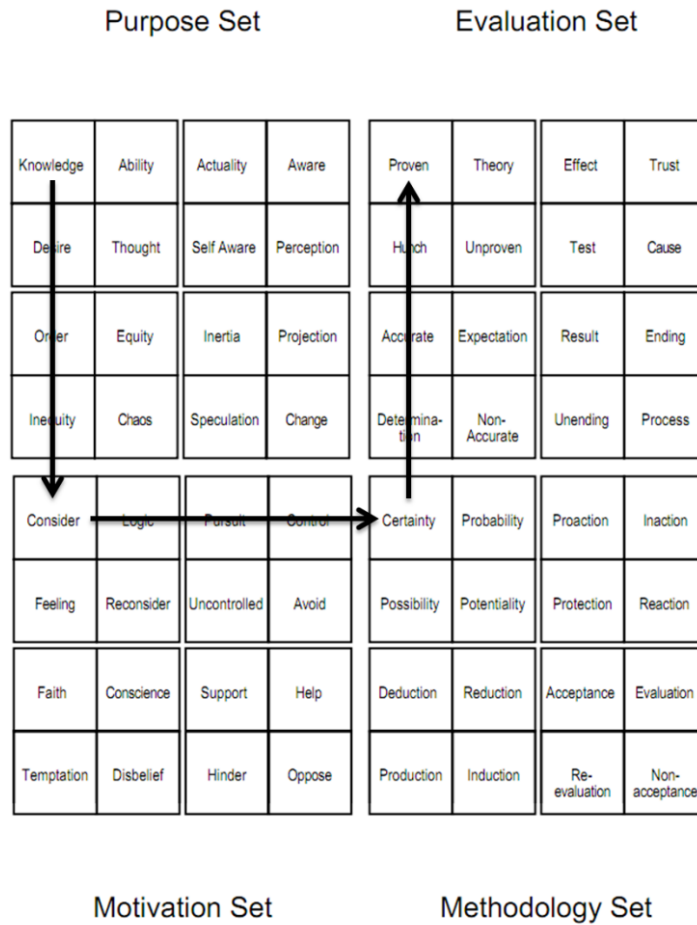
Figure 4.13 Elements map in Dramatica (Phillips and Huntley, 2001)

Purpose Set				Evaluation Set			
Knowledge	Ability	Actuality	Aware	Proven	Theory	Effect	Trust
Desire	Thought	Self Aware	Perception	Hunch	Unproven	Test	Cause
Order	Equity	Inertia	Projection	Accurate	Expectation	Result	Ending
Inequity	Chaos	Speculation	Change	Determination	Non-Accurate	Unending	Process
Consider	Logic	Pursuit	Control	Certainty	Probability	Proaction	Inaction
Feeling	Reconsider	Uncontrolled	Avoid	Possibility	Potentiality	Protection	Reaction
Faith	Conscience	Support	Help	Deduction	Reduction	Acceptance	Evaluation
Temptation	Disbelief	Hinder	Oppose	Production	Induction	Re-evaluation	Non-acceptance
Motivation Set				Methodology Set			

4.5 Story Prototype Generator Module

As the system architecture shows in Figure 4.4, this module is the last step of generating a story prototype and then the system will give the prototype to the user. In previous steps, we have extracted the meaning from goal image and defined a story structure. (Figure 4.14)
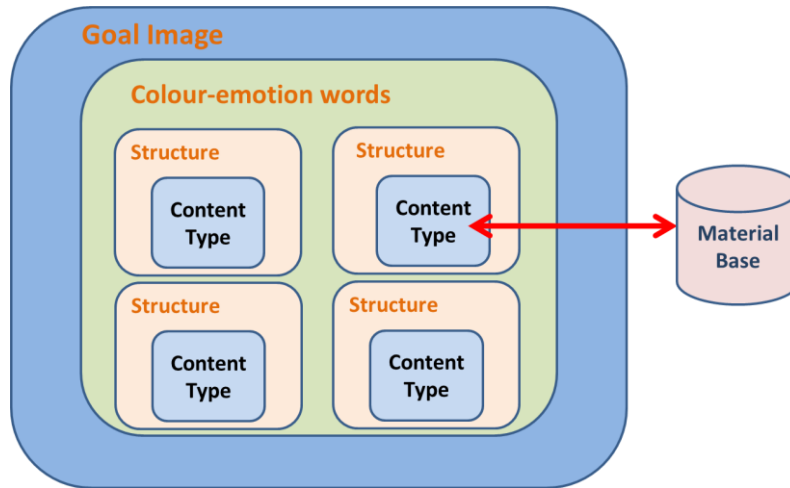
Figure 4.14 Levels of each element in a story prototype

A story structure defines a lot of content type to be filled. A content type is the category of content linkage. The system can link contents and story structure through content types. In Figure 4.14, there are lots of terms underlined. Those are content types. These types will be mapped to materials we have now. In this research, we define three abstract content types according to elements of structure in Dramatica (references in the brackets after each type): character (Character), event (Theme and Plot), and personality (Genre). Character type decides the role in the story. Event type defines events and activities of the story. Personality gives the condition in making a decision. These three types also have attributes to define their detailed contents from the definition of Dramatica. For example, character type has the attributes "main character", "impact character". "Main character" could be the main character act like a hero and "impact character" may affect the actions or events to main character in a story.

Sentence1	Main Character will do Event1, because Event1 Reason
Sentence2	To achieve Event, Main Character needs Supported Activity1
Sentence3-1	Actitity1 needs Resources of Activity1, Main Character can collaborate with Sub Character.
Sentence3-2	Sub Character has already run Actitity1 for years, Main Character can compete with it by Event2.
…	
Sentence End	Main Character finally fulfill the goal of Goal Image.

Figure 4.15 A Sample of story structure

Before mapping to the contents, the system needs an inference engine in advance. An inference engine can decide fit and feasible resources to allocate by rules. Through inferring the content linkage, the story content would be reasonable. With the story structures we will build, we define four types of rules in this engine: event order, character relationship, culture traits, and timestamp. These rules can be mapped to abstract content types: character relationship to the content type "character", culture traits to content type "personality", event order and timestamp to the content type "event". Inference engine can have a better judgment with these rules. Event order rules define the queue of event happening, which can prevent unreasonable events happened. Character relationship rules consider the relationship of competition and cooperation, which can determine the character that can fulfill the event. Culture traits rules define the personality and the business culture. The engine references the traits for a precise inference before inferring the next decision. For example, we can see sentence 3-1 and 3-2 in Figure 4.15. If the user has the culture trait "careful", the inference would choose sentence 3-1 for collaboration instead of competing. Timestamp rules checks specific events, such as festivals or holidays, to make sure the inference is reasonable. Timestamp is an independent rule and can be existent with the other three rules.

There are a lot of input data in this module, like culture and context data. A data

base, called material base, would record all the inputs and give them an abstract content type and an inference rule type through semantic database. In table 4.1, the first row of input data "discount of service" comes from the culture data, and it is judged as an "event" content type and "event order" rule through the semantics.

The inference engine follows definition of content type in the story structure and maps the real reference to the structure from the material base dynamically. (Figure 4.16) For instance, we have a "Main Character" content type in the structure. After inferring, the engine can map it to "Mr. Wang", which is a character type and has the relationship "boss of hostel". This module repeats the inferring step till the structure finished filling up.
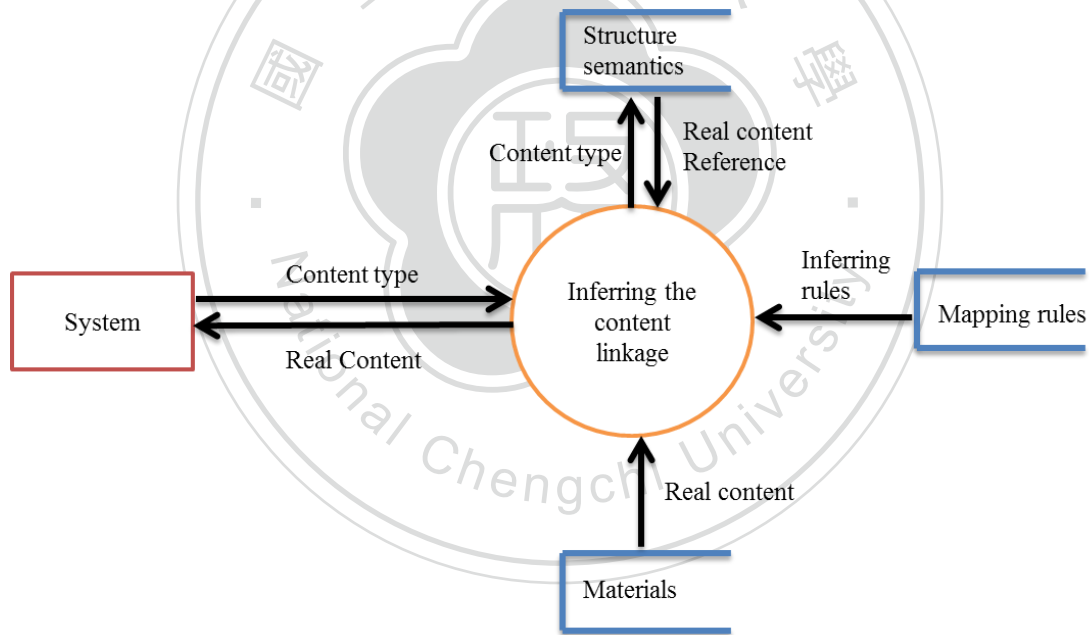
Figure 4.16 Data Flow Diagram of Inferring process

Table 4.1 Samples of input to material base

Inputs	Abstract Content type	Inference rule type
Discount of service	Event	Event order
Youremap hostel	Character	Character relationship
Mr. Wang is Brave	Personality	Culture traits

Users can get a story prototype after the journey in operating the tool. They can repeat the whole process for trying another goal image, or end the process if they have inspiration in the journey and prototype.

CHAPTER 5 An Application

The power of interactive story prototyping was described in previous chapters, it proves to be an excellent method for SME users to express their thoughts and stimulate motivations for the service innovation. To give a better imagination of the interactive story prototyping, we intend to provide a using scenario of the system in this chapter; also, we will summarize aforementioned concepts and elaborate the future research tasks at the end.

5.1 An Application Scenario – Tourism industry

Kenny is a hostel host owner in Puli, Nantou, with a small, clean and warm hostel. Although he is maintaining a fine impression of his hostel, business has grown harder for the past few years. One of the main reasons is because the fierce competition: price war and fast-paced evolution of other hostels; the competing market of hostels in Puli makes Kenny's revenue decrease drastically. Examining the differences between other tourist-attracting hostels and his, he discovers what have them distinguished: other hostels are branding themselves through providing services that have distinguished feature which impress every tourists and anyone who have seen their advertisements, while Kenny put his focus on improving the quality of the accommodations but neglecting the importance of making customer impressive. Realizing this, Kenny starts trying to figure out some distinguished images that his hostel might be able to provide.

