Business Model Analysis of a Case Company in Knowledge Intensive Business Sector   Case: Oy Integro Finland Ab

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Abstract

This study initiated with the need of analyzing the case company's business model, and evaluate its suitability to the new market territory of the case company. The objectives of this study include understanding of business model concept and its importance, learning to apply the business model framework to the case company, finally testing and modifying the business model framework of Rajala et.al in a general level of application.

The study begins with concept introduction and discussion, include definition of business model, importance of business model, definition of business strategy, introduction of Knowledge-intensive business services, and concept of behavioural analysis/profile etc. Not only include the concepts mentioned before, this study also introduces the development trend of these concept and their relevance to the case company's situation. The business model framework used in this study was developed by Rajala et al. for software business companies, which share quite much similarities with KIBS companies.

After literature review, there is the empirical study of this thesis, which is mainly based on the case company. The empirical study is made based on questionnaires and interviews. The result is analyzed based on Rajala et al.' business model framework (2001). Conclusion has been drawn after the analysis, and suggestions have been made to the case company.

After the case company analysis, the study has been developed to a general level – for all KIBS companies. And the business model framework used in this study has been slightly modified to suit better for the KIBS companies' situation.

Besides the analysis of the case company, and the recommendation has been made to the case company, there is another result, which is more on a general level, that the Rajala et al.'s business model framework (2001) has been modified as follow: firstly, the customer has been moved to the center of the framework, in order to bring people's attention to the significance of customer; secondly, business partner has been added into the framework, in order to emphasize the importance of business partner to a company's success.

Key words: business model, business strategy, KIBS, behavioural profile

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1.   Introduction

When the economic environment has become more competitive and uncertain, and the changes happened more quickly, it makes business decisions more complex and difficult. Business model is one of the concepts or tools that facilitates business managers to make strategic decisions in this difficult environment. It is needed for the business managers to understand what their business model is and what essential elements it is consists of, which enable the business managers to assess, measure, communicate and change their business model in order to stay competitive in the tough business environment.   (Osterwalder, 2004)

Business model concept has become popular because of the arise of ICT (Information and Communication Technologies) and globalization. According to a research conducted by Osterwalder et al. (2005), the term business model used in literatures refers to two viewpoints, which are the way a company does business, and a conceptualization of the way a company does business in order to reduce the complexity to an understandable level.

Tracing back to its origin, it can be found that the popularity of the phrase "business model" is a relatively new. According to EBSCO (a worldwide literature database), the term "business model" was used for the first time in the context of business games used in management trainings (Bellman et al., 1957), and in a title of academic paper in 1960 (Jones 1960).

From 1960s to 1980s, the term was almost completely unknown and only occasionally used. The term "business model" increasingly started to appear in business journals since 1990. Based on the study conducted by Horsti (2007), the usage of the term "business model" increased as the growth of the Internet hype, gaining its peak in 2000. At the same time, academic research around the term was about to start. In examining the ratio between the academic journal articles and all the articles, it has been found that from year 2000 to year 2005 the ratio doubled (e.g. EBSCO from 8% in 2000 to 15% in 2005), suggesting that the term "business model" is used more in the academic journals comparing to other sources, such as business magazines.

1.1 Motivation of this study

The study indicates that business model research is not yet common in academic literature, and due to this fact a unified business model theory building is also scarce (Horsti, 2007). As mentioned before, business model has been mostly used in electronic business or ICT studies. When the service sector become more and more important in both GDP and employment, it would be very interesting and also important to study business model in the context of service business.

This study is initiated with the interests of the case company Oy Integro Finland Ab, which is a knowledge-intensive based service company. The study concentrates on the evolvement of the business model of the case company and its future development opportunities.

Knowledge-intensive business services (KIBS) are often considered as one of the hallmarks of the knowledge-based economy, which consist of firms that have emerged to help other organizations deal with problems for which external sources of knowledge are required. As business service, KIBS are concerned with providing knowledge-intensive inputs to business processes of other organizations. In recent years, KIBS have displayed more rapid and sustained growth rates than those of other economic sectors. KIBS's role in trade and employment has become more and more important. The performance of KIBS affects the performance of those organizations that are their clients, and thus the dynamism of KIBS sector impacts on the whole economy (EMCC, 2005). Due to the importance of KIBS, while study the business model of the case company, it would be beneficial to leverage the study also to the KIBS level.

1.2 Research problem and objectives

The case company plays the central role in this study. The evolvement of its business model and the future development opportunities of its business model are the main focus areas of this study. However, the study is not limited to the case company only, the targets are also to provide

general application to knowledge-based Small and Medium Enterprises (SMEs) to develop their business models, and to provide guidelines on how to develop business model.

According to Hodgson (2003) Figure 1-1, nowadays tough competition pressures the firms to pursue profits through two main means. The first move is enter new markets by geographical expansion and/or introduce new products. The second move is cutting costs through the adoption of new technologies and new skills. The companies need to have their business models flexible enough to deal with the tough competition and rapidly change environment.
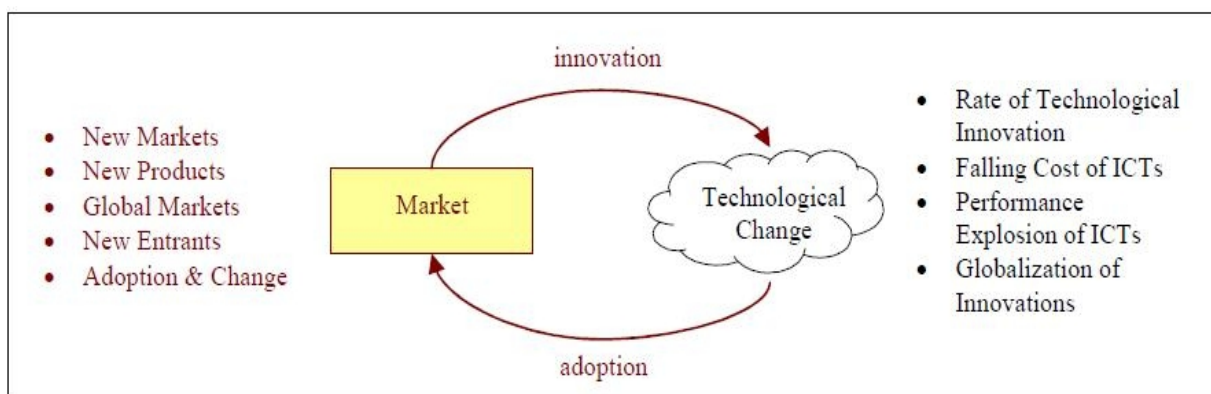
Figure 1-1 Competition and Technological Change (Hodgson, 2003)

The case company faces the same situation – expanding its market territory to presue more profits. Entering into the new market brings the basic **research question** of this study: whether the current business model of the case company is applicable to its new market operation, and what kind of modification is needed to adopt the current business model to the new market, furthermore, how to develop business model when expanding business to new market.

The **objectives** of this study include are as follow: firstly, understand business model concept and its importance. The study will describe the current business model of the case company and its evolvement, and try to identify the relationship between the key components of the case company's business model. Secondly, learn to apply the business model framework, which in this study is evaluating the case company's current business model, whether it is applicable to the

new market, and providing suggestions to the case company concerning development of its business model in the new market, and concerning the development of current business model. Thirdly, test and modify the business model framework of Rajala et al. (2001). To be more specific, the third objective is to apply Rajala et al.'s business model framework (2001) to analyze the case company, which can be viewed as a test of Rajala et al.'s framework, and to modify Rajala et al.'s business model to be more suitable for the case company in use.

1.3   Research method and structure of the study

This study is based on the review of previous academic discussion on the topic of business model development and the empirical study on the case company. In the literature study, the focus will be on the articles of academic journals, mainly in the field of business models and knowledge-based services. The data collection for the empirical research carried out in this study was observation, interviews and group discussions at the case company.

Although the study is conducted at the basis of the case company, it does not exclude the other companies operating in the knowledge-intensive business services sector. The study of the case company's business model development also enables the other companies in the same business sector to generalize the findings to a greater extend.

The analysis in this study will be mainly based on Rajala et al. (2001)' s business model framework, which was originally developed for software business. Necessary modification will be made to be more suitable for the case company in this study. Detailed information concerning Rajala et al.'s business model framework could be found in chapter 3.6. The reasons to choose this framework to analyze the case company, and how the analysis of the case company is based on Rajala et al.'s framework will be found later in empirical part of this study, and more in the application and modification of the business model framework chapter.

This study is structured based on a framework for logistics research developed by Mentzer and Kahn (1995). Firstly, the definition and main characteristics of knowledge-intensive business

services (KIBS) will be introduced. Secondly, the concept and usage of business model are shortly discussed and compared with the concept of business strategy. Thirdly, a framework for analyzing business model is introduced, and how it is applied to the case company will be discussed. Thereafter in the next chapter the evolvement of case company's business model will be described, and whether the current business model is applicable to the case company's new market will be analyzed based on the framework developed for software business. In chapter five and six the findings will be discussed and suggestions on how to modify its current business model to fit into its new market will be provided. And finally in the conclusion section, the study has been summarized, and the limitation of this study is discussed.

1.4   Key terminology

Business model: Osterwalder (2004) defined business model as a conceptual tool that contains a set of elements and their relationships and allows expressing a company's logic of earning money. It is a description of the value a company offers to one or several segments of customers and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, in order to generate profitable and sustainable revenue streams. Here company's logic of earning money refers to an abstract comprehension of the way a company makes money, in other words, what it offers, to whom it offers this and how it can accomplish this.

Knowledge-intensive business services (KIBS): consist of firms that have emerged to help other organizations deal with problems for which external sources of knowledge are required.

2.   Knowledge-intensive business services

2.1   Definition and characteristics of KIBS

The discussions about the 'service economy' or 'post-industrial society' took place in the early 1960s. Since then the growth of services has become one the main sources of economic output

and employment. Knowledge-intensive business services represent one the fastest growing areas of the European economy, which are also often considered as one of the hallmarks of the knowledge-based economy (EMCC, 2005). According to a study of Tekes (the Finnish Funding Agency for Technology and Innovation), knowledge-intensive business services in Finland had the fastest growing since 1995. (Kuusisto, J. & Meyer, M., 2003)

According to European Monitoring Centre on Change (EMCC, 2005), knowledge-intensive business services (KIBS) are a subset of business services, which are a subset of all services. KIBS are the services providing knowledge-intensive inputs to business processes of other organizations. The means of knowledge refer to both *explicit knowledge*, which is typically codified in books, reports, teaching programs, patents, etc, and *tacit knowledge*, which encompasses both those aspects of 'know-how', and so called 'routines' that the firms pursue in their technological search activities. Activities involved in knowledge-intensive business are those intended to result in creation, accumulation or dissemination of knowledge. (Miles et al., 1995)

Knowledge-based economy is sometimes misunderstood as a refashioning of the idea of 'information economy'. In order to have a clear understanding of KIBS, it is needed first to distinguish knowledge-based service and information-based service. Not all information-processing services are in the business of producing or supplying knowledge. For instance, basic telecommunication and broadcasting services, and financial transactions are mainly involved in storing and transferring data and information, rather than providing knowledge-intensive services. A rather strong implication of KIBS is that it requires more supplier-user interaction than many other information and communication services. (Miles et al., 1995)

KIBS are more than traditional professional services. Although, traditional professional services rely upon knowledge of various specialized fields, the typical purpose of traditional professional services is helping users to navigate/master complex systems, which are not so much related to technical systems, rather more concerning social systems (legal and accountancy services), physical systems (architecture and building services), and psychological and biological systems

(medical and veterinary services). As for KIBS, it is also related to development of services connected with technology, and with the production and transfer of knowledge about new technology. Another main difference between traditional professional services and KIBS is that traditional professional services are more of the users of technology, rather than as the agents in development and diffusion.

Knowledge-intensive business services (KIBS) are often considered as one of the hallmarks of the knowledge-based economy, which consist of firms that have emerged to help other organizations deal with problems for which external sources of knowledge are required. Miles et al. (1995) stated the main characteristics of knowledge-intensive business services, KIBS are the services rely heavily on professional knowledge, which makes their employment structures heavily weighted towards scientists, engineers, experts of all types. KIBS either supply products that are themselves primarily sources of information and knowledge to their users (e.g. measurements, reports, training, consultancy), or use their knowledge to produce services which are intermediate inputs to their clients' own knowledge generating and information processing activities (e.g. communication and computer services). KIBS have their main clients as other businesses (include both private and public businesses).