After days of thinking, Kenny comes up with some innovative ideas; however, the idea is still vague without testing and how to fulfill the image is also beyond his reach. For Kenny, without an actual scenario to test the idea makes him hesitated to practice his new idea; to improve his confidence of success, he needs something that

can give him the vision of the future. At the end, he finds the interactive story prototyping system.

Through the interactive story prototyping, Kenny tests his idea with ease. He input several information of his situation and list some ideas, and the system automatically combines and interweaves them into a story. The story has a good organization, it starts with describing a dilemma of a hostel owner, then the owner figures out some ideas to confront his problems; also, it describes how the owner performs his ideas, like how much money the owner would invest into a specific equipment that the image requires. At the end of the story, it illustrates how the hostel goes well through the images by listing detailed figures of the outcome.

Kenny manages to create a story through the interactive story prototyping system that is somehow attractive, but the story still not convincing him and requires plenty of revising. The interactive story prototyping system surprises him with its ability to adjust the story content with changing the keywords of the story, through the fast-revising feature of the interactive story prototyping, Kenny testes plenty of ideas he already have, and even more ideas pop out during the story making. Through the interactive story prototyping system's quick revising feature, he can immediately test his ideas whether fitting to his current business or could be future improvement directions or not. But the most fabulous part is yet to come, for Kenny, the story serves as a blueprint of how to implement his image; in other words, all he needs to do is to follow the story plots to build his hostel's image; the implementation details are just something Kenny needs, because this always stops him from taking actions before. With the help of the interactive story prototyping, Kenny now acts with confidence.

The following figures demonstrate the service journey of story prototyping system when Kenny uses it.
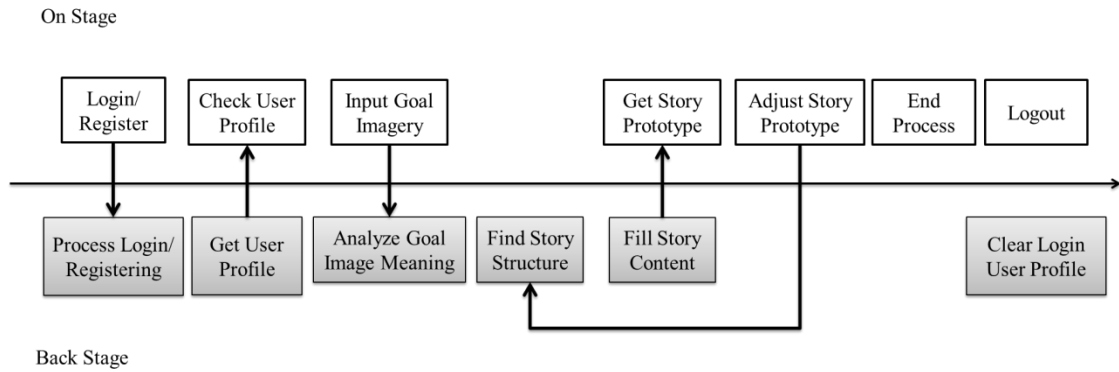
Figure 5.1 Service Journey of Story Prototyping System

When Kenny comes to the system, he gets a description of how to use at first. Then he can choose to login with an existent account or register a new account. (Figure 5.2)
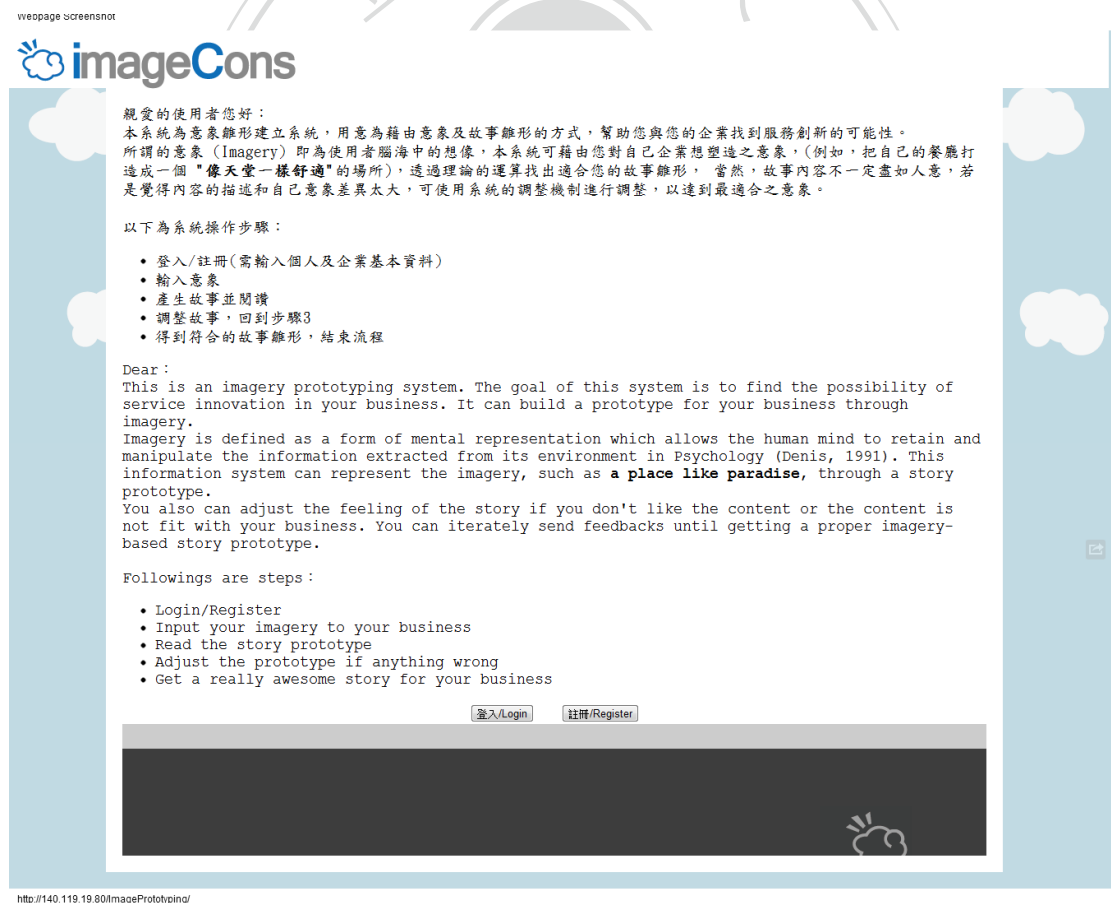
Figure 5.2 Story Prototyping System Description Page

Kenny is the first time using this system, so he creates a new account. In this process, he has to enter his profile and company data. Then our system creates the

account for him. (Figure 5.3)

Figure 5.3 Story Prototyping System Register Page

He signs in with his account. Our system will check the account and provide the profile preview in the next page. After confirming his profile, he needs to enter his goal image of his business. (Figure 5.4 & Figure 5.5)

Figure 5.4 Story Prototyping System Login Page

Figure 5.5 Story Prototyping System User Information Page

When our system receives the goal image input data, the system will find the meaning of the goal image by mapping the image onto one specific adjective by its semantics. In this step, Kenny inputs a goal called "ease in the kitchen". The Meaning Predictor Module maps this term onto a Color-Image Scale "calm", and the Story Structure Finder Module uses "calm" to find a proper story structure in the "Purpose" set which comes from Dramatica. The structure in "Purpose" set "equity" is found by the Color-Image Scale "calm". Along with "equity" structure, another three structures: "Conscience", "Reduction", and "Expectation" are found for composed of a complete story. The system fills the structure with user profile such as company, industry, name and gender by using Story Prototype Generator Module to make Kenny feel like he is the main character in this story (Figure 5.6).
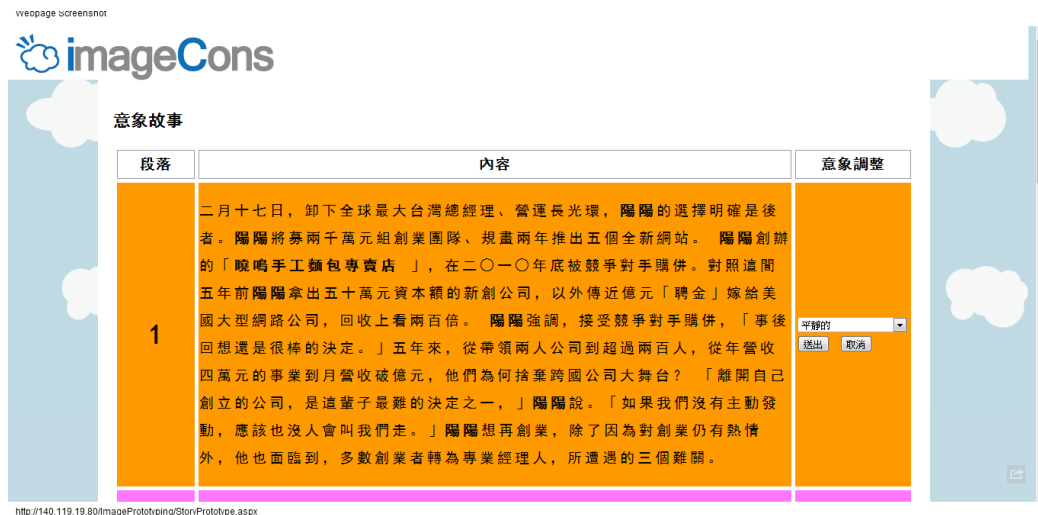
Figure 5.6 Story Prototyping System Story Prototype Page

When Kenny reads this story prototype with the meaning "calm", he gets an inspiration that he can decorate the hostel with natural features. Although this prototype gives Kenny a new idea, it is not good enough for his business. The Meaning Recommender Module provides a set of adjectives as options for user to change the prototype. So he decides to change prototype feeling to another adjective "amusing". The system use story structure module to processes this new input and finds a new structure to provide a new story prototype for Kenny. In the first story, our system makes a "calm" style prototype for Kenny. In this story, Kenny has to do a lot of decisions to survive in the market. He thinks this is not his characteristic on business. In the next story with amusing style, Kenny starts his business from nothing. That's similar to his experience. He comes up with the passions in the beginning, and is reminded of the original intention, breaking through the bottleneck.   This story is then regarded as a better story prototype. Kenny gets a new content for him and his business. (Figure 5.7)

Figure 5.7 Story Prototyping System Story Prototype Page after Adjusting

Kenny continues this process until he gets enough fulfilling ideas with the story prototype content. After having satisfied content, Kenny finishes the process and logs out his account to leave the system.

Now Kenny gets a pretty good innovation idea from the story prototype without any expends. He plans to design a new service for consumers to raise the renting rate by 15 percent. He starts to make his business a new feature.

CHAPTER 6 EVALUATION

In previous part, we propose ideas and mechanisms of developing an information system for research objects. We have implemented an imagery-based story prototyping system after that. This chapter provides evaluation for the system to justify the information system's performance. We found six successful cases which covered 5 innovation types and 6 structures for the experiment. The 5 innovation types are service, product system, product performance, brand, and channel. The 6 structures of "Purpose" set are desire, order, knowledge, inequity, change, and aware. With these limited sets of structures, we can still evaluate the methodology's ideas. After the evaluation we would know which type of story attracts the users. Increasing the structure database is believed to make the system provide more vivid and attractive contents.

In this chapter, first of all, we elaborate goals and reasons of evaluation into propositions. Next, we design a set of experiments for these propositions. Then we attain the results from evaluation objects and explain the relationships between real and expected results. In the last part, there is a discussion for this evaluation.

6.1 Propositions

As mentioned before, this research application starts with feeling terms of business goals retrieved from users. At the first stage, the application has to transfer these goal terms into proper meanings. Hence, we need to know the transition is fitness between goals and meanings. We then have the first proposition as follow:

- Proposition 1: The users would understand the connection between goals coming from them and meanings delivered by the story prototype (that is automatically provided by our mechanism to let users know the feeling of service innovation

with their context and cultural data).

For example, a hostel owner wants to make his house looks like "somewhere in paradise". Our system might transfer the meaning of "somewhere in paradise" into several meanings represented in adjectives terms, such as comfortable, quiet, or dreamy. The owner can tell differences and connection between "somewhere of paradise" and adjectives terms proposed by our system. He can give the feedback through the questionnaire in our system if he cannot find any association.

In the second step, our system will use the meanings of goal to search a proper story structure. In this part, we have to make sure that the story structure is fit to the meaning. We get the second and third propositions as follow:

● Proposition 2: Our system could find story structures and make a proper story prototype using users' input data so as for users to realize the stories are fit or not. In addition, the users can feel the concept of service innovation through the personalized story prototypes.

As a hostel owner, he may get a story structure of restaurant if the meaning of story is the same as his goal. He can project himself as a restaurant owner and think about business model from other domains. Otherwise, he can change the story structure until having a story structure in similar industry.

● Proposition 3: Users who accept the story prototype would execute what they experience when they project themselves in the story prototypes.

A hostel owner read a story prototype and has to think about the concepts of innovation from the story prototype. He will then come up with new inspiration while reading the story. Even more, he can get other thoughts by reading and comparing other story prototypes. By immersing on trying one to another story

prototype, a hostel owner would finally make his plan to build a new service.

Above section mentions the propositions, and then we give the experiment design in the next section.

6.2 Experiment Design

According to the problems we want to solve, we would like SMB users to find the similar meaning of the service image through using this information system. The users also have the expectation; so we use expectation-confirmation theory (Oliver, 1980) to measure the behavior. Expectation-confirmation theory is used to measure the relationship between expectation and satisfaction before and after shopping. We modify the model to fit our research. In Figure 6.1, we assume users have their expectation before using this image-based story prototyping system. They rebuild the story in the end of the process because it is different between expectation and result.

Figure 6.1 Expectation-Confirmation Theory for building story

There are 3 measures in this evaluation: satisfaction, perceived performance, and the match degree. Satisfaction indicates that user is satisfied with the story created by image. Perceived performance display the usability of system. Confirmation shows the fitness between the story and expectation. We divide confirmation into two dimensions: usability and match degree. Usability degree means the user thinks this story is usable as he expected. Match degree means the story is matching the meaning

as he expected.

Figure 6.2 is the flow of testing proposition. We use questionnaire to get feedback from user to test the three measures.
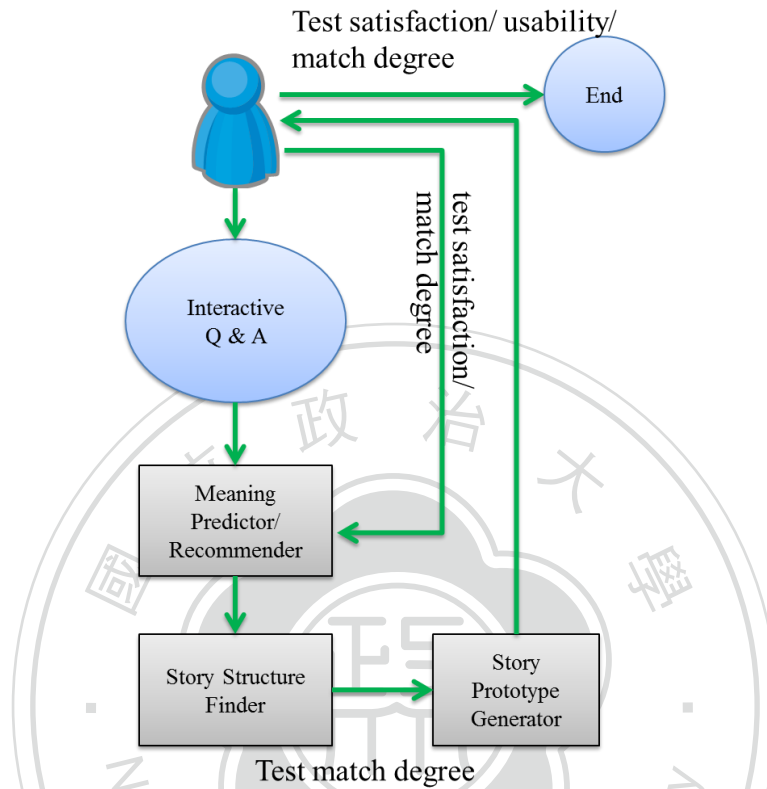
Figure 6.2 Testing Flow

With the testing flow, we have the following steps in our system:

1. Login/Register: collect the user data as materials in the proposed story prototype.

2. Input your imagery to your business: get the goal of business and resolve meanings. Then use the meanings to search for a proper story structure for the user.

3. Read the story prototype: user reads the story and thinks about the meaning of the story prototype.

4. Adjust the prototype if anything wrong: connecting propositions in previous section, when the user has any adjustment, the system would go back to step3. Otherwise, the system would go to the final step.

5. Get a prototype story for your business: end the system process.

After finishing the process, the system redirects the test users to a questionnaire page. There are five questions for the user: Questions 1, 3, 4, 5 (optional) are mapping to proposition 2. Question 2 is mapped to proposition 1. We can see the questionnaires content in figure 6.3. The following are these questions.

Question 1: Do you realize the innovation meaning of the story?

Question 2: Is any story content similar to the goal image?

Question 3: Does the story inspire you more ideas on your business?

Question 4: Are you satisfied with the first story?

Question 5: Are you satisfied with the modified story?

imageCons

系統使用調查

感謝您的耐心使用此系統，系統流程到這邊就結束了。歡迎您提供更多寶貴的意見，我們會朝大家給的建議進行修正，讓整個系統更加完善，給予您及其他使用者更好的服務體驗！

Story Prototyping 問卷

*必要

您能體會故事中想要帶給您的創新意涵嗎? *
- 絕大部分體會
- 大部分體會
- 部分體會
- 少部分體會
- 無法體會

您覺得您一開始輸入的意象感覺，和後來故事所呈現的內容是不是有相符之處? *
意象感覺:您想要您的企業所能提供的感覺
- 絕大部分相符
- 大部分相符
- 少部分相符
- 不相符
- 感覺不出來

產生的故事是否能激發更多想法，讓您能應用在自己的企業上? *
- 絕對可以
- 大部分可以
- 部分可以
- 少部分可以
- 不可以

您滿意一開始的故事內容嗎? *
- 非常滿意
- 滿意
- 沒意見
- 不滿意
- 非常不滿意

您滿意修改過的故事內容嗎?
(未修改不必答)
- 非常滿意
- 滿意
- 沒意見
- 不滿意
- 非常不滿意

請給予我們更多寶貴的意見回饋，感謝

[提交]

技術提供：Google 文件

檢舉濫用情形 - 服務條款 - 其他條款

http://localhost:59307/SPQuestions.aspx

Figure 6.3 Human testing questionnaires

6.3 Experiment Results

The previous part gives the experiment design and system steps. In this section there are two different results of evaluation objects: people on internet and SMBs from "Pillow Mountain" in I-Lan, Taiwan.

● Human test on internet

In this part, we collect data by our system through internet. The main purpose is to evaluate if the goal of business and story meanings are matched and if the

innovation concepts from the story prototype is useful. We propose three match degrees in previous section. The data of these degrees corresponds to what proposition 1 mentions. So we found 31 testers who are the business owners or have desire on building a business to use the system, and they give the feedbacks through questionnaires. These are 13 female and 18 male testers. The age range of testers is from 21 to 50, but most of them are before 30 years old.

There are 6 structures which give 24 paragraphs to the users. These testers can ask us with instant messenger if they have any question on the content or operation. With the small set of content providing, most of them were confused with the first story prototype. After the initial detailed explanation, they got to know how to realize the meaning of the story prototype. They modified the story with several rounds and then leave the system.

For proposition 1, the result of question 2 is shown as following.

Question 2: Is any story content similar as the goal image?

We use a five scale (from 1 to 5) to measure the degree. A higher number means a higher perception of story content conforming to goal image. Besides, we want to use the sample mean ($\bar{x}$) to estimate the population mean (μ). In this situation, One-Sample T test is more suitable than Z test.

H_0: $\mu <= 3$, user cannot understand the relationship between story meanings and goal image
H_1: $\mu > 3$, user can understand the relationship between story meanings and goal image
μ = population mean

Figure 6.4 proposition 1 test hypotheses

Figure 6.4 shows the hypothesis of the perception of story meaning, which is used sample mean to tests if the population mean is greater than the score 3 (the score

which we define previously) or not. On the other hand, Figure 6.5 is the integrated mathematical symbols table which is used to establish the formula later.

- N = number of sample.
- $\bar{x}$ = Sample mean.
- s = Sample standard deviation.
- μ = Population mean.
- σ = Population standard deviation.
- α = Significance level.
- df = Degree of freedom, N-1.

Figure 6.5 Mathematical symbols

We use the statistic software SPSS (Statistical Product and Service Solutions) to do the One-Sample T test with 95% confidence interval (α = 0.05). Table 6.1 and 6.2 give the statistic results.

Table 6.1 One-Sample Statistics result of Question 2

	N	Mean	Std. Deviation	Std. Error Mean
Question2	31	3.4516	.88840	.15956

Table 6.2 One-Sample Test result of Question 2

	Test Value = 3					
	t	df	Sig. (1-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Question2	2.830	30	.004	.45161	.1257	.7775

We use the critical value method to verify the t value, and its formula is in figure 6.6. We get the t=2.830 and $c_2 = T_{\alpha, n-1} = T_{0.05, 30} = 2.042$ (from table 6.3). The t is greater than c_2. This means H_0 is rejected otherwise H_1 is accepted. Most users perceive the meaning of story conforming to goal image and proposition 1 is verified as accepted.

Figure 6.6 Formula of Critical value method

Table 6.3 t-value distribution

df / α	0.05	0.02	0.01	0.005	0.002	0.001
26	2.056	2.479	2.779	3.067	3.435	3.707
27	2.052	2.473	2.771	3.057	3.421	3.69
28	2.048	2.467	2.763	3.047	3.408	3.674
29	2.045	2.462	2.756	3.038	3.396	3.659
30	2.042	2.457	2.75	3.03	3.385	3.646

There are four questions in the experiment to measure proposition 2.