Another significant feature of KIBS is the high level of customer involvement in the service process. According to Beltencourt et al. (2002), the purpose of KIBS is to develop a customized service or product solution to the clients' need (e.g. information technology, consulting, technical engineering, software design), which makes the service delivery activities of KIBS complex, unstructured, and highly customized. Further, the clients' role in KIBS is emergent, multi-faceted, and highly collaborative, because the clients possess much of the knowledge and competences that a KIBS firm needs to deliver a successful service solution.

According to the definition gave by Miles et al., KIBS as a group includes two main sets of services, which are traditional professional services liable to be intensive users of new technology and new technology-based KIBS. The services belong to KIBS include such as marketing/advertising, training, design, some financial services (e.g. securities and stock-market-

related activities), office services (other than those "physical" services like cleaning), building services, management consultancy, accounting and bookkeeping, legal services, and environmental services, computer networks/telemetric (e.g. VANs, on-line databases), some telecommunications (especially new business services), software, technical engineering, R&D Consultancy and "high-tech boutiques".

Although there are some services contain the activities regarded as KIBS, they are not considered as KIBS according to the definition given by Miles et al. (1995). Those services include health/medical services, post, transport and distribution, consumer financial and real estate services, education services (other than specialised training for industry), broadcast and other mass media, public administration, repair/maintenance (with the exception of activities related to advanced IT), retail and wholesale, social welfare services, hospitality (e.g. hotels) and catering, leisure/tourism, personal consumer services, and entertainment.

2.2   Drivers and future trends of development in KIBS

Based on the study of European Monitoring Centre of Change (EMCC, 2005), there are mainly five drivers of the growth of knowledge-intensive business services, which are outsourcing of services, growing demand of technological knowledge, growing demand of specialized knowledge, internationalization and globalization of business, and increasing emphasis on service in current economy. When the firms began to focus more on their core competences, they have increasingly contracted out services which were originally internal operation. The rapid advance of technological performance and the proliferation of applications create the needs for the firms to have technological knowledge based business services. For a long time, KIBS provide intelligence and advice on dealing with regulatory structures, which help their clients thrive in the social environment. When more and more firms operate internationally, KIBS firms also need to internationalize in order to follow their clients into new operating environment, and may need to internationalize to find new markets for themselves. The rise of knowledge-based economy can also be seen as a driver of KIBS growth.

The growth drivers of KIBS also reflect the future development trends of KIBS. The first trend of KIBS is continuous growing. The second trend in many KIBS firms, but not all, is the tendency for larger firms to emerge and become dominant – the trend of concentration. Internationalization is another trend of KIBS firms. According to Toivonen (2004), there are mainly three models for KIBS internationalization: first, KIBS firms go internationally with their clients, and subsequently establish their own overseas operations; the second model is use the computer network to market the firms internationally, to interact with the clients, and deliver the service solutions; the third model is to establish partnership between similar firms in other countries. The third trend in KIBS is the change of relationship with the clients. The clients are more closed collaborate with KIBS firms, and the KIBS firms become more proactive when severing their clients. The fourth trend of KIBS is the firms broadening the range of their services, and there is some convergence among KIBS, as their services overlap. Toivonen (2004) argued that such convergence is the trend across the KIBS sector.

2.3   Development of business model in KIBS

Toivonen (2004) suggested that along the development of KIBS, the business models of the firms have also changed. One of the most important changes of business models is the relationship with clients, which indicates that the clients have become the centre of the business focus. Nowadays the starting point of business development turned to be what new value a firm could offer to its clients and how it can be achieved. Succeed in value deliver could lead the firm outperform in competition and bring more profits.

KIBS firms need to provide innovative service solutions to its clients, and networking is one of the practices helping the firms offer innovative values to the clients. KIBS firms as value innovators and would like to maintain long-term relationship with the clients, the firms need to have a network of partners that provides complementary assets, capabilities, products and services. Through the collaboration with the network partners, the firms build efficient demand-supply chain, which creates, maintains and improves the efficiency in production and distribution of services. Thus, for KIBS firms' clients, networking practices and new business model of KIBS

firms mean that KIBS firm is one actor among those cooperation partners that deliver the value to the clients. (Kim & Mauborgne, 1999)

Toivonen (2004) argued that the networking aspect has changed the business models of both KIBS firms and their clients. For KIBS firms' clients, networking practices of KIBS firms and new business models require them to have the interface skills, such as coordinative, strategic and conceptual skills, capacity to manage contract and KIBS relationship, in order to successfully manage the external provision of knowledge-intensive business service functions.

3.   From business strategy to business model

As business strategy and business model somewhat talk about the similar issues, people easily get confused with those two term. One thing needs to be clear: business strategy and business model are two different concepts. Business strategy focuses on the relationship between the enterprise and its environment (including its competitors), and business model emphasizes on the linkage between the enterprise' functions and resources, explaining how the enterprise works. Business model fulfills the gap between strategic planning and business implementation. According to Osterwalder (2004) Figure 3-1, business model is a conceptual blueprint translates business strategy to implementation. Here Osterwalder (2004) raises another important issue between business strategy and business model: whether the business model fulfills the needs of business strategy.
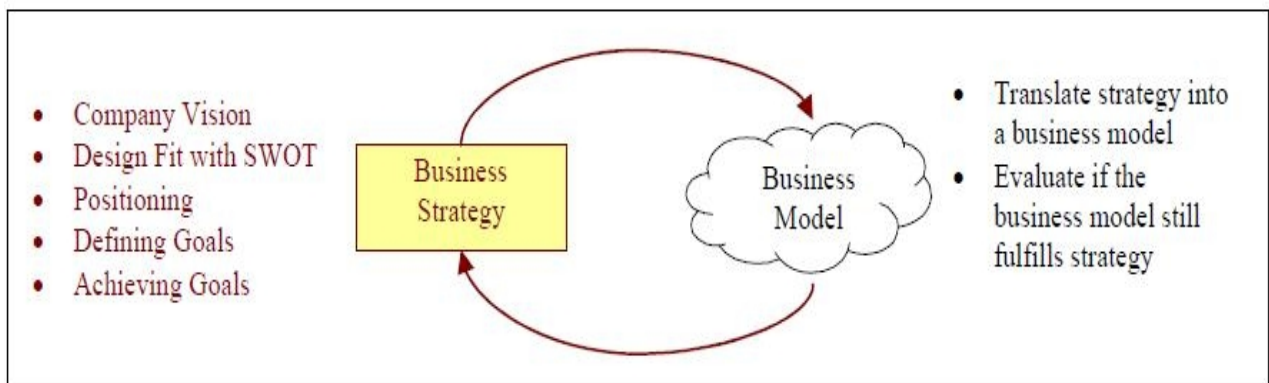
Figure 3-1 Business Strategy and Business Model (Osterwalder, 2004)

In the following chapter, business strategy and business model will be discussed explicitly.

3.1   Business strategy

Academies started discussing business strategy since 1970s. Steiner (1979) described business strategy is that which top management does that is of great importance to the organization. According to Steiner (1979), strategy refers to basic directional decisions, that is, to purposes and missions. It consists of the important actions necessary to realize these decisions. Strategy answers the questions, such as what the organizations should be doing, and what are the ends the organizations seek and how the ends could be achieved.

Andrews (1980) defined business strategy as the pattern of decisions in a company that determines and reveals its objectives, purposes or goals, produces the principal policies and plans for achieving those goals. It also defines the range of business the company is to pursue, the kind of economic and human organization it is or intend to be, and the nature of the economic and non-economic contribution it intends to make to its shareholders, employees, customers and communities.

In addition to the previous definition of business strategy, Hax (1990) added that business strategy refers to the firm's competitive domain. It is a response to external opportunities, threats, integral strengths and weaknesses as a mean of achieving competitive advantage. Strategy also refers to a logical system for differentiating managerial tasks at corporate, business and functional levels. Kaplan and Norton (2004) suggested strategy describes how organizations intend to create value for the shareholders, which at the highest level defines the shareholders' objectives for long-term value, for growth, and for productivity. Porter (2001) argued that strategy focuses on profitability, not only growth, and also focuses on ability to define a unique value proposition and willingness to make tradeoffs in what not to do.

To sum up those definitions, business strategy can be considered as managerial activity, associated with firm's creation and sustainability of its competitive advantages. It indicates the company decision pattern, defines the firm's products and markets, objectives, plans and range of industry, most important, it states how the company will do to achieve its future desire. However, effectively bring strategy from managerial level to operational level in a company requires the company allocate resources, establish policies, motivate and reward employees, install systems, and apply leadership, which are all about the issues within business model.

As business strategy is usually abstractive, it is difficult to bring strategy down to operational level. According to Osterwalder (2004) Figure 3-2, business model fulfills the gap between strategy and business process.
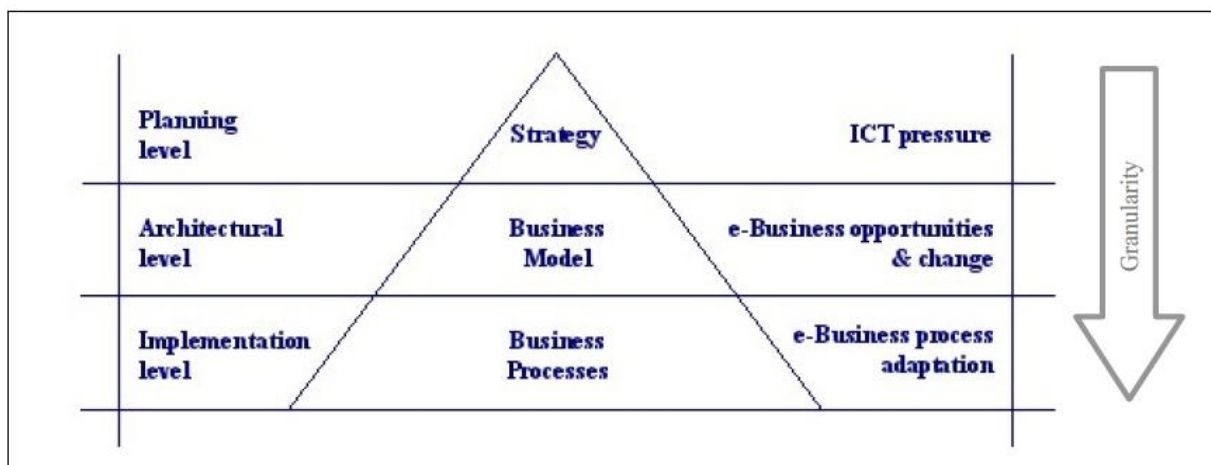
Figure 3-2 From Strategy to Process (Osterwalder, 2004)

Similarly, as shown in Figure 3-3, Horsti (2007) identified the business environment around business model concept, which specify the role of strategy, business model, and business process. In the next session, detailed definition of business model concept will be discussed.

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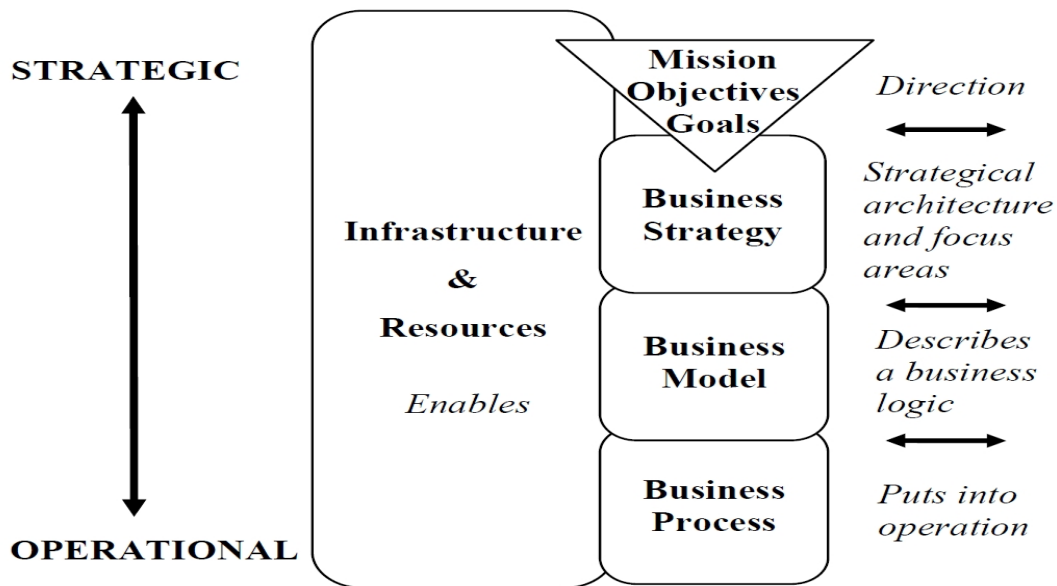
Figure 3-3 Business environment around the business model concept (Horsti, 2007)

3.2 Definition of business model

Business model concept has become popular because of the arise of ICT (Information and Communication Technologies) and globalization, thus, very often the term 'business model' is associated with ICT, Internet, or e-business. The term "business model" is used by many authors, but not necessarily means the same concept (Linder and Cantrell, 2000). In literature there is not a specific defined concept of business model (Mansfield and Fourie, 2003).