Question 1: Do you realize the innovation meaning of the story?

Question 3: Does the story inspire you more ideas on your business?

Question 4: Are you satisfied with the first story?

Question 5: Are you satisfied with the modified story?

We also use a five scale (from 1 to 5) to measure the degree. A higher number means higher perception of story and service innovation. As last section, we also use One-Sample T test and use the statistic software SPSS (Statistical Product and Service Solutions) to do the One-Sample T test with 95% confidence interval ($\alpha = 0.05$). Table 6.1 and 6.2 give the statistic results.

Figure 6.7 shows the hypotheses. H_0 and H_1 justify if the user is satisfied with the story content or not, and H_2 and H_3 are about whether the user perceives service innovation or not. Each of them used sample mean to tests if the population mean is greater than the score 3 (the score which we define previously) or not. The test value of question 4 and 5 are for the hypotheses H_0 and H_1. Otherwise, the test value of

question 1 and 3 are for the hypotheses H$_2$ and H$_3$. The test results are presented in Table 6.4 and 6.5.

H$_0$: μ <= 3, user is not satisfied with the story content
H$_1$: μ > 3, user is satisfied with the story content
H$_2$: μ <= 3, user cannot get the concept of innovation
H$_3$: μ > 3, user can get the concept of innovation
μ = population mean

Figure 6.7 proposition 2 test hypotheses

Table 6.4 One-Sample Statistics result of Question 1, 3, 4, 5

	N	Mean	Std. Deviation	Std. Error Mean
Question1	31	3.6774	.79108	.14208
Question3	31	3.5161	1.02862	.18475
Question4	31	3.0645	.89202	.16021
Question5	31	3.9677	1.04830	.18828

Table 6.5 One-Sample Test result of Question 1, 3, 4, 5

	Test Value = 3					
					95% Confidence Interval of the Difference	
	t	df	Sig. (1-tailed)	Mean Difference	Lower	Upper
Question1	4.768	30	.000	.67742	.3872	.9676
Question3	2.794	30	.0045	.51613	.1388	.8934
Question4	.403	30	.345	.06452	-.2627	.3917
Question5	5.140	30	.000	.96774	.5832	1.3523

The critical value method is also used to verify the t value. We get the $t_{question4}$=0.403 and $t_{question5}$= 5.140 and $c_2 = T_{\alpha, n-1} = T_{0.05, 30}$ = 2.042 (from table 6.3). The value of $t_{question4}$ is less than c2 but $t_{question5}$ is greater than c2. In this situation, we go back to the question 4 and 5. The results represent that the user is not satisfied with the story content at beginning. However, they feel better about the story after

modifying it several times. Though the value of $t_{question4}$ is not significant, $t_{question5}$ still justifies users are satisfied with the story content eventually. We can say that the H_0 is rejected and H_1 is accepted.

For the other hypotheses, $t_{question1}$=4.768 and $t_{question3}$= 2.794. $c_2 = T_{\alpha,\ n-1} = T_{0.05,\ 30} = 2.042$ (from table 6.3). Both $t_{question1}$ and $t_{question3}$ are greater than c_2. This means H_2 is rejected otherwise H_3 is accepted. Most users can get the concept of innovation.

From the above testing, we know that most of the users are satisfied with the story content, and they can feel the concept of service innovation. We think satisfaction also means the users consider the story content is proper. We can know proposition is accepted.

- SMB Interview

The following is the interview data with the system demo. Each interviewee has his/her own different experience, and we list the codes and inferences in one table.

Table 6.6 Background of Interviewee 1

Interviewee	Company 1	**Gender**	Male
Date	2012.06.08	**Career**	orchards industry
The owner inherits the family business. Ten years ago, he decided to transform the business from planting fruits only to leisure farms. He provides other services besides selling fruits. However, he still thinks about innovation of the business because of the low profits.			

Table 6.7 Codes of Interviewee 1

Questions	Raw Data	Preliminary Codes	Final Code
How do you design the flow of DIY service?	[1]I learn it from other business. I copied the whole process and do little modification. However, the owner knew that from customer and protested that to me. So I redesign DIY content after that. [2]I went to visit other business with the same industry at other country. They provided a teaching program for us. I learn a lot from this.	Copy and enhance	[1]Learning from Examples
What do you do if some tells you that planting another fruit will make more profit for you? Why?	[3]I will consider it. That's a real problem in this industry. I gain less profit if the product is over demand in the market.	Take advices to make profits	
What do you get when you visit other business? Especially the different industry.	[4]The industry like hostel is totally different from mine. So I focus on the view shaping instead of skill. If they have a good design on their hardware, I can get some inspiration of my own. I still learn something from them.	Learning is not limited in the same industry	

You mention that you visit a lot of business. Is there anyone impacting you on doing something new?	[4]There is one business in the neighboring villages. The owner doesn't grow any fruit but he offers fruit meal by using nearby providers. He also offers tour guides, fruit picking service like me. He is good at marketing and this is the reason why his business is good.	Knowing a successful sample from the same industry	
Why don't you copy this business model that you ally your neighboring business?	[5]It is hard to imitate because of different characteristics. The owner's wife has good eloquence. She helps for tour guide service.	Limitation of resources an limited actions	[2]Practical Action
You want to learn and get experiences from these stories. Do you want to take a real action? Try it with minor cost?	[6]I read these stories and get the features, experience, and approaches from them. It comes different ideas when read the story comes from different industry. I will invest this idea if I think it works on my business.	Investing good ideas is good for the business	

As the data shown on Table 6.2 we can see Company 1 has a strong desire on learning from other business. The owner also likes to read other business stories. He expects to get more idea to strength his own business. According to proposition 3, users would execute the ideas comes from these story prototypes if they accept this story prototype. As Company 1 said, he would invest on the ideas which could enhance the business. However, the owner also implied that limited resources would change the actions. That means: when the owner is lack of resources, he would not invest on these good ideas. Even these ideas could make his business profit more than now. Maybe it is not enough to deliver the innovation concepts only. We have to put more motivation factors on these story prototypes. Is there any consideration on proposition 3? We will discuss this in next section.

Table 6.8 Background of Interviewee 2

Interviewee	Company 2	**Gender**	Male
Date	2012.06.08	**Career**	hostel industry
The owner is the first one who starts to provide renting accommodation for tourists. In these years, he improves the devices and offer more new services for customers. The owner knows that values comes from customer, so he wants customers feel like stay at home. Nowadays, he still plans to enhance his renting service to raise the whole value.			

Table 6.9 Codes of Interviewee 2

Questions	Raw Data	Preliminary Codes	Final Code
How do you maintain your competitive advantage in this competing situation?	[1]Base on my brand. The customers come here and have the feeling that they are falling into a place like countryside. They miss this feeling and always recommend us to other customers. Or they come again. I decorate this place with coffee shop, tasty meals, and beautiful garden. These things increase value of the whole service.	Decorate services with countryside feelings	[3]Goal-Imagery
Why do you open this coffee shop for the hostel service? Do you reference other business?	[2]According to new highway opening, we saw there were demands on the market. We would lose the competition if we didn't prepare well. So we decide to decorate here as a beautiful place.	Knowing the trend and change itself earlier	[2]Practical Action
	[3]We spent lots of time on building this place. I refer other business. I visited other farm and knew customer could eat and have fun here. I think it is good for consumers if they have something fun on a strange place.	A Good example gives a good lesson	[1]Learning from Examples

| **How do these ideas come up with? Is the garden designed by the owner?** | [4]We reference other same business in other places. Some are oversea; some are heard from the teacher. We got the concepts from these references. Most important of all, the owner is native. He knows how to build a good house. In unfamiliar domain, he just gives a try. | Understanding and Observing gives ideas |
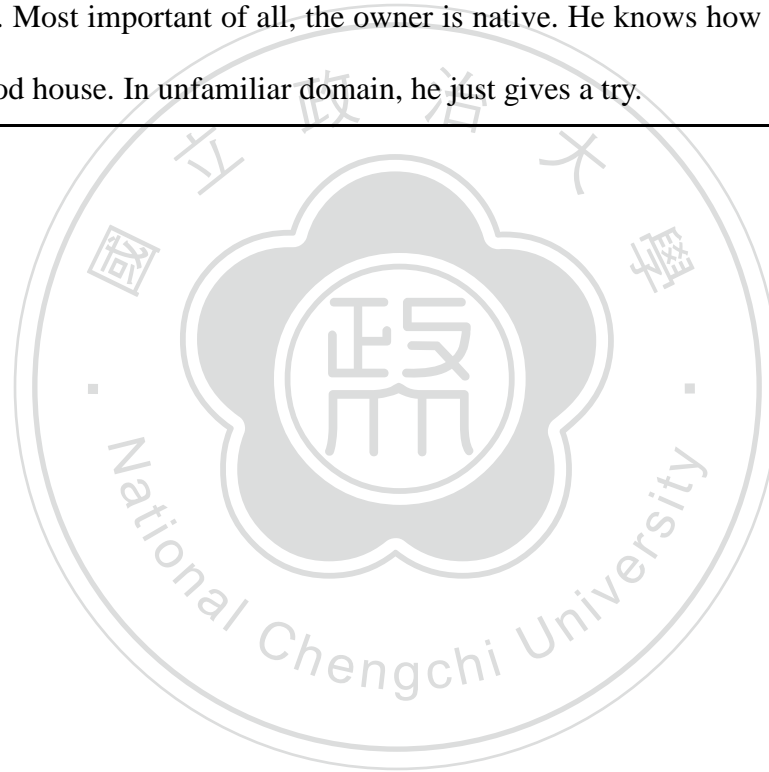
Company 2 knows that brand is its most competitive advantage. It raises its service quality by improve the devices and natural features. The owner uses the feeling "countryside" to package the whole service. He makes the improvement plan by himself without any advice from others. He gets ideas from successful cases and reforms the ideas to fit his business. He knows these successful experiences would make his business more powerful. This motivates him to do more innovations. That does correspond with our proposition 3.

Table 6.10 Background of interviewee 3

Interviewee	Company 3	**Gender**	Female
Date	2012.06.08	**Career**	hostel industry
The owner comes from an agriculture family. She provided hostel renting services for tourists at their rest time in early days. Then the owner focuses on the renting services and wants to provide a good view for customer. She knows her capacity limitation and the service only provides five rooms for renting. The owner would like to improve the service quality instead of quantity. The big problem is "*what are the solutions of improvement*?"			

Table 6.11 Codes of Interviewee 3

Questions	Raw Data	Preliminary Codes	Final Code
Do you go to visit other hostel industry?	[1]At the beginning, we went to visit others. However, our business has fixed hardware devices, and it is hard to change them. It spends a lot of money re-building the hardware, but it profit less after all.	Hardware limitation discourage the innovation	[2]Practical Action
What do you do if you have a chance to gain twice profit? Otherwise, you lose half of your investment when you failed.	[2]I don't like that. I need to survey more before taking action. That's too fast to change. I don't have outstanding ability. Steady business is good for me. And that's enough.	Changing immediately is dangerous	
Do you get any inspiration when you go to a new place?	[3]I always think about why these places are so beautiful. The nature gives these places good features. That's the limitation. Not to say I have a small land for the business.	Resource limits the growth	

What kind of service do you use on computer?	[4]I receive my email. Sometimes I browse I-Lan hostel website to view new messages for this industry. It is in a mess when I saw bulletin-board. These business owners quarrel to each other on the internet for lowering the others' evaluation.	Competitors quarrel only for one's profit	[1]Learning from examples
You have no experience on this industry at beginning. What does government do for you?	[5]I went to the class of leisure farm and got the domain knowledge. It helped me especially visiting the "Lavender Forest" at Hsinchu. For one day tour, I was impacted. I almost copied the service to my business at the moment. However, costs bring me to reality.	Examples drive motivation to innovating	
Do you go oversea for travel? How about their hostel renting system?	[6]Next time I would like to go to Europe for a trip if I have the chance. I visited German last time for ten days. All I want to do is to see what others do on this industry. They give a relaxed way to manage their business. There is only argument in this industry in Taiwan. All the service quality disappears because of competing with conflicts.	Business comes oversea gives a different way on management	

Company 3 is conservatism. Economic factors would affect the owner's decision. A better prototype motivates her to do innovation, just like what proposition 3 mentioned. Considering the limited resources makes her hesitate on executing new ideas. Company 3 gives the same implication as Company 1. That might be the improvement point of proposition 3. The discussion continues in next section.

These three companies all give the perspective "[1]Learning from examples". They know that is the fast way to strengthen the business. It is easy to copy and to apply an existing model. Company 1 tried hard to visit lots of industry and copy proper services for the business. Company 2 learned from other successful cases and built unique feelings. Company 2 also knows "[3]Goal Imagery" would provide their service a unified style. According to company 2's experience, "[3]Goal Imagery" also gives the business a greater brand. Company 3 visited other countries and places for new ideas. Learning for company 3 is important because of lack of experience. We could guess that examples for a business which wants to innovate are necessary. They can rapidly do innovation if they have a proper successful case to refer.

In "[2]Pratical Action" perspective, company 1 has the potential to invest a great idea with friends' advice. Company 1 is willing to accept the recommendations. Company 2 actions when there are good ideas. Company 3 wants a stable way to manage it business. It takes actions when ideas are feasible.

"[1]Learning from examples" and "[2]Pratical Action" could map onto proposition 3. The SMBs can learn from the story prototypes as examples. Company 1 and company 2 are highly potential to execute what they have learned from the examples. That means proposition 3 is justified for most of SMBs.

6.4 Discussion and Findings

The goal of this research is to develop a prototyping service to test the innovative service imagery. We have three propositions to verify the feasibility of the proposed mechanism. Through experiment and interview we got the support for these propositions. Followings are the results of the propositions.

- Proposition 1 is accepted: user can understand the connection between goals coming from them and meanings delivered by the story prototype.

- Proposition 2 is accepted: our system provides the proper story prototype and transmits the concepts of service innovation to users.

- Proposition 3 is accepted: users all need examples to learn, and prototype is a good tool for them. They execute the prototype or ideas come from the prototype when they have resources to allocate.

The next chapter presents research contributions, managerial implications, and future directions of this research.

CHAPTER 7 CONCLUSION

This research began with finding the problem that a business may face. Along with the proposed solution, there are several research questions which are needed to solve. The main one is to transfer innovated thoughts into a story prototype. The results were presented in Chapter 6.

This chapter gives an overall summary of this research. The first section reveals the research contributions. Next, managerial implications of the research are discussed. The limitations of research, future works, and conclusions are presented in the last part.

7.1 Research Contributions

The followings itemize the contributions of this research:

1. An effective and efficient story-based prototyping system

A story prototype with innovation concept is unusual given there isn't a similar information system in the world. Users can just rely on inputting their data and receive a story prototype immediately. Moreover, they can adjust the story prototype for a better one. Through this iterate process, they may inspire more ideas than only thinking by themselves. This prototyping system not only helps the users test their ideas, but also gives them a lot of chance to spark in their brains.

2. Applying imagery into stories with color psychology

Imagery changes in everyone's mind. It is hard to express imagery. Using color psychology may let the imagery meaning close to one's mind. The story with imagery is provided to users easily. They can realize what the imagery display in text. They can also explain their imagery to others in story-telling way. Business owners usually get new imagery for their companies. They can justify imagery with a simple story.

7.2 Managerial Implications

The aim of this research is to test SMB's imagery by story prototype. That is a better and quicker way for business to have a feedback on their new imagery. No matter the story prototype is fit to imagery or not, the experiment results shows that the SMBs still could find inspiration with the story prototype. SMBs test the inspired idea in the next service journey. This iterative process increases the innovation chance and SMBs can constantly test the stimulated ideas with lower cost. The business owners can allocate few resources on idea making and testing. They can put more energy and costs on building a real prototype or a real service. Therefore, one SMB does have imagery but does not have the confidence to achieve it. The SMB could attain some support from this research's system.

7.3 Limitation and Future works

● Limitations:

This system was actually designed to create stories with handful information of the SMBs at hand already; information is retrieved from previous parts of the ImageCons project; so this system highly requires integrating with other systems, solely using is not recommended.

To provide variable content to users, we suggest increasing the amount of structures to 40. At least 4 structure elements with 10 innovation types for each.

● Future works

With the evaluation part as provisioned, there are more effective factors for a SMB user. Future research can define more factors by exploratory study. For giving users more various story prototypes, increasing base story structures is needed. Finding an effective way to build a story structure is also a direction for future research.

7.4 Conclusion Remarks

In this paper, we address the problem of how to assist the SMBs with a useful prototyping tool for testing imagery. SMBs can easily get what they want their business become in a story-telling way. The tool not only indicates imagery works or not, but give SMB owners a seed of innovation. When this seed bud in their mind, they will make their business more profitable and competitive.

This research gives the possibility of connecting imagery with story and emotion. The proposed approach in this research is just the beginning. In the future there will be more efficient and effective methods to show the imagery with information technology tools. With the assistance of our system, SMBs can improve themselves with innovation concepts and inspiration. This is the value of this research and the system.
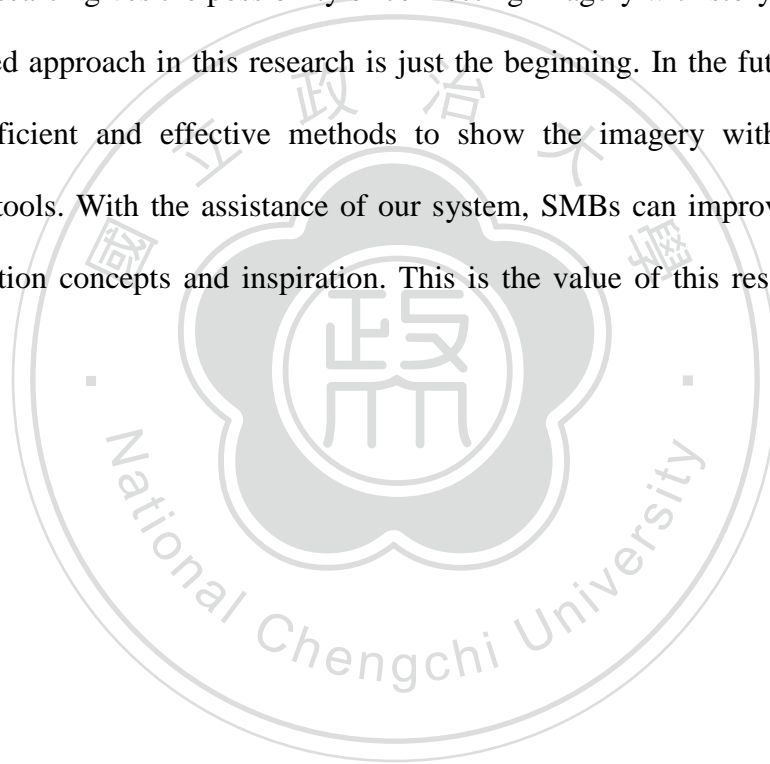
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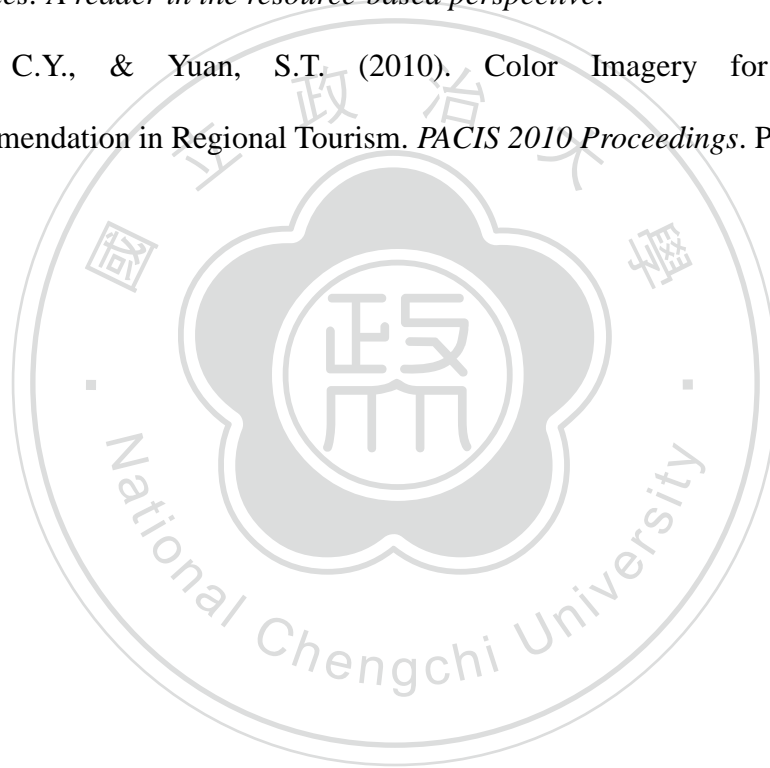
APPENDIX A. Interview data of Company 1

Part 1

訪：因為，老板之前在這邊有做一些手工 DIY 的活動，現在還有嗎?

受：有啊有啊還是有啊

訪：那那時候你是怎麼構思這個活動的流程啊?

訪：請問可以丟這嗎?(Sherry 丟垃圾)

受：可以

訪：產品是你小時候看到這些，你想去做一些小東西嘛

受：我去跟人家看，他做不一樣，自己就稍為改良一下，以前我去看他是做那個
什麼...天牛，他做的很粗糙，不太像，我就自己就去把這些像蚱蜢、螳螂、
蟋蟀啦...很多種

訪：都有去學...?算同業嗎? 還是朋友?

受：那一家是做...民宿啦，民宿

訪：所以算是也是...?