A simple understanding of business model is that it is a representation of how a company buys and sells goods and services and earns money (Osterwalder, 2004). Magretta (2000) described business model as a story that explains how an enterprise works. Although these descriptions of business model seem very simple, they provide the basic idea of what is business model.

To be more specific, Osterwalder (2004) defined business model as a conceptual tool that contains a set of elements and their relationships and allows expressing a company's logic of earning money. It is a description of the value a company offers to one or several segments of

customers and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, in order to generate profitable and sustainable revenue streams. Here company's logic of earning money refers to an abstract comprehension of the way a company makes money, in other words, what it offers, to whom it offers this and how it can accomplish this.

Afuah (2004) defined business model as a framework for making money. It describes the set of activities which a firm performs, how it performs them, and when it performs them so as to offer its customers benefits they want and earn a profit. According to Afuah, business model is related to how a firm makes money.

Timmers (1998) suggested that business model can be viewed as architecture for product, service and information flows, describing various businesses actors and their roles, resources of revenue, and potential business benefits for different business actors etc. Similarly, Weil and Vitale (2001) describe business model identifies the major flows of product, information, money, and the benefits to participants, and can be viewed as a desription of the roles and relationships among a firm's consumers, customers, allies, and suppliers.

Linder and Cantrell (2000) define business model as an organization's core logic for creating value. Similarly, Petrovic et al. (2001) define business model as the logic of a business system for creating value. They perceive business model as a description of a complex business that enables the study of its structure, of the relationship among structual elements, and of how it will respond to the real world. Simplication of the complex reality is one of the features business model has (Stähler, 2002). Another feature of business model identified by Rappa (2001) is its sustainbility, in other words, business model is the method of doing business by which a company can sustain itself.

3.3   Importance of business model

As business model describes how a firm's resources and its business environment are linked together to provide customer value and to generate a profit, a sustainable business model provides the firm an optimal mode of operation in a specific industry and market. (Mansfield and Fourie, 2003)

According to Magretta (2003), a good business model motivates people and brings in a rich stream of profits. To be more specific, a business model helps the manager to capture, understand, communicate, design, analyze, and change the business logic of the firm. A formally defined business model has many uses for a firm, including understanding and sharing the business logic, analyzing the business logic, managing the business logic, describing possible future of the firm, and patenting of business model from legal perspective (Osterwalder et al., 2005).

According to Osterwalder (2004), the first area business model contributes to is in understanding and shairng the business logic of a firm. Business logic refers to an abstract comprehension of the way a company makes money, in other words, what it offers, to whom it offers this and how it can accomplish this.Business model helps to capture, visualize, understand, communicate and share the business logic of a firm. Secondly, business model can improve measuring, observing and comparing the business logic of a firm. Thirdly, business model concept helps improving the design, planning, changing and implementation of business model. Additionally, with the business model approach, companies can react faster to the changes in the business environment. Business model concept could also improve the alignment of strategy, business organization and technology. Fourthly, business model concept help foster innovation and increase readiness for the future. Finally, increasingly companies in e-business seek to patent e-business processes and even the entire aspects of their business model. Therefore business model may potentially have an important role in legal domain.

In addition to these uses of business model discussed above, it is also considered as one of the major determinants of business profits, besides business environment and changes in the

environment. Thus a well-defined business model provides the firm with sustainable competitive advantages, and enables the firm to be better than competitors. (Afuah and Tucci, 2001)

3.4   Elements of business model

One of the most important issues about business model is making money. When it comes to business profitability, Afuah (2004) argued that there are mainly two determinants of business profitability, which are industry factors and firm-specific factors (positions, activities, and resources). These two determinants could construct a simple form of business model. As illustrated in Figure 3-4, a firm uses its resources to perform activities in order to generate revenue, and the firm's profit is the difference between revenue and cost. The firm position itself within the industry to differentiate from its competitors to create value for its customers.
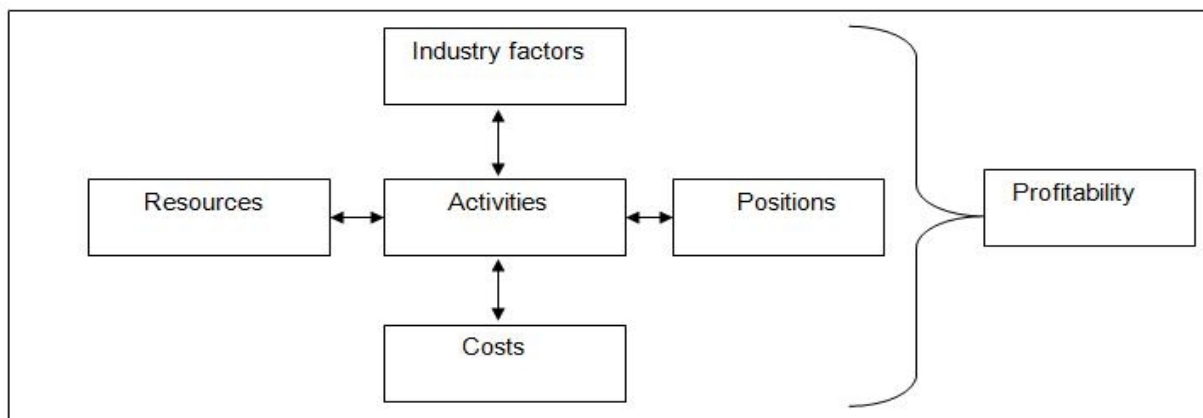
Figure 3-4 Components of a Business Model (Afuah, 2004)

Compare to Afuah's (2004) business model components, Stähler (2002) had a slightly different business model components, which is summarized in Table 3-1. Firstly, a business model describes what value a customer or partner (e.g. supplier) receives from the business. This so called value proposition is similar with Afuah's (2004) business model component – position. It indicates what value the business creates for its stakeholders. Secondly, a business model describes the products or services the firm provides for the market, which act as the link between the firm and the customers. It tells what the firm is selling. Thirdly, a business model describes

the architecture of value creation, which includes the value chain, the economic agents that participate in the value creation and their roles. It describes how the value is created and in what configuration. Finally, a business model describes the basis and the sources of income for the firm. The revenue model determines the value and sustainability of the business.

Table 3-1 Stähler's Business Model Components (Stähler, 2002)

BM component	Questions to ask
Value Proposition	What value does the company create for customers and partners?
Product/Services	What does the firm sell?
Architecture	How and through what configuration is value created?
Revenue Model	How does the company earn money?

To be more specific, Osterwalder (2004) proposed a business model consisting of nine relevant business model building blocks, which integrates and summarizes different conceptualizations into a single model. The nine building blocks can be found in Figure 3-5, which include core capabilities, partner network, value configuration, value proposition, customer relationship, distribution channel, target customer, cost structure, and revenue streams. Those nine building blocks of business model can be categorized into four groups: **infrastructure management** (core capabilities, partner network, and value configuration), **product** (value proposition), **customer interface** (customer relationship, distribution channel, and target customer), and **financial aspects** (cost structure and revenue streams).
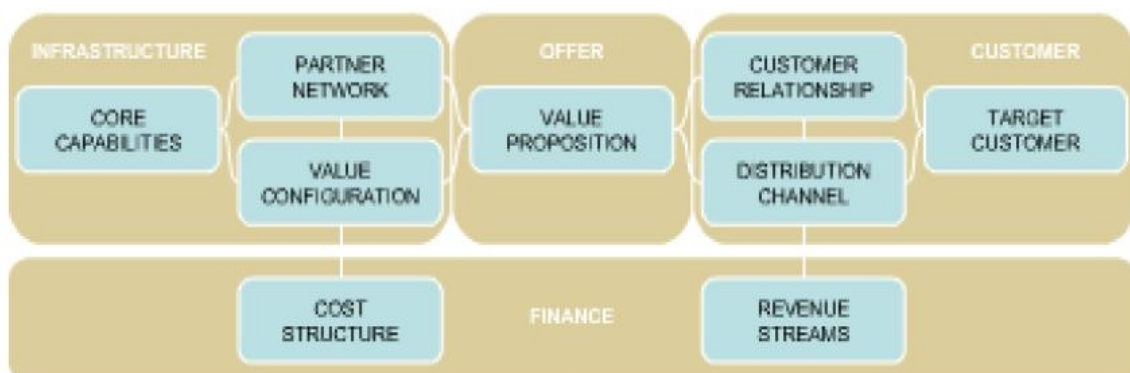
Figure 3-5 The Nine Business Model Building Blocks (Osterwalder, 2004)

According to Osterwalder (2004), core capability is the ability to execute a repeatable pattern of actions which is necessary in order to create value for the customers. Partnership is a voluntarily initiated cooperative agreement between two or more companies in order to create value for the customers. The value configuration reflects the arrangement of activities and resources that are necessary to create value for the customers. Value proposition is an overall view of a company's products and services that are of value to the customers. Relationship describes the kind of link a company establishes between itself and the customers. Distribution channel is a means of getting in touch with the customers. Target customer is a segment of customers a company wants to offer value to. Cost structure is the representation in money of all the means employed in the business model. Revenue model describes the way a company makes money through a variety of revenue flows.

Nayak et al. (2007) discussed the main domains of business architecture for a **service-oriented enterprise**, which are also representing some of the elements in business model concept, including: business value, structure, behaviour, policy, and performance. These five domains are covered by business model concept, some might have different terms, and these five domains illustrate the fundamental area for service-oriented companies.

Business value model describes how a company produces value by participating in the network of partner companies, elements include offerings and value to customers. Business structure model describes how the company is formed by different functions. Business behavior model describes how the company internally operates, and how its partners behave. Business policy describes the direction and guidelines for the company and partner relation. And business performance model describes the factors needed for evaluating company performance. (Nayak et al., 2007)

The development of electronic commerce reduced the meaning of distance, made the global service reach possible, and the firm can approach and serve their customer through Internet. Electronic commerce has also effected business models of service-oriented companies. Internet can help service company build credibility in international markets while save the travel cost or

the cost of local appearance, for instance Amazon.com. The typical service business includes engineering service, insurance service, communication service, teaching/training service, and consulting service. When it comes to internationalization, there are several significant decisions a firm should make, including product/service policy (standard offer or localized offer), market entry strategy, pricing policy, distribution policy (channel selection and management), promotion policy, etc. While select a business model in international market, those are the key elements/components should be considered and well-planned. (Czinkota et al., 2002)

3.5   Research of business model

According to Jones (1960), the first time business model has been used in academic paper, till recently business model became a popular topic in both academic research and business world. The purpose of business model researches is to establish a well-formed theory frame, which can be utilized in real business world, for the companies to develop their business.

From Figure 3-6 Maturity of e-business model studies, developed by Pateli and Giaglis (2003), the previous research on e-business model mostly focused on constructive and static point view of business model. Although the information is based on e-business model studies, to some extend, it can be generalize to all kinds of business model studies. The research focus has shifted from constructive and static view-point to more evaluative point of view, which emphases on describing the dynamic nature and evolution of a business model. The process of business model evaluation usually start with set and follow up of the goals and objectives of a business model, and then develop a business model based on the feedback received from the research, after that compare the business model with competitors' model or a certain framework of business model, finally prove and verify the gained success of a business model and make necessary changes to the model if needed. (Horsti, 2007)

It can be found from Figure 3-6 (Pateli and Giaglis, 2003) that there are generally six level of business model studies. Firstly, in the definition level, research is usually defining the purpose, scope, and primary elements of a business model, and exploring its relationship with other

business concepts, such as business strategy and business process. Secondly, the business model research develops into the components study domain, which analyzes the business model concept further into its fundamental constructs (components). Thirdly, the research on business model develops possible categorizations of business models into a number of typologies based on various criteria, which can be viewed as the taxonomy level of research.
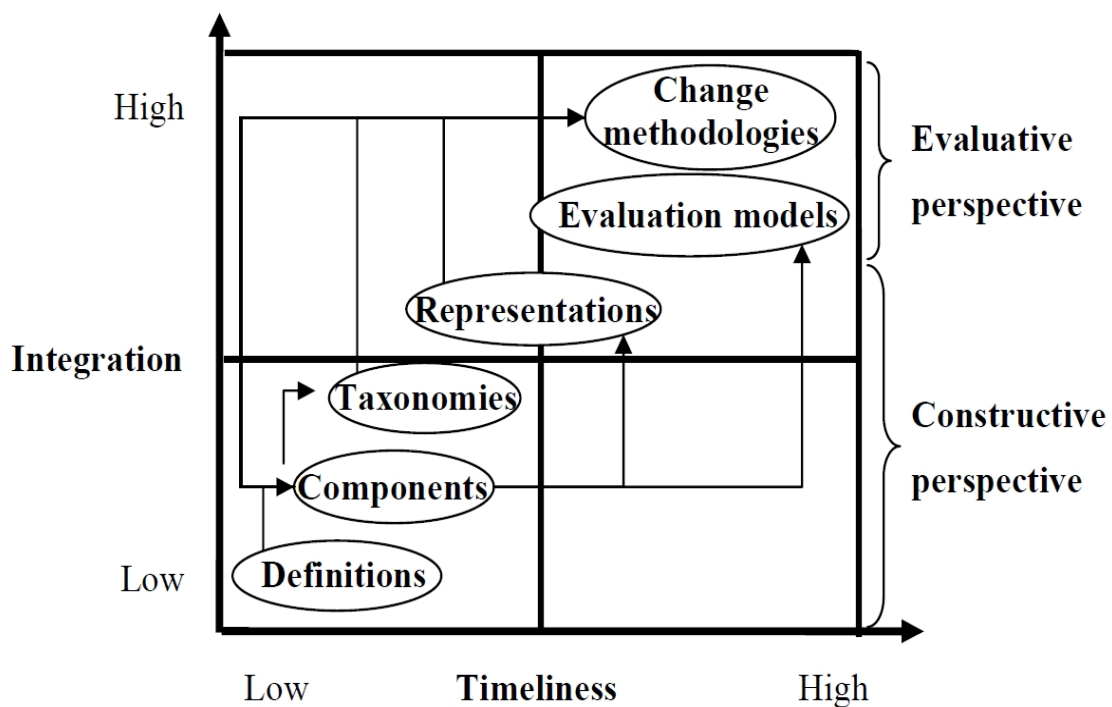
Figure 3-6 Maturity of e-business model studies (adopted from Pateli and Giaglis, 2003)

Fourthly, business model research proposes a number of possible instruments for visualizing the primary components of a business model and their interrelationships, which can be described as the representation kind of research. Fifthly, the research on business model focuses on formulating guidelines, describing steps, and specifying actions to be taken for either changing business models to adapt to a business or technology transformation, or choosing an appropriate business model. This is a relatively new area, which can be called change methodology research on business model. Finally, the research of business model is concerned with identifying criteria for either assessing the feasibility and profitability of business models or evaluating a business

model against alternatives or best practice cases. This kind of research is referred as evaluation model research, which is also a relatively new research domain of business model research.

The first four research domains, including definitions, components, taxonomies, and representations, focus more on constructive perspective, which aims at establish the frame of business model concept. And the last two domain – change methodologies and evaluation models, focus more on evaluative perspective, which targets at the application of business model concept and its usage in business world.

To sum up, business model as a relatively new concept, it has already taken companies and academies' attention. The importance of business model, and its usage, have been realized and, more and more been considered in both business world and academic world. However, in the current research of business model, the focus is mostly in e-business, relatively less in service field. Service sector has becoming more and more important in current economy, thus the need of research on the topic of business model in service sector has also becoming more and more important. To summarize the previous discussion in this chapter, it can be found that business model acts as a bridge connects the business strategy and business process, and a company's business model can show its employees, customers, and partners the big picture of the company's business, smoothes the communication, deepen the understanding etc. Even though there are many different definitions about business model and its key elements, to some extent, they all share certain similarities. For the future research of business model, there is the need for a systematic theory frame, and more attention is needed for business model in service sector.

3.6   One example of business model framework

As shown in Figure 3-7, the software business model is one of the basic business model frameworks that has been used in research papers, and it be will applied in this study to analyze the business model of the case company. The elements include product development, revenue logic, marketing and sales model (distribution model), and servicing and implementation model. The product development model describes the core product the case company offers and the way

its development work is organized. The revenue logic focuses on the way the case company generates its revenue and profit. Marketing and sales model (distribution model) emphases the way marketing of the case company's product and service offering has been organized and who is the distributor. Servicing and implementation describes how the product offering will be delivered to the customers as working solutions. The analysis of the case company will be based on those elements.

Figure 3-7 Software Business Model (Rajala et al., 2001)

The primary reason to choose Rajala et al.'s (2001) business model to be the analysis framework is that there is no defined business model for the companies or businesses like the case company. Secondly, the core business of the case company is to offer the product and related training to its customers, and the service package is heavily relying on the case company's professional knowledge. Thus the case company can be viewed as knowledge intensive business service company. At the same time, software company which also offers training and consulting to its clients is one of the most typical business of knowledge intensive business service. Categorized into the same service sector, it makes the case company shares many characteristics of software company, for instance, external professional knowledge is offered to the clients, the customers are highly involved in the service process, product is always provided by the company together

with training or consulting, etc. Those similarities are the basic ground for applying the software business model to analyze the case company.

4.   Research methods and framework

This study is structured in the way based on the research framework developed by Mentzer and Kahn (1995), which can be found from Figure 4-1. Although this study does not contain every step in Mentzer and Kahn's framework, the main components are included.

A FRAMEWORK OF LOGISTICS RESEARCH

IDEA GENERATION

LITERATURE REVIEW   OBSERVATION

SUBSTANTIVE JUSTIFICATION

THEORY

HYPOTHESES   CONSTRUCTS

MEASURES

METHODOLOGY

ANALYSIS

CONCLUSIONS
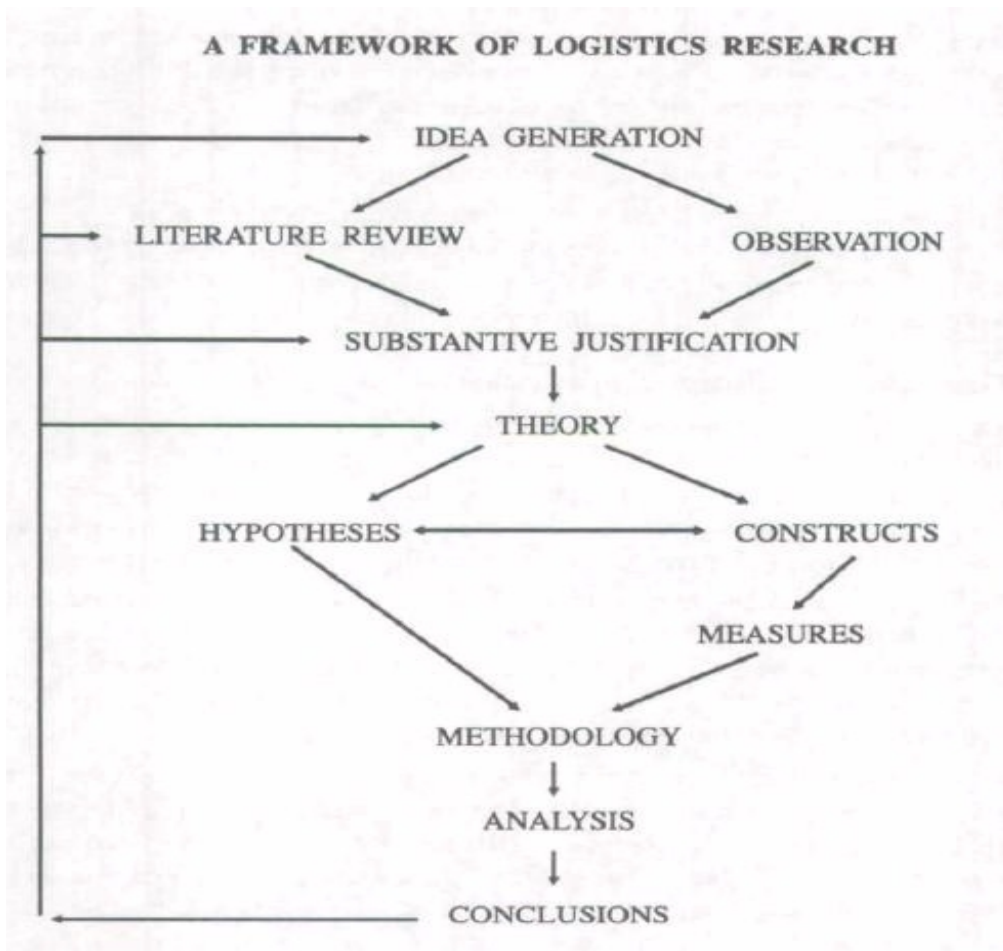
Figure 4-1 A Framework of Logistics Research (Mentzer and Kahn, 1995)

This study process started with idea generation, which occurs via observation and literature study on the topic of business model. The thesis is organized with the first main section – literature review. The purpose is to provide a historical perspective of the research area, which could help to support ideas generated intuitively and illustrate the relevant research that has already been conducted.

Since observation is unique in each individual research and to each circumstance, the approach of observation varies. In this thesis, case study is the approach of observation. The observation begins with facts description, and develops into discoveries. Besides observation and literature review, there is justification needed. Justification drivers the study to develop the research questions and provides the research direction for the researcher. Justification provides the foundation of how the study will make a significant contribution within its discipline, in other words, the value of the study within its own area.

After the justification has been made, the study derives the theories, or so called literature review, about the topic to be studied. The purpose of literature review is to explain, predict, understand, and control the research study. The implementation of literature review begins with summarizing older theories followed by the description of current situation, and leads to future discoveries. Based on literature review, the study develops the hypothesis of the study, which is defined as the proposition that asserts a relationship between facts.

The methodology of the research contains the topic from research design to data collection. Issues to be considered include data collection, criteria of sample selection, measures to be used, and data analysis process. The methodology choice is influenced by the previous research and study objective. In this thesis, intensive study of the case company is the main research methodology.

One of the most used methods in business model research is conducting interviews, with the managers of the case company, with its network partners and customers. The interviews were structured based on the frame provided by Osterwalder (2004). The interview questions were

semi-structured open-ended questions composed of four parts. The first part was composed with the questions on the use of business concepts and tools in the case company. The purpose of the first part questions is to indicate the level of understanding of the business concepts in the case company. The second part of the interview is mainly presenting a short description of the case company's current business model and its development path.

The third part of the interview is to find out the interviewees' opinions concerning the description of the case company's business model. For instance, the questions could be: "In your opinion, what elements are missing in the description presented before?"; "what elements should not be included in the description? or which ones are not very accurate?" etc. The fourth part of the interview was to find out the possible uses of the presented business model description, in other words, to investigate the usefulness of the described business model. The following questions can be asked during the interview: "How would the description of the business model help the decision making in the case company?"; "How would such a model could improve the strategic planning?"; "How would such a model could foster the innovation in the case company?"; "How could it be helpful to have such a model to communicate with customers, employee, or business partners?" etc. After the fourth part of the interview, the interviewees were offered with the opportunity to provide their own comments toward the business model of the case company.

There are several strengths of such interview. Firstly, it creates a transparent big picture of a business and finds out the relationship and dependencies of the business elements. Secondly, it establishes a commonly understood language to enable better communication concerning business issues. Finally, it can raise the fundamental questions of a business and help the business participants to reflect the understanding of their business.

As one of the most important strategies the case company has is to expand its business from Finnish market to Chinese market, the validity of its product in China should be tested. Thus this study also used questionnaire to conduct a quantitative research concerning the validity of case company's product, which is viewed as one of the key elements of case company's business model. The targets of the testing included approve the validity and reliability of case company's

product, and find out the suitability of the translation (from English to Chinese). Product testing played a significant role as the result from testing will affect the initiation of the case company's market expansion.