受：剛開始我是把它模仿過來，結果他知道，被他打電話過來抗議，結果就...他
那就全部都不要用了，自己開發

訪：所以老板你有時候自己在想一些果園新的想法，或是想要多加一點新的東西
的時候，是會從別人那裡得來靈感對不對?

受：對

訪：那會跟人家討論嗎? 比如說平常可能其他人在聊天的時候聊到，覺得「ㄟ這
個還不錯，可以做做看這樣」

受：也是會有，和一些同業齁，出去觀摩都會看，人家...跟我們...適合我們這邊
的，我們就把它學過來

訪：了解

受：也會去學習嗎? 就是學看看別人怎麼做

受：觀摩啦

訪：所以這些活動都是…從農會那邊得到訊息嗎？還是會自己…？

受：農會會辦那個…觀摩，每年都會辦，大概三天兩夜

訪：所以是去…外縣市？

受：到外縣市去看

訪：老板有想過自己出去其他地方看說這些產業是怎麼運作的嗎？

受：自己去看的話，人家都會留一手，啊你農會帶的話，他變成就是會互相觀摩，
比較願意講，有特色他不好意思藏私，當然都會講出來，啊你自己一個人去
看，人家不理你

訪：那這邊會有其他同業會來參觀嗎？就是錦普

受：會啊會

訪：還是有，老板也是介紹一下我這邊是怎麼用的，有一些訣竅這樣

受：我們這邊有辦那個，我們這邊有 13 個休閒農業區，像那個，每個月都會輪
流，這個月到哪一家，哪個休閒農業區都會輪流，13 個都會輪到，這個很好，
我們家的名氣會到

訪：對，本來就是要多交流才會有成長

Part 2

訪：那假設就是，我是說假設，比方說是紅心芭樂可能現在假設產季，就是已經
過產了，那如果有人來跟你說，我覺得你這塊地種蘋果不錯，那你會考慮…
被他的話說服嗎？

受：要看那個…紅心芭樂的量啊，像現在已經又過量了，大概連續好了大概五六
年，那現在目前紅心芭樂喔量也是夠了，量也夠

訪：所以要是有人跟你說，有個替代的水果…就是市場上缺…

受：會考慮

訪：就會考慮

受：現實的問題，你種出來的水果不好賣，價格又不好，一定要轉其他的水果，不得不轉

訪：老板你怎麼會知道過量？農會會給你資訊嗎？

受：一般這個不會知道

訪：那你怎麼知道是過量的？

訪：價格？

受：這個很敏感，種出來好不好賣馬上就知道了...對，這個很現實

Part 3

受：你們出去都一般看轉型成休閒農業，但一般都是看民宿比較多，觀光果園很少，觀光在看的很少，都看民宿

訪：所以你們出去不是只是看觀光果園，還會看民宿這樣？

受：大部分都看民宿

訪：果園就...交流技術這樣子？

受：比較少

訪：老板那看民宿你會得到怎樣的啟發？

受：民宿的話，因為跟我們的差異性太大了，不，完全不一樣，看民宿一般就看他們，景觀怎麼...看都是看景觀，周邊的景觀怎樣，有沒有什麼值得學習地方

訪：所以也會從就是...佈置？就是比方說看到他景觀很好，也會想要學習過來？找到可以學的地方

受：對

訪：所以看不同的產業也沒有關係？

受：對

訪：也願意去看這樣的觀摩

Part 4

訪：老板那你看了這麼多的產業，那你有沒有說看了什麼，影響你做了什麼？

受：目前喔，像冬山那邊...

訪：從以前開始，從最早開始接觸這一行

受：冬山那邊有一家我是很想去，但我跟那個老板是有點認識這樣，沒有說很熟，那個就是什麼「幸福二十號」有沒有聽過？他沒有種水果，他只有做一些餐，他就利用週邊有種水果，然後做一做，給過來就是有導覽解說，有一些水果餐，然後去採果。跟我這個有點類似

訪：所以他有把他的水果做成餐點，拼盤什麼的？

受：他本身以前是在他那個他太太那邊有經營休閒農產，他有在那邊住過好像很多年，大概有七八年，他怎麼經營管理那個要領都知道，然後回來，自己出去做，他很屬害，一炮而紅，他到外面做之後，他很會做行銷，那生意超好的，

訪：所以他原料的來源是附近的果園，不是他本身的？

受：對，他利用他附近的(資源)

訪：老板你說哪一家

受：幸福二十號

訪：所以你看到那樣，你會跟他學習，他有實際執行的嗎？

受：他那個因為他經驗很豐富，他本身以前在上班，就做很多那個，那是他岳父開的，就是他老婆那邊，他在那邊經營的要領都知道了，然後再自己出來做

訪：那你有想過要模仿這個嗎？比方說聯合附近的...

受：那個很難模仿，每個人的特質不一樣，他太太口才超好，很會講話，很會說話帶團啊...老板是比較不會...

訪：有一個太太可以幫忙

受：對對對

Part 5

訪：所以上次記得說要看自己的故事還是看別人的故事，上次我們在使用系統的時候，不是有兩邊，我們請那個 Company 3 的老板做選擇，當時他是不想要看…不喜歡看自己的，想要看別人的故事，老板你是願意看自己的?

受：但是我是，我會先看別人的，再看有沒有優點學起來，再選自己，最主要還是選自己的

訪：選自己

受：你看別人的，欣賞而已

訪：所以就算是很跳 tone，比如說，可能你本來種水梨，後來跑去養雞，你也會願意看這樣的故事?

受：對

訪：願意

訪：所以老板看這個故事是想說，要從中學到一些經驗嘛

受：對

訪：看到一些方法

受：學到一些特色、經驗、方法，對啊，看別的有時候會給你比較…idea 比較不一樣，你一樣看同業…

訪：都一樣

受：看久了沒什麼刺激感，比較沒有…對你的創意比較沒有什麼…

訪：所以看這些故事，老板有想到什麼點子去實行它嗎? 試試看，說可能說投入個一些成本然後試試看

受：會

訪：像是如果說你看到一個人在幫他的水果有做那種雕花，你想說這個好像可以做，就試試看?

受：會啊

訪：會比較想投資？

受：會會

APPENDIX B. Interview data of Company 2

Part 1

訪：那老闆這樣在那麼競爭的情況下要怎麼維持自己的競爭力

受：就靠我的口碑、靠我的客人、靠我的第一家阿。我的口碑很早期就出來，大家都知道。啊我之前來的客人，他們來的時候，就真的有感覺到鄉下農家的感覺，就會真的覺得懷念，阿就會對我這地方推薦新的客人來。或是有些客人會在之後再來。還有我就是用其他的東西做包裝，向我這邊的鄧伯咖啡、簡餐、漂亮的庭院，我用這些東西和我的民宿相輔相成這樣。阿客人來了之後就可以來這邊發呆、泡茶聊天、看我養的小雞小鴨這樣，感覺就很鄉村，就以後還會再來 (鄉村的意象)。

Part 2

訪：那是為什麼決定要做這個咖啡店？

受：就看你個人的手法，想說雪隧已經開通了，就要能夠預見這些需求，然後就開始準備，如果沒有這樣的能力的話齁，就很容易打不贏人家。所以就想說我就先把這裡做得美美的。

受： 我這邊很多雕塑就是花了很多時間慢慢雕刻的，然後這也是慢慢不斷進步的蓋出來。就花了很多時間在打造這個環境，不然這個地方又沒有什麼景點什麼的，誰要來看阿？

訪：那老闆你想要做這個咖啡的想法有參考誰的八？

受：阿就有時候會去看看其他人怎麼做的

訪：所以是有參考別人的作法

受：像農場就是參觀一下發現別人有吃有主有玩，就覺得很好啊，所以就後來申請個小農業證照，要給客人一點事情玩，不然他會很無聊

Part 3

訪：所以吳爸這些 idea 是怎麼來的?

受：你這問題就問得很好，有時候員工請我幫忙檢修一些東西，然後就會較不開心，因為覺得自己是老闆怎麼員工這，自己需要多一點時間想說要做些什麼。然後齁，有些東西你擋了他一時，過兩三年後，他就又出現這樣的需求了，他就是有不放棄的心態(特質)。他就是個比較不會放棄的人。

訪：那請問那花園都是吳爸自己設計的嗎?

受：會參考同業，就有時候出國玩看到、或是聽老師講，就會有些概念。但最重要的是吳爸是本地人，知道房子怎麼蓋可以讓風吹進來、怎麼樣把太陽光擋住，這個他懂。

其他的東西歐，他就自己慢慢弄。

APPENDIX C. Interview data of Company 3

Part 1

訪：老闆會去看其他家的?

受：也是會去看，一開始在做的時候也是有去看其他家，但是我們硬體設施就是現在這樣了，沒辦法改，不像其他人說隨興改，說真的啦，你花很多錢再去改這些其實划不來，我之前有想過說小孩子想做那我們就搬下去住，我們那裏有房子，我相信我們的這個 view 很不錯，比較高檔的有啦!但是像比較平價的就我們!但是說正經的啦!以我自己的年紀還有我的能力，在花那些錢，為了這樣我壓力很大，因為花了那些錢，你就會想要回收嘛!除非小孩子有興趣啦~ 再去說這些

Part 2

訪：那老闆娘，那上次有給你看故事，你有提到說因為你比較保守，所以比較不願意去看到自己，可能未來性很不知道的狀況嗎?就是很不明確的狀況?

受：你是說我比較保守喔?

訪：老闆娘是這樣嗎?

受：阿你說我比較保守....ㄟ...我這個人是比較喜歡去觀望啦!我不想要一下子這樣...

訪：不願馬上有很大幅的變動?

受：嘿嘿嘿! 對對對!

訪：那如果有大幅變動，最後給你的回報是很好的，有可能回報很好，也有可能不太好，那你不會想要去......？

受：我不太喜歡這樣

訪：他想問的是，假如你現在投入一塊錢的成本，投了可能得到一塊，也有可能賠 0.5 塊，那你會想要去做做看嗎?

受：我也會去算我自己的成本，一塊就對了?

訪：對對對，就想要去看說你的想法是不是這樣子的?

受：恩……我能力……目前是比較希望平穩啦

訪：平穩嗎?

受：目前是比較希望平穩，不想要弄這些

Part 3

訪：所以老闆娘平常除了照顧家裡以外就是管民宿嘛！那有沒有什麼其他的休閒娛樂在這邊，比方說: 爬山?! 在這裡附近還是特定跑到外面

受：我會亂跑

訪：所以不一定限制在什麼地方?

受：大部分在附近比較多，有時候會跑到比較遠，想換個地方換個新境

訪：那到新的地方會不會想到說新的靈感? 有沒有這樣的想法?

受：其實都馬會，你去到哪裡會想說；人家這裡怎麼這麼好，其實大自然的部分你就無法去改變，那硬體的話就限制在這裡，又不是說，我真的一塊地很大，.有空間，我就去給他改!阿現在就這樣，土地有限啦!

訪：所以就限制在這邊?

受：恩對啦

Part 4

訪：那你平常會用電腦做什麼事情? 還是給家人用?