The product testing was organized jointly with the case company and a Chinese university – Shandong University in Jinan, and the author of this thesis was the coordinator in the testing project. Testing started with participant definition. There were main three testing groups from two cities in China – Xi'an and Jinan, which are among the fastest developing cities in China. Two groups of testing participants were from Jinan, one was working group, and another was master students of project management in university. The third group was from Xi'an, which were master students of project management in a university in Xi'an. All the participants are from 25 – 40 years old. The product testing started with the testing participants collection. A short introduction of case company's product has been sent to potential participants, and they can decide if they want to join the testing process. The second step was to collect the basic information of testing participants (e.g. name, gender, profession, e-mail address, contact information etc). The participants' information and later the testing feedback were saved in a database both the case company and the research institute have the access to.

All together three questionnaires were sent to the testing participants, which contained the questions concerning the suitability of the translation, understandability of the product, and the reliability of the product. The participants gave their answers to the questionnaires through a web survey tool (http://www.wenjuantong.com). The data saved in the survey tool was analyzed with the statistics tool SPSS (re-branded as PASW – Predictive Analytics Software from 2009). Based on the feedback from participants, necessary changes have been made to the case company's product.

The product was not only tested among the participant, a group of professors from the relevant filed of human resource development have also provided their opinions toward the case company's product. The professors from Chinese universities have also offered their suggestions

and recommendations concerning modify the case company's product to be more suitable for Chinese customers.

Finally, in this study the data or findings from the interviews and testing project will be analyzed and discussed based on the software business model developed by Rajala et al. (2001), Figure 4-2. The reason for choosing this model is that the case company's business shares most of the characteristics of software business, and the detailed explanation can be found as below. Validity and reliability of the study will be considered.

As mentioned before, the primary reason to choose Rajala's (2001) business model to be the analysis framework is that there is no defined business model for the companies or businesses like the case company. Secondly, the core business of the case company is to offer the product and related training to its customers, and the service package is heavily relying on the case company's professional knowledge. Thus the case company can be viewed as knowledge intensive business service company. At the same time, software company which also offers training and consulting to its clients is also belonging to knowledge intensive business service. Categorized into the same service sector, it makes the case company shares many characteristics of software company, for instance, external professional knowledge is offered to the clients, the customers are highly involved in the service process, product is always provided by the company together with training or consulting, etc. Those similarities are the basic ground for applying the software business model to analyze the case company.

Rajala et al.'s (2001) software business model is the basic framework in this study to analyze the business model of the case company. The elements include product development, revenue logic, marketing and sales model (distribution model), and servicing and implementation model. The product development model describes the core product the case company offers and the way its development work is organized. The revenue logic focuses on the way the case company generates its revenue and profit. Marketing and sales model (distribution model) emphases the way marketing of the case company's product and service offering has been organized and who is the distributor. Servicing and implementation describes how the product offering will be

delivered to the customers as working solutions. The analysis of the case company will be based on those elements.

Following the data analysis, there will be the suggestions offered to the case company. And the study will also provide the implication for other similar businesses. Finally, it will indicate the future research areas on the topic of business model evaluation and development.

5. Empirical study

5.1 Background information of the case company

Oy Integro Finland Ab is an expert organization established in 1975. Its core competence consists of understanding differences in behaviour, accepting such differences and taking advantage of them; the building of trust and improvement of encounters between (different kinds of) people. Integro serves organizations by providing tools of the Peili™ product family and the certifications for the Peili™ trainers, training and consulting services related to them in various fields of utilization. The services facilitate the development of organizational functions from customer services to sales and project work, team work, recruitment and the well-being of the work community, to mention a few. All in all, the purpose of Integro's services is to develop the culture of encounters within organizations to reach a level of high quality in communications. This is achieved by improving the interaction between people, individual efficiencies and self-knowledge.

Integro serves its customers by offering effective development programs to groups and individuals. The programs are based on clear basic programs which are adapted to meet the requirements of customers' development processes. The idea is that productivity can be increased by paying special attention to effective use of human resources in development methods. Integro's view is that all well functioning human relations – at work as well as in private life – are based on trust. That ability to build trust can be developed both at individual and working group levels. With this a more open working atmosphere is created, where increased

responsibility, commitment and creativeness contribute the results and the increase of productivity.

Peili Behavioural Profile and Peili Project Leadership Assessment are the two main products of Integro. Peili behavioural profile specializes in describing and utilizing human behavioural diversity. The report of Peili behavioural profile provides the information on "How others see me" through the assessment by 5 people (plus self-assessment) for the individual who has ordered his/her profile. It is an Internet-based program available in four different languages: Finnish, Swedish, English and Chinese. It has been used in the business world over 30 years, involving development as well as studies on the reliability and functionality of the profile. The purpose of the behavioural profile is to increase a person's self-knowledge and ability to understand and face differences. The behavioural profile can be used to develop the cooperation and interaction skills and the ability to build trust.

Peili project leadership assessment is a 360-degree evaluation assessment tool, which emphasizes on individual leadership skills development in project context. It is a feedback and development tool for individual coaching and consulting, which can be used also for organization development with assessed person's permission. Peili project leadership assessment consists of participant's self-evaluation and evaluations made by his/hers manager, colleagues, and sub-coordinates. It can be used to increase the self-awareness of the individual, and provide clear and practical information about the strengths and development areas as a project manager or project owner. With the permission of the assessed, the results could also help the companies in selecting most qualified persons considering behavioural competences for project managers.

Integro has developed the Peili™ certification program for using the Peili™ tools in various fields of utilization. In this connection, Integro has developed and prepared training concepts as well as material related to them for the purposes of its certification services. Integro organization has a small solid team and a large net of cooperation organizations and experts and trainers in utilizing diversity (more than 60 in Finland).

Peili tools have been successfully used in western countries to improve the efficiency and communications in teamwork already more than 30 years. Integro's main owner has been developing relations to the Project Management association in China from 1993. The application of Peili tools for team building in project management was seen as one potential opportunity. Thus Integro made its strategic decision to expand its market to China.

Following analysis of case company's business model will be based on Rajala's software business model (2001). Therefore the main parts will include product development, revenue logic, marketing and sales model (distribution model), and servicing and implementation model.

5.2   Product development model

Starting with product development, the case company is mainly offering two products to its customer: Peili behavioural profile and Peili project leadership assessment. Peili behavioural profile has been offered to the market since 1975, which involves development as well as studies on the reliability and functionality of the profile. In 1970s and 1980s Peili behavioural profile was made by fulfilling the paper form questionnaires, and the staff from the case company would analyze the answer, and provide the customer with his/her profile. From 1990s, due to the development of computer science and Internet, Peili behavioural profile became an Internet based tool. The customer receives the instruction of making their own profile via email, and answer to the questionnaire through Internet. The result is analyzed by computer program, and the profile is printed for the customer. Transferred from paper form to Internet-based product is the key development of Peili behavioural profile. It simplifies the process of making the profile, reduces the workload of staff, fastens the overall service process, and because of the worldwide Internet, it gives the case company the opportunity to expand its market.

Besides the technical development, the case company also conducted validity studies of Peili behavioural profile. In year 2003, Anne Haajanen, master student of Education, analyzed the reliability of the Peili™ behavioural profile matrix in her master's thesis for the University of Helsinki. Her research material was a random sample of 597 responses out of a database of 9877

responses. According to her research the matrix is easy to differentiate and it is reliable (dominance .86, formality .85 and flexibility .96). All five respondents, who evaluated a specific person's behaviour for a Peili™ behavioural profile, evaluated the behaviour of that person in question in a relatively similar manner. The behavioural profiles were understood well and they were considered accurate.

When the case company decided to expand its market to China, it conducted a validity test of Peili behavioural profile in China, jointly with a Chinese university – Shandong University. Because Peili behavioural profile is mostly used in human resource development training, its validity could be affected by different cultural background, thus the study of its validity in China is significant. The application of Peili tool for team building in project management was seen as one potential opportunity. The case company has identified project teams as the target group, as it is quite easy to apply Peili behavioural profile to project team training, which is also very common in the Finnish market.

The first version of Peili behavioural profile was the translated version in Chinese language, which was developed during summer 2007. The product has been introduced to around 20 Chinese people in Finland. The Chinese version has been preliminary tested and feedback was collected from a group of 20 people in Finland. The need to take into consideration the special aspects of Chinese culture in the Chinese Peili behavioural profile became obvious based on the result of this test.

The targets of the formal testing included approve the validity and reliability of Peili behavioural profile, and find out the suitability of the translation (from English to Chinese). The case company organized the testing jointly with a Chinese university – Shandong University. The testing request was sent to around 300 people in China, either master students of Project Management, or people working in projects in different organizations. 123 people replied the questionnaire. Among the respondents, 85% consider Peili behavioural profile is understandable, and 94% consider the profile is reliable. The case company also consulted with the Chinese professors in the field of human resource development and project management, and the opinions

on how to modify Peili behavioural profile have been collected and discussed. Generally speaking, the validity of Peili behavioural profile has been approved during the testing, and necessary modification has been made. (Peili Goes to China Development Program Achievements, 2008)

Compare with other behavioural or personality assessment, the main competitors of Peili behavioural profile include a psychological test Myers-Briggs Type Indicator (MBTI) assessment, and a behavioural test DISC assessment. Both of them have conducted the validity and reliability study. As the result of MBTI is solely relying on self-assessment, its reliability became quite questionable. Studies have found that between 39% and 76% of those tested people fall into different types upon retesting some weeks or years later. One study conducted by Harvey (1996) reports that the MBTI dichotomies exhibit good split-half reliability, however, the dichotomy scores are distributed in a bell curve, and the overall type allocations are less reliable. Also, test-retest reliability is sensitive to the time between tests. Within each dichotomy scale, about 83% of categorizations remain the same when individuals are retested within nine months, and around 75% when individuals are retested after nine months. About 50% of people tested within nine months remain the same overall type, and 36% remain the same type after more than nine months. In another study conducted by Carskadon and Cook (1982), when people were asked to compare their preferred type to that assigned by the MBTI, only half of people picked the same profile.

The DISC assessment has also made similar validity research study. In the study, people were asked to make the test four times all together. The results from the first test act as the benchmark to compare with the rest three times. The research result showed that in the second test, which was 1 week after the first time test, around 90% of the people got the relatively same result as the first time. In the third round test, which was 5 to 7 months after the first time test, around 80% people got the relatively same result as the first time. In the fourth round test, which was 1 year after the first time test, around 75% of the people got the relatively same result as the first time. (DiSC® Validation Research Report, 2005)

The need to develop project managers' leadership and social skills (behavioral competencies) is increasing significantly as professional project management is increasing. To fulfill this market needs, the case company has developed another main product Peili project leadership assessment. Peili project leadership assessment is a 360-degree evaluation measurement tool developed by psychologist Tiia Arjanne, who had 25 years experiences working with different 360-degree evaluation tools. The assessment is based on the Project Behavioural Competencies as defined in International Project Management Association developed National Competencies Baseline, version 3,0. There are 15 behavioural competencies defined as project managers' behavioural competences and each of them is measured with five questions with the five-step scale in the assessment. (Caupin et al., 2006)

Currently, Peili project leadership assessment is developed to be ready for pilot testing. The purposes of the pilot for the first version of the assessment include improving the questionnaire to meet the requirements of Project Management discipline, adjusting the software as user-friendly as possible, improving the design of different reports, defining the concept to select persons in to Assessment process, and designing the consulting process of the Leadership Assessment. The process of the pilot started with identifying the suitable pilot customers, after the potential customers agreed to participated in the pilot, the customer will completed his/her leadership assessment with the instruction provided by the case company. When the customer got the result of his/her assessment, the consultant from the case company will offer the customer 2 hours consultation concerning the assessment. After the consultation, the customer will provide his/her feedback or suggestions for the case company concerning the assessment tool and consultation process. When the pilot process is completed, the Peili project leadership assessment will be ready for the market.

5.3   Revenue model

The case company has mainly two revenue streams. The first is certify trainers to use the case company's products in the trainer's training or consulting services, shown in Figure 5-1. The case company certificates trainers, coaches and HR professionals to use Peili tools in various fields of

organization and human resource development. The trainers will pay for the certification training and get the license of using Peili products.

Figure 5-1 Peili Trainer Certification (Oy Integro Finland Ab, 2009)

The second revenue source is the sales of Peili behavioural profile and Peili project leadership assessment, described as Figure 5-2. Firstly the customer orders training from a Peili trainer, and the trainer plans to use Peili products during the training. Secondly, the trainer will order certain amount of Peili products from the case company, the case company receives the order, and make the Peili products for the customer. Thirdly, the case company will send the invoice to the trainer, and the trainer will send the invoice to the customer (includes training fee and the fee of Peili products). Finally, the trainer gets paid from the customer, and pay the fee of Peili products to the case company. As agreed between the case company and the Peili trainer, for each of the Peili product the trainer has sold to final customer, the trainer will get certain percent of commission fee. In some cases, if the customer directly order Peili training and Peili products from the case

company, the case company usually will recommend a suitable Peili trainer to handle the Peili training.
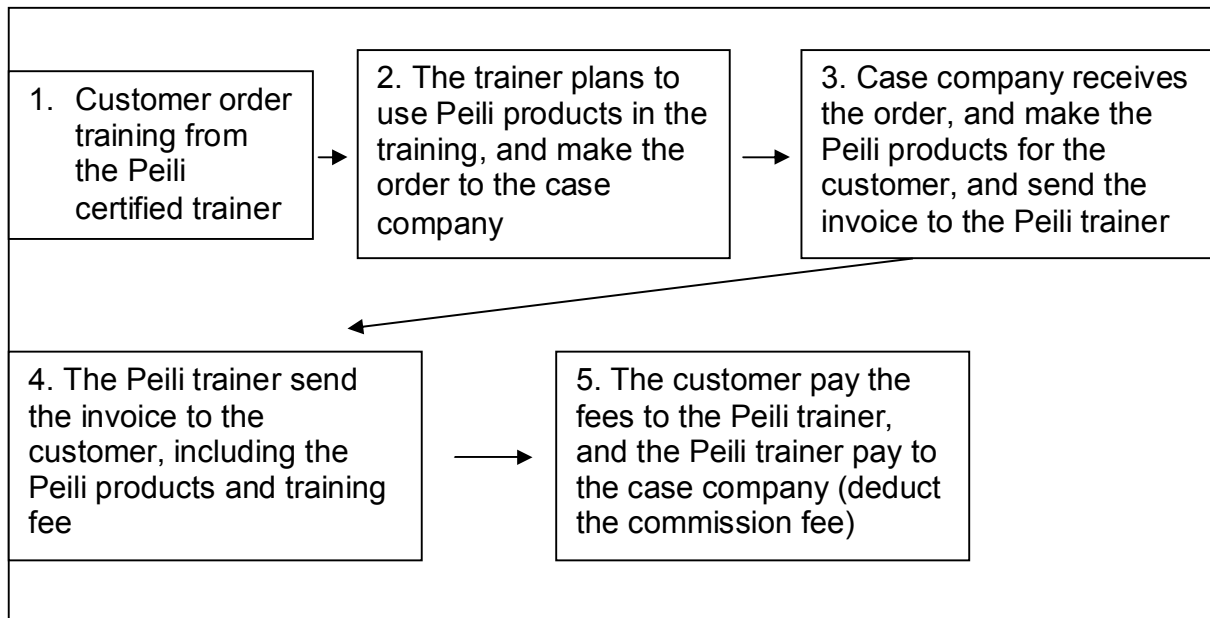
Figure 5-2 The sales process of Peili products (Oy Integro Finland Ab, 2009)

Comparing with other similar products, such as DISC assessment or MBTI assessment, the case company has the similar revenue logic. Both DISC and MBTI assessment have the certification training and sales of its products as the revenue sources. However, those two products have one more sales channel, which is directly sell the assessment tools to the customer through CD-version of the assessment. To be more specific, DISC or MBTI burn the assessment and the results in a CD, and sell the CD directly to the customer, who does not want the training. Usually the CD contains 50 – 100 times of the assessments, for the use of 50 – 100 people. With this sales channel, it is easier for DISC and MBTI assessment to expand to long-distance markets.

5.4   Marketing and sales model

Established in 1975, the case company mainly operated in Finland. The product and service of the case company has received very positive feedback from the customers. The product of the

case company is very-known in the human resource development training field in Finland. Within this field in Finland, the most used marketing channel of the case company's product and service is word of mouth marketing. In other words, the potential customers heard the recommendation from the existing customer of the case company, and decide to try the product and service of the case company. Up to now, it is needed to differentiate the customer groups of the case company. There are mainly two groups of customer: firstly, the trainers, coaches, consultants, and human resource professionals, who are interested to use the case company's product in their training service, and decide to be certified by the case company; secondly, the end-users of the case company's products, who will directly participate in the Peili product assessments and get the result for him/herself.

For the first group of customers, which is the trainers, coaches, consultants, and human resource professionals, besides word of mouth marketing method, the case company hold a marketing demonstration every month. During this demonstration, the case company will invite potential customers who are interested to become Peili trainer, or the potential customers will register themselves to this event (the information of each demonstration is published on the case company' website), and the senior certification trainer from the case company will give one afternoon training promotion to the potential trainers. During this demonstration, the potential trainers are given the opportunity to get their own assessment of the case company's product. The certification trainer from the case company will give a presentation about the case company's product and how to use it in human resource trainings. Other information included in the demonstration is, for instance, the benefits of the assessment and training, basic framework of the product, and the services available for the certified trainers.

For the end-users of the case company's product, the main marketing is done through the certified Peili trainers. Those certified trainers are mainly freelance trainers or working in training organization, or in-house training department. The trainers usually have certain customer groups who might be interested in purchasing the case company's product. Thus the certified trainer could introduce, in other words, market the case company's product to the potential customer. There are three kinds of motivation for the trainers to market the case company's product. Firstly,

the trainer consider it is good to include the case company's product in the training he/she is organizing, which can help the trainer enrich his/her training. Secondly, the trainer could get more trainings in relevant field, if the customer wants to participate in the Peli assessments. Thirdly, when the trainer gets the order from his/her customer for the case company's product, the trainer will have certain amount of commission fee. All these motivation together become the reason for the certified trainers to promote Peili products. And the for the case company, to apply this marketing strategy could not only save the direct marketing cost, but also maintain the quality of the product promotion, in other words, the certified trainers are qualified marketing promoters in terms of the knowledge about the case company's product.

For other similar products, such as DISC assessment and MBTI assessment, besides the promotion from their trainers, they have more direct marketing activities towards the end-users. The main communication channel between the potential customers and the case company is telephone calls. And for the competitors, their communication channel with the potential customer includes: internet, publications, and telephone.

5.5   Servicing and implementation model

The process of the case company's service towards the product end-users can be shown in Figure 5-1 and Figure 5-2, which are based on the two main products of the case company. For Peili behavioural profile (see Figure 5-3), the process starts with the order from customer, the case company will collect the basic information of the customer, including name, gender, email address, and organization name. After the case company will create the user account in the database for the customer to make the behavioural profile. For the customer, the case company will send the personal password to the customer via email. The customer will first complete the self-evaluation on the Internet. And then the customer will choose five colleagues to evaluate him/her. The colleagues receive the instruction and password from the customer and fill the evaluation questionnaire on the Internet. All the answers to the evaluation questionnaire will be saved in the case company's database. The case company's program will calculate the

behavioural profile result report for the customer based on the answers received. Finally the report will be given to the customer by a Peili trainer during the training or consulting.
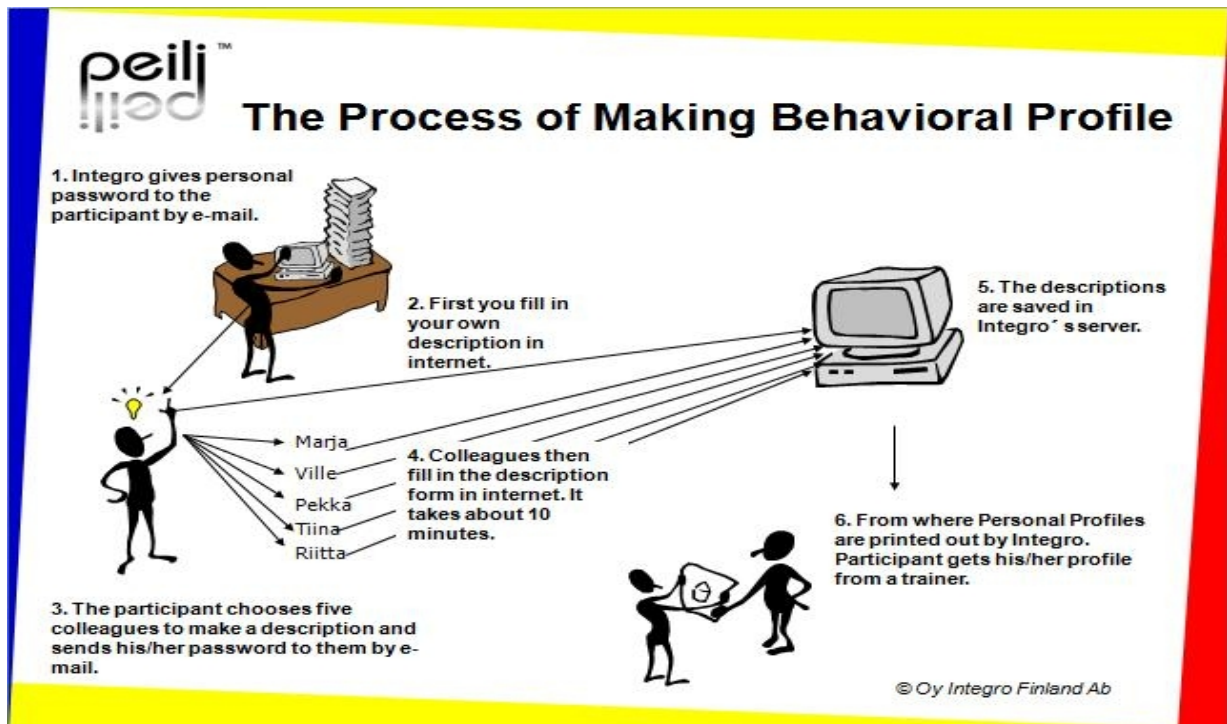
Figure 5-3 The Process of Making Behavioural Profile (Oy Integro Finland Ab, 2009)

The process of making Peili project leadership assessment (see Figure 5-4) is quite similar as the process of making behavioural profile. Start with the customer order, the case company create the user account for the customer, and send the instruction to the customer. The customer finish self-evaluation first, and then select suitable assessors to make the evaluation for him/her. All the answers will be saved in the case company's database, and the computer program will calculate the result for the customer. Finally, the report will be given to the customer by a Peili trainer during the one-to-one discussion. The only differences between the process of making leadership assessment and making behavioural profile are: firstly, for leadership assessment, the customer will together with his/her manager and the Peili trainer to define how the result report can be used other than personal development, for instance, organizational development, or reference of internal recruitment; secondly, the customer will receive more detailed instruction concerning

who can be selected as his/her assessor in this process, with the help from the Peili trainer and the customer's manager.
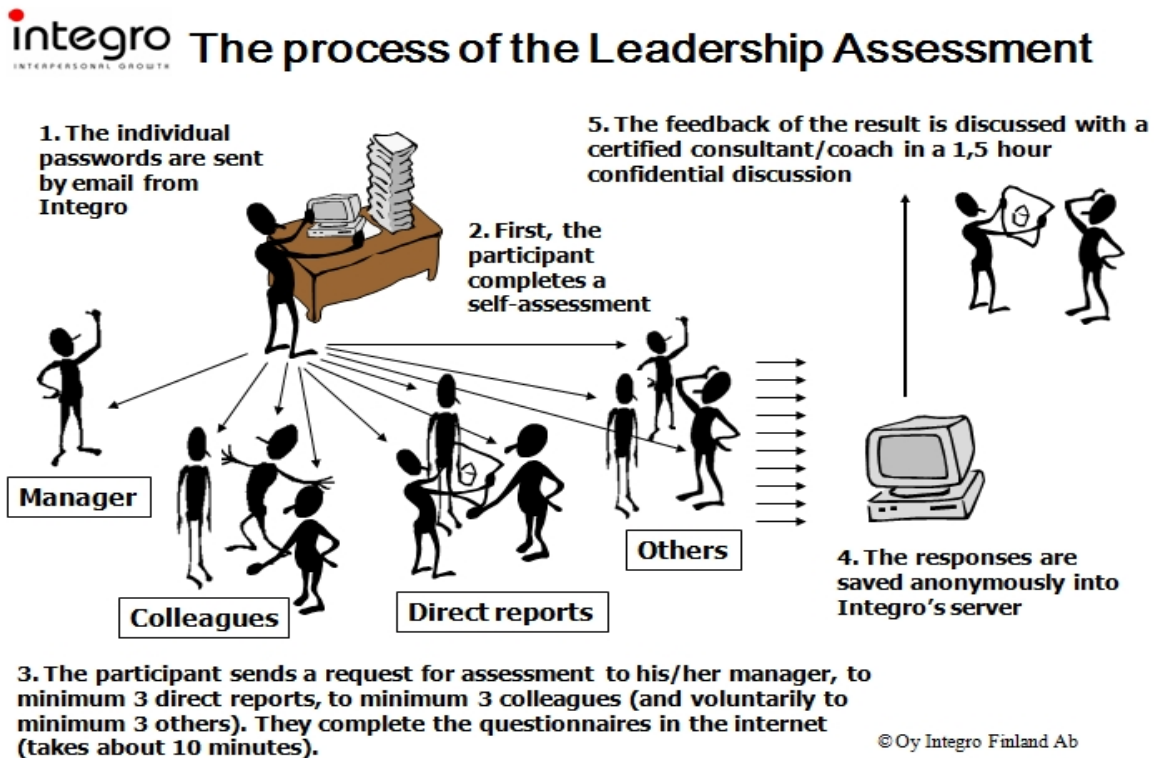
Figure 5-4 The Process of Making Leadership Assessment (Oy Integro Finland Ab, 2009)

The case company does not only serve the end-users of its products, it also provides services to the certified trainers. Before the training gets started, the certified trainer will work together with the case company to make all the participants of the training get his/her Peili assessment. The certified trainer will provide the contact information of the training participants, and the case company will take care of the process of making the assessments for the participants, including instruct the participants concerning the assessment process, answer questions from the participants about the assessment, remind the participants to finish the assessment on time, and report the progress to the certified trainer.