受：都是小孩子在用啦! 平常會收個信箱

訪：所以是看信箱還有看有沒有意見回一下這樣?

受：信箱我會看啦! 還有留言啦! 我是沒有那些…

訪：留言板?

受：沒有留言板，不過我那天上去看，我覺得我們現在很糟糕!(這裡要提到宜蘭民宿網)，你有空可以上去宜蘭民宿網看一下，整個留言版，雜七雜八的一堆訊息，一堆人在吵，吵來吵去，我看得很累，有日租的、民宿的、沒有合法民宿的，阿吐來吐去，客人看到也會想說怎麼這樣，就是交流園地啦!

訪：所以是客人店家都在那裏

受：對！大家都看的到!我是覺得就像自己家在內閣啦!這種感覺 哈哈

你上去看，以前客人還會留言說他需要房間，你還可以去跟他回復！現在上去就

變成這樣，看起來很恐怖

Part 5

訪：哦，那像這樣，就是一開始投入民宿業，不是對民宿業比較不了解，那政府

有輔導你們嗎?

受：我最早的時候，有去鄉村就是負責休閒農業的那裏上課，聽老師上課，大概

有一些概念，就是邊弄民宿得時候邊上課邊聽

訪：那妳覺得那個課程有幫助到妳嗎?

受：ㄟ~多少多少多少，多少有一些認識這樣，然後有帶我們去新竹那個什麼?!

綠…

訪：薰衣草?

受：嘿嘿嘿嘿嘿!

訪：有去參觀唷!?

受：嘿嘿嘿嘿!就帶我們去那邊，一日遊!看一下他們的產業

訪：那妳覺得它們那邊那樣怎麼樣?

受：你說薰衣草?

訪：對對對

受：那邊真的不錯，但是餐點就……不能吃，就是感覺啦

訪：那有給你什麼樣的衝擊嗎?

受：你要說沒有衝擊那是不可能的，就給妳當下就是如果我們也有塊地，我們也

來做，有沒有辦法像他們(薰衣草森林)那樣，想法一定有!但是你回歸基本面，現

實面，錢阿

訪：要投資很多下去!

受：對啊!那你會想說,唉唷! 不用啦!我這個沒企圖心的人……真的啦!也是因為年紀大了! 如果你再給我年輕一點,再年輕一點,唉,有伴幫我,真的! 都我一個人,太累了! 我的小孩也不幫我顧阿! 這樣真的很累! 還有另一個五十歲嗎? 沒有啦! 把身體顧好,可以到國外走走

訪：所以有出國去嗎?

受：有,有到德國,我覺得德國真的很漂亮!他們的民宿齁,真的就是叫民宿!真的才叫民宿!像我們台灣齁……

訪：那你會想把這些經驗分享給別人,像是朋友嗎?

訪：比方說照片啊!

受：我是覺得這種東西是要親身經歷啦!百聞不如一見

訪：像是跟同業討論的時候,可以跟她們分享……

受：其實說真的,如果有機會的話,我還很想去歐洲,上次只有去德國,深度之旅,十天而已,其實我是想要去看一下,看人家怎樣做,用最輕鬆的方式去做,心情 OK 的方式,你看我們台灣做生意,很差勁,也不是說差勁,就是一直爭,一直爭到品質都不見了!我是覺得要品質好,不只品質好,你會做到和客人互動,自己的心境,你看我們在做的人,要是心境好,傳出去的訊息和感覺就會不一樣。你看現在商業化,每天都做到這樣,我是覺得乾脆收一收,乾脆搬回來住。所以年紀到做民宿,我是覺得說,就是一間或是兩間(房間),最多三間,夫妻兩人一起做,也可以做得很開心啊! 對不對!?

APPENDIX D. Human Test Data

Age	Gender	Question1	Question2	Question3	Question4	Question5
27	男	4	2	2	2	3
28	男	2	3	2	2	3
24	男	4	4	4	5	5
25	女	4	4	5	3	4
33	男	3	4	4	3	4
25	女	3	3	2	2	4
24	男	4	4	4	3	4
24	男	5	4	5	3	5
25	男	3	4	2	2	4
25	女	3	4	4	3	4
27	男	5	4	4	4	4
35	女	3	4	4	3	4
23	男	3	2	2	2	3
24	女	4	2	4	4	0
27	女	4	4	2	3	4
26	男	3	3	2	2	4
21	女	4	4	4	4	5
22	女	3	4	4	3	3
28	女	4	2	5	2	4
25	男	3	3	4	2	4
25	男	4	2	4	3	4
25	男	4	5	4	4	5
25	男	4	3	4	3	4
29	男	4	3	4	4	4
23	女	3	3	2	4	4
23	女	5	4	4	4	5
50	男	4	5	4	4	5
50	女	5	4	4	4	5
23	女	2	2	2	2	2
24	男	4	4	4	4	5
24	男	4	4	4	2	5

APPENDIX E. Sample of Prototype Structure

Innovation Types	Structure	Template
Delivery-Channel	Purpose-Desire	雖然四年前產業龍頭購併@company@，卻讓創辦人@name@留任@company@董事長，從老闆變成員工，繼續帶領@company@。@name@是個感性的人，領導全憑個人風格，既不看數字，也不談營運目標，只對員工說：「內在可以創造外在，你給出什麼，就會回來什麼。」
Delivery-Channel	Motivation-Feeling	{不看數字，聚焦服務}{改由後台監控經營績效}在@company@工作超過十八年的營運部協理指出，@name@過去對分店的管理全憑信任，店裡從來沒有盤點，也沒有銷售報表，更從未對店長訂定業績目標。　產業龍頭入主後，企圖為@company@引進一套講求數字和績效的管理模式，一度引發內部文化衝突，產業龍頭進駐的財務部人員和@company@店員為了盤點存貨、核對數字，經常熬夜工作到隔天凌晨一點；由於員工還未適應新的電腦化結帳系統，也曾短暫造成來客數下降。營運部協理說，雖然員工們花了不少時間去適應，但當時離職率卻是零。　逐漸，@company@建立了一套特殊的後台資訊系統，用來監督經營績效，即前台的銷售端仍維持原來的服務特色，店長看不到每天的銷售數字，也無須忙著追趕業績目標，只須專注於服務。　至於監督經營績效的事，就交由後台

		的總公司來負責，包括採購、稽核、促銷成效等數字化管理。對於營收不佳的店，總公司則會派專案小組到門市進行輔導，協助改善店面擺設、加強課程及活動內容，或員工特訓等。
Delivery-Channel	Methodology-Possibility	{不拚促銷，控制存貨}{年增二十二家店都賺錢}@company@不為店長訂業績，但每間店照樣賺錢，看似很玄，@industry@專家解釋，@industry@是一種透過服務和分享慢慢培養出來的生活態度，如果店長太重視業績，就會想盡辦法促銷，造成服務品質下降，結果容易適得其反。雖然店長和員工看不到業績數字，卻能利用系統紀錄的會員資料掌握消費習慣和趨勢，協助客人購物，從而提升服務品質。 有了這套後台資訊系統，@company@在過去一年快速展店，從原本經營十多年只開二十家店，一年間就擴充了一倍，而且全部賺錢，來客數也在一年內成長一倍，並且成功把存貨盤虧降為零。
Delivery-Channel	Evaluation-Hunch	目前@company@的據點不多，主要集中在大台北地區和桃園，遠遠落後兩大@industry@競爭對手，原因是過去@company@專注於直營，以小規模經營來維持服務品質，未開放加盟，在產業龍頭購併前，僅七家店的規模。 不過，隨著@company@增資、展店，挑戰龍頭的目標不言而喻。下一步，它打算走出大台北，往中南部拓展，今年上半年預計展店至六十間，之後將開放獨立經營的生機小店

		加盟，目標是年底達到一百家，並計畫進軍大陸。@company@計畫今年內申請登錄興櫃，明年上市掛牌。目前@company@年營業額約六億元，在完成百店擴點後，業界估算今年營業額將倍增，挑戰十二億元，直逼前兩大。可以預見，在第三大急起直追下，@industry@戰火將越燒越旺。
Offering-Service	Purpose-Order	二月十七日，卸下全球最大@industry@台灣總經理、營運長光環，@name@的選擇明確是後者。@name@將募兩千萬元組創業團隊、規畫兩年推出五個全新網站。 @name@創辦的「@company@」，在二○一○年底被競爭對手購併。對照這間五年前@name@拿出五十萬元資本額的新創公司，以外傳近億元「聘金」嫁給美國大型網路公司，回收上看兩百倍。 @name@強調，接受競爭對手購併，「事後回想還是很棒的決定。」五年來，從帶領兩人公司到超過兩百人，從年營收四萬元的事業到月營收破億元，他們為何捨棄跨國公司大舞台？ 「離開自己創立的公司，是這輩子最難的決定之一，」@name@說。「如果我們沒有主動發動，應該也沒人會叫我們走。」@name@想再創業，除了因為對創業仍有熱情外，他也面臨到，多數創業者轉為專業經理人，所遭遇的三個難關。
Offering-Service	Motivation-Faith	{該重視數字或理念？}{不願為高績效而失去創意} 被購併前，@company@轉進@industry@才三

		個月，因亟需大量資金，與競爭對手合作，「當初很快速從零變很大，帶著一種打仗感覺，」@name@解釋。　但當規模做大，「它開始追求怎麼 cost down（降低成本）、更有效率，」@name@說。總公司便會比較各國市場，訂出本月五％、下月成長一○％等營收目標，「每個月的業績就像期中考。……某些時候，我們像『明日之星』，其他時候我們像『扶不起來的阿斗』。」@name@說。　他認為，過去，@company@創業成功，除了營收，更在意使用者未來潛力；專業經理人成功邏輯卻是精算關鍵績效，可能因此失去創意空間，和創業者的隨興因子互相牴觸。
Offering-Service	Methodology-Deduction	{該放手或待在原位？}{不當經理人選擇二次創業}　這是許多創業者最難克服的工作——放手。因為，當初他能創業成功，就是自己從無?鵶陸鷁璆 X 來的。　「任何方向和感覺，都是在 hands-on（親力親為）的苦工中領悟和進步的，」@name@說。@name@也自問：「如果在競爭對手待三年、五年之後出來，是不是還能扮演創業家這個角色？」他發現，當組織規範越完善，多數情況不用親自出面就能解決事情，舒適越久，創業能力越容易折損。　這些難關，讓@name@選擇走回自己專長的創業之路。　每次他的人生要轉彎，他總翻開《誰搬走了我的乳酪？》這本床頭書，花一、二十分鐘大聲念完整本故事，以故事中的老鼠改變心態