When all the participants finish the assessment, the case company will send the result report to the trainer by post or email, depending on the trainer's request. Besides every participant's report, the case company will provide a summary to the trainer about the status of the assessment results, which is useful information for the trainer to design the training. During the training, the case company will provide to the trainer with the latest training material, exercise, and promotion materials. If the trainer has any question, the senior trainer from the case company, who is in charge of the certification, is available for answering the questions the trainer has. The case company often organizes seminars or workshops for the certified trainers. During the seminar/workshop, the trainers together with the experts from the case company will concentrate on discussing a certain topic, in order to further the understanding of the topic.

The trainings to the end-users are mainly organized through certified trainers. However, in order to have close connection to the end-users of Peili products, the case company also offers direct trainings to the customer. The trainings are mainly concerning development of behavioural competencies and interaction skills, which are tailored on basis of clients' specific needs and situations. Themes of these trainings could be, for example, organizational changes, leadership skills, team building, conflict solving and negotiations, customer service and sales, well-being at work etc. In addition, the case company offers leadership consulting for individuals and managerial groups.

All in all, the business model of the case company can be summarized in table 5-1. The main characteristics are listed in the table, and the detailed description can be found in the sections above.

5.6 Summary of the case analysis

Following is a short summary of the case analysis presented in this chapter, as shown in table 5-1. The analysis is based on Rajala et al.'s business model framework (2001), which contains mainly four elements - product development, revenue logic, marketing and sales model (distribution model), and servicing and implementation model. The analysis is divided into these four

elements, act as different perspective to view the case company's business. Further more, there is the analysis of the relationship between these elements.

The first element is product development, which the case company started already at the early stage of its business. The development was mainly concerning the use of computer system, and Internet. The future development as well as the competitors' movement are still focusing on the E-commerce opportunity. One of main changes could be separate the product and the training service. In this case, order the product, complete the behavioural test, and pay to the case company can be all made through Internet. Another change, or trend in the business field is to use the power of online community, such as facebook, to advertise the product with the use of a trail version.

The second element is revenue model. The revenue resources for the case company contain mainly the sales of its products, and the sales of its certification service. If the case company could separate the product and the training (delivered by certified Peili trainers), the sales of its product would increase to a higher level. But relatively the case company could not control or manage the quality standard of its product, as the training is crucial in helping the user to understand their Peili result and learn to use the result properly.

Following is the marketing and sales model. The case company certifies freelance trainers to be able to use the case company's product in their training, and will pay the trainers for bringing Peili product orders. In this sense, the trainers are the marketing promoters for the case company, and the case company could save certain amount of marketing costs. However, this model has its negative effect, which is the case company losing the direct connection with the end-users of its products. The end-users very often are only loyal to the trainers, but not to the case company.

The last element is the servicing and implementation model. The case company takes care of the process of making Peili test, and assists the trainers in different ways they need. This servicing model could help the case company to keep its employment to a limited amount, in other words, saving the costs.

Finally, the analysis is concerning the relationship between the elements. It is obvious that the change of one element could change another, or all the other elements. One example would be separate the product with training, which effects both the product development model and the revenue model. Thus, one of the key point the case company should remember is that always consider the consequences of the changing any elements. More detailed discussion could be found in next session.

Table 5-1 Summary of the case company's business model

Elements of the business model	Main characteristics of the business model
Product development	1. The assessments of the case company are developed based on solid scientific research. 2. The case company has conducted studies to approve the validity and reliability of the assessments. 3. The case company has collected the feedback from customers concerning the effect of the assessments.
Revenue logic	1. The first revenue stream of the case company is the sales of the assessments products. 2. The second revenue stream is the certification of the trainers to use the assessment tools in their training.
Marketing and sales model	1. The certified trainers act as the marketing promoter. 2. Limited direct marketing is arranged by the case company. 3. The product demonstration organized every month is targeted to the potential trainers.

| Servicing and implementation model | 1. The main service the case company provides is taking care of the assessment process for the end-users. |
| | 2. The case company also provides assistance to the certified trainers. |

5.7 Relationship between the business model elements

As discussed above, there are mainly four elements in the case company's business model, which are product development, revenue logic, marketing and sales model (distribution model), and servicing and implementation model. Each element has been discussed in detail, however, the inter-relationship between these element has not been described. Only understand each element of the business model is not enough for capture the big picture of the business model. The relationship between each element is crucial for understand the business model as a whole.

The change of one element could directly or indirectly affect the other elements. For instance, in the 1970s and 1980s, the case company did not have the trainer certification service, instead the case company employed about ten trainers, who were familiar with the case company's products and relevant training. The case company took care of both the assessment process and the training. The main revenue was from the end-customers. The case company offered a product-service package to the customers. Till 1990s, the case company decided to implement its new strategy and new business model. It did not employ as many trainers as before, instead it developed the certification service, to establish a trainer-network, with those freelance trainers or the trainers working in training organizations.

The certification service did not only change the revenue stream, it also changed all other three elements. Firstly, for the revenue model, the certification service added the certification fee to the revenue. On the other hand, it also reduced the training income for the case company. However, it saved the salary of the employed trainers. Secondly, the case company could concentrate on developing the key products, and the certified trainers would focus on developing the training

courses. Thirdly, the case company reduced the direct marketing to the end-users, instead, the certified trainers somehow began to take care of marketing the case company's products as they would include the assessment in their trainings. Thus the case company also saved the cost of marketing. Finally, the case company's service business mainly included the assessment process and certification service, instead of assessment-training package in the past.

As shown in Figure 5-5, there are four key element of the case company's business model, which are product development, revenue logic, marketing and sales model (distribution model) and servicing and implementation model. Between these elements, they all have inter-relationship with each other, or affect the others in one way or another. The change of one element could affect all other three elements. In the following text, detailed analysis of the relationship between these elements will be discussed.
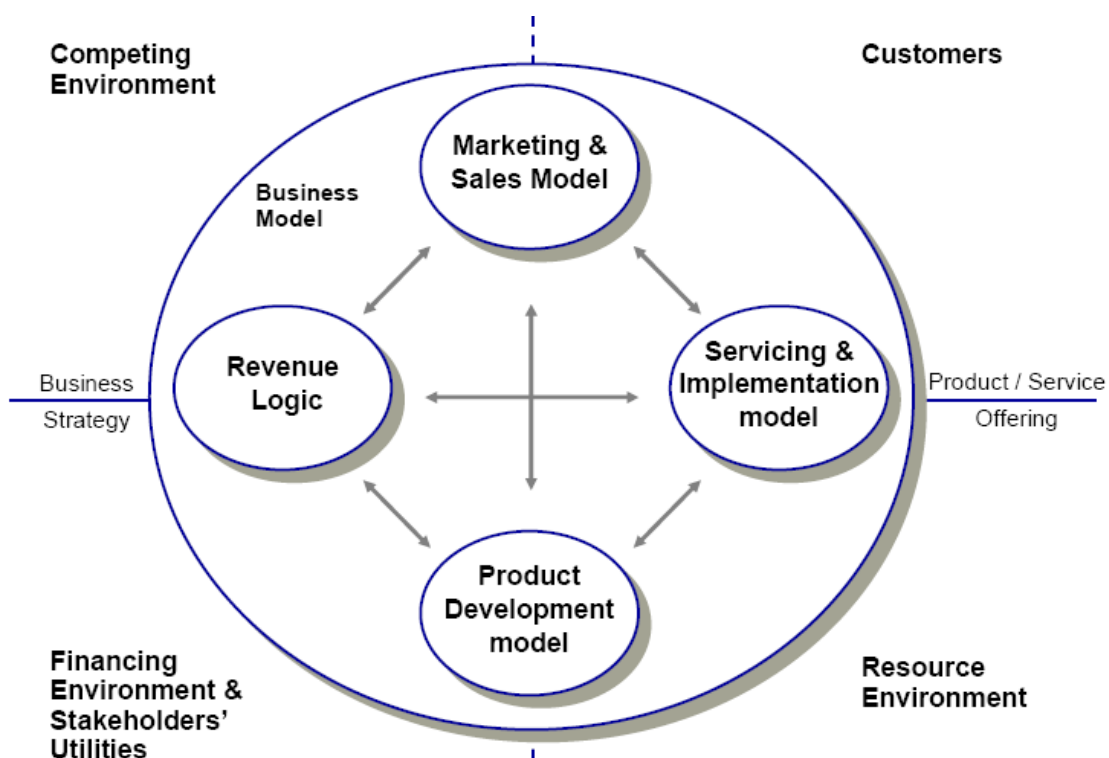

Figure 5-5 Elements of the business model (Rajala et al., 2001)

Firstly, the products of the case company have influenced the revenue streams, in other words, the products of the case company have decided the revenue stream. Sales of the assessment products is one of the key revenue resources, which is as nature as it is for other companies. The certification service can be viewed as certain kind of revenue innovation, which brings one more revenue resource. Certification service does not only add one more resource of revenue, it also affects the marketing activities of the case company. The certified trainers somehow became the promoter of the case company's product. Certification service added the resource of revenue, at the same time, it saved the cost of employing trainers in the case company, and also saved certain amount cost of marketing activities. The products of the case company has also affected the services the case company is offering to its customers, both the end-users of the assessment products and the certified trainers.

Secondly, as discussed before, the change of revenue model has changed all other three elements. Develop the certification service has enlarged the service range of the case company, reduced the employment cost (did not employ the trainers), saved certain amount marketing cost, kept enough resources focusing on product development.

Thirdly, the marketing strategy and marketing activities have affected by the certification service. With the certified trainers, the case company reduced the direct marketing to the end-users of the assessment products. On the other hand, the certified trainers became the promoter of the case company's assessment products, who are more professional and trustworthy than the sales staff of the case company. Anyhow, the case company still conducted certain marketing activities, and the marketing information include both the products and the certification program.

Finally, the service model of the case company is mainly decided by its products and the certification program. The case company took care the process of making the assessment for the end-customers. Another main service is the certification to the potential trainers, which requires the case company to prepare the certification material and design the certification course.

To sum up, there are four key elements of the case company's business model, including product development, revenue logic, marketing and sales model (distribution model), and servicing and implementation model. They are closely connected with each other. The change of one element could change all the other elements. To be able to understand the business model of the case company, it is needed to understand both the individual elements and the inter-relationship between the elements.

6. Research process and results

As mentioned above, one of the most important strategies for the case company is to expand its business from Finnish market to Chinese market, and among all the activities need to take to entry the new market, prove the validity of its product in China is on the first priority. The research were mainly divided into two part: questionnaire and focused group interview.

The objectives of the product validity test include find out the test results of the existing Peili™ behavioral profile (validity as appraised by test group), collect feedback about Peili™ -process, including the questionnaires (clarity and applicability into Chinese Environment), collect opinions of Chinese Professors of the suitability of Peili tool into Chinese market and recommendations for further development of the Peili™ tool.