		的勇氣，鼓舞自己。
Offering-Service	Evaluation-Accurate	「創業最壞可能就是把錢賠光，把時間浪費掉，其實也沒有太糟。」@name@說。網路趨勢專案觀察，@name@正是典型創業家：「不管別人怎麼想，對懷抱大格局的他們，都是小意思，」這類人一旦決定創業，便像賭徒般不輕易動搖。　站在台北南港軟體園區 E 棟，這間二十五坪、空無一物的新辦公室時，@name@訴說未來計畫：他們打算把歐美有潛力的網路服務「中文化」，並試圖整合線上與線下服務，今年內將推出@service1@和@service2@等網站。在此同時,他們的老東家競爭對手這間「史上成長最快公司」正因瘋狂擴張爆發危機。　大起大落的網路產業特質，確實讓@name@的未來難以預料。但就因為如此，各種可能，仍等在他們眼前。
Offering-Product System	Purpose-Knowledge	一個來自全公司不到三十人，幾乎零廣告預算的@industry@品牌，如何在網友們的心中，勝過其他競爭廠商，擁有雄厚研發與行銷預算的國際大廠？去年起，營收規模破兩億的@company@，甚至正式進軍香港,全港有超過三百間門市的通路都能買到他們的商品。　這一切，都是二十七年前，兩個附在嫁妝中的@product1@，所開始的故事。
Offering-Product System	Motivation-Consider	{從原料產量中搶優勢}　一般消費者與網友，對@company@的認知就是品質好、「CP 值」高。但，成分如此簡單的產品，@company@是如何建立起競爭門檻，讓其他人難以模仿跟進？　當其他業者

		的專長是加工與行銷包裝時，@company@卻是從農業起家。　早從二十多年前，@name@便開始與農友契作，目前有超過一百公頃的原料產地，可見其量之大。　但更難的是，如何掌握好的原料。且要找到優質供應商，就像大海撈針，於是@company@從各蔬果產銷班下手，請產銷班推薦農友，確保品質。
Offering-Product System	Methodology-Certainty	{從草根形象中得商機} 有意思的是，產品對了，@name@包裝看來有點俗的台灣「本土味」，也讓它脫穎而出。這並非無心插柳，而是@name@的堅持。他戲稱自己有「創業三寶」：@strProduct1@、@strProduct2@、@strProduct3@，這些都是@company@長銷二十年，未曾改過包裝的經典商品，占全公司八成營收。　「我一定堅持這樣子(台灣味)，你如果沒有特色，朝著他們（指國際大品牌）的腳步走，人家就沒辦法看到差異。」九〇年代，台灣許多本土@industry@，紛紛走西式包裝、砸大錢做廣告行銷，但@name@深知，自己的品牌優勢，就是台灣味；因此，即便在草創時期，曾因本土味而被大型通路拒絕合作，連面談都不肯，但@company@仍堅持草根形象。
Offering-Product System	Evaluation-Proven	{包裝本土味，反而顯特色} 二十七年下來，亮眼的成績，證明@name@的堅持是對的，反觀當初同期競爭的本土品牌，很多已式微或倒閉，加上近年興起的本土意識風潮，讓@company@的營運更上

		層樓。　今年，@company@不僅要拓展網路市場，更要跟隨在台灣的通路夥伴去中國打天下，被問到屆時需求大增，該如何供貨？@name@回答，將會在中國取得原料，但送回台灣加工製作，因為正港的台灣「土味」就是他最好的招牌。
Offering-Product Performance	Purpose-Inequity	打造@company@，改變大家對@industry@想像的是才三十六歲的@name@。但是@name@沒有強大集團做後盾，靠著網路低開店成本，創業至今全都是自有資金。@name@沒有@industry@背景，卻對品質異常嚴格。「多少會有少數的不良品，美國品牌有寬容的空間，@company@說一就是一」@name@說。@name@能有今日的成績，新科技給了他機會，也讓他在挫折中鍛鍊快速學習能力。
Offering-Product Performance	Motivation-Temptation	{從大廣告公司手中搶下客戶} 但@name@家人卻不支持。@name@創業前兩年都沒領薪水，接案收入全投在公司，兩年後才領了第一份薪水一萬元。@name@父親是工廠警衛，母親是家管，看到兒子有一餐沒一餐度日，追求穩定的兩老，一直催促@name@去當公務員。@name@不改創業決心。當時，@name@常常觀察國外網站設計，回過頭來服務台灣企業。最讓@name@感到驕傲的是，他十個人的小公司，從某競爭對手手中搶下知名大廠的案子。「後來我就習慣，要做就要拿第一名，」@name@說，「我創業過程很多都是靠學習、模仿來的，但我都會拿第一名來比，然後問我自己要怎麼做到跟

		它一樣。」@name@常把黎智英經營事業的原則掛在嘴邊：做生意要簡單。專注在一個最大的市場內，然後做到最好。要思考哪些事情是可以不要做的。
Offering-Product Performance	Methodology-Production	二〇〇七年，@name@創辦@company@，效法競爭對手從@industry@上游一條鞭管理。對這位@industry@門外漢來說，困難重重。一開始，@company@規模小，國際代工大廠沒人理@name@，他只好找沒有外移的小廠。強調高品質的@name@常常聽到代工廠說，「要求太高，不可能做到」。@name@很氣，告訴自己，「如果贏，就是要做出跟競爭對手一樣的東西，然後價錢只有一半。」將近一年的時間，@name@自己買原料再發包給工廠製作，學會成本分析，到後來，工廠還沒報價，@name@腦袋已經算好價錢，「代工廠再跟我說想賺多少。」
Offering-Product Performance	Evaluation-Determination	{大手筆投資，是要建立競爭門檻} @company@成功後，市場出現許多模仿品。@name@從自建物流中心、降低物流成本著手，同時還積極尋找海外大型代工廠，築起另一道門檻。將來，@company@會到海外發展嗎？「不會，」務實的@name@說，「台灣@industry@市場兩百億，我們目標能吃下市場的三成。我先把眼前的事情做好比較重要。」
Delivery-Brand	Purpose-Change	五月下旬，@company@總裁@name@，在台灣跑了幾個地方，從宜蘭、東北角到苗栗。「這次談合

		作比較具體了，幾個業主，都對環保和民生有意識，不是只想賺錢，而是想做出『作品』，與我們契合，」@name@笑著說。@name@夫婦倆跨入@industry@的經營，其實是個偶然。一九七八年，二十六歲的@name@在香港工作，擔任記者；@name@的另一半則一邊念碩士，一邊教書。兩人薪水都不高，因此住在必須坐船一小時，才能到香港中環的南亞島。兩人住的小漁村叫「@company@」，三年的時光，純樸而浪漫。因此後來，就以此為品牌名稱。
Delivery-Brand	Motivation-Oppose	@name@三十歲時，因父親中風，回國接掌家族事業，經營範疇，橫跨貿易、建築、食品、原物料等製造業。「其實，我們兩個都不太喜歡製造業。當年談戀愛時，愛周遊列國，發覺旅遊其實可以是一種將經濟、社會、民生結合的舞台，可以有更深層的商業模式，」@name@解釋當初創@company@時的初衷。一九八五年，@name@夫婦在普吉島買下一塊地，「當初，純粹是因為喜歡那裡的夕陽，想買來蓋飯店、找人管理，」沒想到買了以後，才發現土地污染嚴重。因此，展開一連串的淨土、淨水、種樹、種草，也種下了@company@重視環保的經營原則。「我去談生意，人家說@company@的CSR（企業社會責任）做得很好，但其實 CSR 只是 CR（企業責任）的一環而已。CSR 不是在做慈善、也不是在捐錢、更不是企業有了盈利，才掏錢

Delivery-Brand	Methodology-Non-acceptance	給別人，」@name@說。她和@name@一向認為，商業的本質，其實應以民生為重，不論賺不賺錢，都需堅持兩人創業的「為什麼」。
Delivery-Brand	Methodology-Non-acceptance	早期，@name@負責@company@的商品開發，將各地方的手工藝，轉變成現代服裝、家具、精油與工藝品。他習慣在村落裡，與村長、婦女們坐下來長談，討論樣品如何改進、造型可以如何調整、顏色要摻紅還是摻藍。「我們總是花更長的時間，找當地的工人做酒店建築造型；找當地的婦女做手工藝品，我們就是想把當地民俗藝術，融入我們的作品，」@name@說，這樣的做法雖然較費時、風險也較高、更不知道客人喜不喜歡，「但既然想分享對各地文化的喜愛，就要認這個風險、這個命。」
Delivery-Brand	Evaluation-Process	@industry@，對@name@而言，是既休閒養心、又能加強文化生態意識的娛樂經濟。「我到馬爾地夫，不會講當地的語言，也不太會游泳，但我們和當地人，可以一起保護珊瑚。」旅遊世界各地，@name@體認，人對真善美的追求，是共通的語言。在@industry@成長的年代，@name@形容自己是個獵人，在全球各地選址獵地，未來十年，@company@將重點放在中國，至少會再開發二十個新據點。
Offering-Product System	Purpose-Aware	「為什麼市場上的選擇這麼少？」多年前，當@name@為年幼的女兒置裝時，生性愛打扮的她，在台灣市場上遍尋不著心目中的完美款式。且進口

		名牌@strProduct1@在打折後，往往還是要七、八千元。「找不到，那還不如我自己做，」@name@說。二〇〇九年，@name@創立@company@，從一間府城小店到現在，已拓展至全省百貨公司。通路包含兩間門市、八個櫃點，年營收超過兩千萬，更幾乎在每間百貨公司，都達到@strProduct1@銷售第一的佳績。
Offering-Product System	Motivation-Control	早在二〇〇四年第一個女兒出生後，因為不滿意市面上的@strProduct1@，@name@就有創業的念頭，「那時候，我真的『很瘋狂』去注意這塊。」每天蒐集資料、研究國內外產品超過六個小時，每一個半月就出國一趟，觀察國外市場，@name@早已蓄積能量。但她想創業的這個念頭，直到二〇〇九年才實現。
Offering-Product System	Methodology-Inaction	{賣市場要的 自然有需求} 當時因工作時間不穩定，另一半選擇離開工作十年的崗位，沉澱了半年後，兩人決定創業。對兩人而言，@industry@是一個全新的領域。六坪的店面，第一個月營收就達四十幾萬，印證@name@的想法，「這麼多人給我負面的聲音，可是如果做的，是市場上要的東西，就沒有想像中的困難。」
Offering-Product System	Evaluation-Trust	{堅持自己掌握通路} 但@name@開始放慢腳步，父母經營成衣代工廠的經驗，讓她看到成衣產業外移的趨勢，就深知通路必須掌握在自己手上，才不會破壞價格。所以她婉拒所有邀請，只按著自己的

		腳步，一個一個櫃位在南部拓點，再逐步北上。當初幫助@name@進軍遠東百貨，金鷹百貨南亞店副總提到，以台灣來說，這種高流行性的產品銷售，集中在百貨公司。@company@選擇了對的方式拓展知名度,「商品有獨特性,百貨會自己來找她們,」他說。目前@company@配合的四間工廠，都在中國大陸，但從@strProduct1@的設計、生產流程、進櫃到行銷等等，幾乎都由@name@一手包辦。曾被消費者質疑、被百貨公司刁難，@name@從愛女之心起步，用@strProduct1@，走出台灣自有品牌的一條路。