The strategic importance of Peili Testing Project is to find out the suitability of the Peili product to Chinese custoemr and whether the product needs certain modification to suit the Chinese customers and Chinese business culture. In Peili Testing Project, the validity and reliability of Peili among Chinese customers have been tested. The result from Peili Testing Project will have the influence on the following steps of entering Chinese market.

6.1 The questionnaire research process

The following context will describe how the questionnaire research is implemented, the whole testing process starts from candidates definition to feedback collection. As the Peili behavioural

profile contains three reports, behavioural style, flexibility profile, and trust profile, the feedback is asked specifically for these three reports.

Firstly, short introduction of Peili, product benefits and obligation if attend the test are sent to the potential candidates. They can choose whether they will attend the test. This task was implemented in all the three cities Jinan, Xi'an and Dalian at the same time. If the potential candidates would like to attend test, the basic information (name, gender, e-mail, phone number, organization they belong to) are provided to the case company. All the information from the three cities will be management together (in different groups in the database). Secondly, the candidates receive the introduction to Peili tool, the benefits of Peili results, and instruction about how to make the Peili Behavioural Profile, and instructions concerning how to evaluate the process and the adjective pairs through the web survey tool. In order to receive the behavioural style result report, the candidate should give the feedback on Peili process and adjective pairs. After that, the automatic e-mail will be sent to Finland to notice that the corresponding candidate can get his/her behavioral profile result. Thirdly, the case company sends the second message to the candidates to ask the feedback concerning Peili behavioural result. Once one candidate give the feedback on Peili behavioural style, the e-mail will be sent to Finland to notice that the corresponding candidate can get his/her profile and trust profile and Message 3. Finally, the case company will send the flexibility profile and trust profile to the candidates, and also ask for feedback.

6.2   Opinions collected in the test

This following session mainly concludes the opinions from Chinese professors, candidates and others. The following part will specify them into different areas.

As shown in table 6-1, these two opinions were mainly reflected by the testing candidates. For the first one, in order to get one's behavioural profile, it is needed to have five people to make the evaluations for this person. When it comes to colleagues evaluating each other, in Chinese company culture, most of the employees will not feel comfortable about this. Thus it will make the Peili test participants hesitated to choose the people to evaluate them or try to pick their

friends in the company. Although it will not effect the result and the evaluation is strictly made anonymously, it is still important to emphases it, in order to make the test participants feel comfortable and more willingly to take the test. One more information could help is that it is good to inform the participants at the right beginning that the test only tries to find out their behavioural pattern, in this case the result is not judging and there is no good or better result.

The second feedback is a particular case for the testing project, as there are also the questionnaire emails sending to the testing candidates, which makes them feel there are too much messages are coming. This will not be happening in the normal test process. However, as there is only one communication channel between the testing candidates and the case company, it might be quite difficult to smooth the process only depending on one communication channel. And at the same time, the participants might feel quite disturbing to receive many reminders during the test process. Thus it is recommended to the case company that telephone calls might be another communication option, which in many cases is a more effective and friendly communication method.

Table 6-1 Opinions from testing candidates

Peili Process	1. Inviting 5 colleagues to attend the evaluation seems to be unfeasible in China. Candidates in China do not like other colleagues evaluate themselves and colleagues also may not evaluate candidates objectively.
	2. Candidates do not like receive profiles and messages one by one. During the test candidates received so many mails which make them tired.

In table 6-2, the feedback concerning the introduction email to the test participant most reflects that the participants want to have a simple, short, and easy to read instruction to complete the test. The changes can be made is to shorten the instruction, or add pictures to replace the text, which is more interesting and easier to read. If the participants allow and would like to, the case company could make phone calls to them to confirm the instruction and test itself are fully understood by

the participants, and if needed, more explanation can be given during the phone call. In this case, it would make the participants feel more comfortable and taken well cared in the testing process.

Table 6-2 Feedback on Peili introduction

Peili Introduction	1. Introduction of Peili is too long for Chinese candidates to follow. Chinese candidates do not like read the introduction carefully, they just skim it. (One proof is that many candidates sent all the information, not the specific parts to their colleagues)

Table 6-3 shows the feedback concerning the adjectives appeared in the Peili test questionnaire, as many of them are psychological words, without and context, it would be quite difficult to have a clear understanding towards those words. The confusion may make the participants lack of confidence in answering the questionnaire. Thus, it is recommended to the case company to provide certain explanations to the most confusion words in the questionnaire. Another issue is that in the questionnaire, there are only four scales for the participant to choose between two different adjectives. For instance, talkative, quite talkative, quite silent, silent, which does not include an option as "can not tell" or "medium". This makes the participants feel forced to choose the answer, and as a suggestion to the case company, this should be well explained to the participants, to reduce the pressure they have when answer the questionnaire.

Table 6-3 Feedback on the adjectives in the Peili questionnaire

Peili Adjectives	1. As for some adjectives, candidates can not clearly understand them; let alone giving the clear answer. As mentioned in the previous communication, we know one pair of adjectives are not completely opposite, it causes candidates and their colleagues have no idea on which one they should choose (People do not know how to compromise). 2. Whether the number of pairs of adjectives can be reduced? Further discussion should be needed. 3. The inner relationship of these adjectives should be explained during the workshop in order to make the further improvement. 4. Some adjectives can be understood in different ways, so can we use a

	sentence to express the exact meaning?
	5. Some adjectives are too overwhelming that Chinese colleagues are shame-making to evaluate others.

Concerning the profile report, it is also a particular case in the testing project (see table 6-4). In normal situation, the participants will get the report in paper, if wanted, the PDF format can also be provided to them. And also a particular case that in the testing project the candidates asked for more explanation on how to use the report in the future. This is a critical question that is answered in the Peili training, which in all the normal situation that training together with the testing are both provided to the participants.

Table 6-4 Feedback on Peili profile

Peili Profiles	1. The profiles are in PDF edition which can not be opened by candidates' computers. Many candidates did not install the PDF viewer, even some did not know how to open the profiles
	2. The profiles just describe candidates relatively accurately; however they lack the guidance for further improvement.

Adding background music or improving the outlook of the questionnaire could both help the participants to feel comfortable and relaxed about the test. Thus the suggestion will be made to the case company.

Besides those comments or feedback collected from the testing candidates in the project, there are also numerical feedbacks concerning Peili test, which reflects the opinion of the candidates more in detail. Appendix 1 shows the data concerning the result report, appendix 2 reflects the feedback on the Peili test questionnaire, and appendix 3 shows the feedback on the process of making Peili assessment. The questions to the candidates mostly concerned if they can understand the questionnaire or not, and if the reports they think are accurate to describe them. Thus in the statistic, the item represents each adjective pair in the questionnaire, and higher the mean, the better understanding from the candidates, on the other hand, the lower the standard

deviation, the more candidates feel the same way about the adjective pairs. In other words, the standard deviation of all the corresponding results on one item is expected to be small as it reflects the coherence of the feedback from candidates. The other tables would be quite easy to read overall.

The results of the statistic suggests that the candidates understand the Peili test quite well, and in general also think the Peili results are quite accurate which based on their understanding of themselves.

6.3   Opinions from the focused group

Following are the opinions collected from the research focused group, which include psychologist, professors in Human resources field and Project Management field. The opinions are summarized based on different topics.

Firstly, the introduction of Peili test seems so long that Chinese people would not read it carefully and then miss some important information. It is better to simplify it and emphasize some important information with bold or other color. Let the customers know what factors would affect Peili test result and test effectiveness. Secondly, the content of messages sent to candidates seems too much more so that candidates can not understand easily. It is better to divide each message into two parts. One parts is general idea, the other is the details. Candidates who want know more on the general idea can find details in the second part. Thirdly, it is necessary to modify/adjust some of the Peili test Adjectives translation, not translating word from word, by translate by the meaning of the English word to Chinese. Peili adjectives can be list both in English and Chinese so that they can be more understandable. Some hint (as situation explanations) can be added to be easier to understand the adjectives. Fourthly, it would be better that the report can explain the significance of the deviation between self evaluation and others evaluation. Fifthly, modify the scaling in Peili test (for the coordinate dimensions in the four-fold table, flexibility scaling), and the translation (considering the cultural differences) to improve the validity and reliability of Peili in China, could have more test for the modified Peili. And finally, it is better that not only in the

messages but also in the profiles we can notice candidates the further purpose and how to get further guidance and improvement, in order to let candidates understand the whole structure once they receive all the profiles.

6.4   Conclusion and suggestions from the testing project

From the analysis by SPSS statistic software and opinions from Chinese professors, candidates and others, it can be concluded that no basic change should be made on Peili structure, however there are still some problems which should be solved to fit for Chinese culture and environment. These problems focus on the following aspects: firstly how to select 5 suitable colleagues to evaluate candidates, secondly how to shorten Peili test introduction to be easier to understand and follow, thirdly how to explain the adjectives that are difficult to understand in a clear way.

Following are the suggestions made to the case company concerning its assessment product. Firstly, find the common understanding for the debatable opinions during seminars or discussions. Secondly, organize workshop between Chinese and Finnish Peili trainers, as well as the exporters from the case company. Other more detailed suggestions have already been mentioned after each opinion table in previous session.

7.   Suggestions to the case company

As discussed before, the business model of the case company is mainly consisted of four elements, which are product development, revenue logic, marketing and sales model (distribution model), and servicing and implementation model. These elements are dependent with each other, and the business model included all these elements as a whole. Any change or improvement of one element could affect all the other three. Nowadays when every company is looking for innovation, an innovative business model or any creative changes to the business model can improve the business of the company.

The case company could focus on the four elements of its business model to create the innovation, and the idea of innovation is often comes from the environment of the case company. Each elements from Rajala's framework has been discussed in detail, however, the environment of the business model has been left out. It is not enough to only understand each of the elements, understand the environment of the business model is also very important. Very often the idea of innovation comes from the environment the company operates in, such as customer requirement, new technology, competitors' innovation, etc.

One of the main targets of the case company is to expand its market to China, but the current business model does not seem to be perfectly suitable for the Chinese market. For instance, use the certified trainers to be the market promoter would not be effective enough for Chinese market, because of the big market size, and also freelance trainers are not as popular in China as in Finland. Instead, cooperate with local training organizations becomes more realistic and effective for market entry. The price level is also a challenge for the case company to determine. Comparing with competitors, listening to the suggestions from partners in China, making market research, the case company summarizes all the available information to decide the suitable price level of its products and services.

In the past 35 years, the case company has made different changes to its business model to suit the environment and competition. The first innovative development of the case company was programming the assessment products to be Internet based assessments. In the 1980s, the assessment products of the case company were in the paper form, which were fulfilled by the assessment participants. The case company collected the answers from the participants and input the data to a computer and calculated the results for the participants. Till the 1990s when the Internet has gained its popularity, the case company developed the assessment to be Internet based. With this development, it made the assessment more convenient for the end-users, and it also brought the opportunity for the case company to enlarge its customer basis.

The second significant innovative change of the case company's business model was develop the certification service. The case company certified the trainers to be qualified to use the assessment tools in the training, and did not employ as many trainers as before. In this case, it saved the

employee salaries and developed a new source of revenue – the certification fee. Also with the certified trainers, the case company did not need to have too much direct marketing, instead, the certified trainers would in a certain way became the marketing promoters for the case company, who seemed to be more professional and persuasive than a sales person to market the assessment tools. The case company promised certain amount of commission fee to the certified trainers, which was one of the motivation for the trainers to market the assessment tools to its their customers.

When it comes to the technology century, the case company is open to all the opportunities of the new technology to change its business model, and to be more competitive. One of the new development the case company could adopt is the online purchase, for its assessment products. First of all, the case company needs to put the assessment and the material of how to use the assessment together as a package. And then create the online purchase for the customers to buy the assessment tools directly. However, for this case, more direct marketing is needed.

Besides more direct marketing activities, the case company should also have more direct contact with the end-users of its products. As nowadays, the end-users only communicate to the trainers, and very often the feedback information from the end-users will not pass the trainers to come to the case company. Thus the case company is lack of the connection with the end-users of its product. The feedback from the end-users are critical for the success of the case company's product.

As it has been discussed above, the case company's current business model can not be directly applied to its new market, as the main features of the new market are very different from its current market. Thus, modifications to the business model elements have to be made. One of the most important modification is that certifying the trainers to use the case company's assessment products and view the certified trainers as the marketing promoters. Working together with local training organizations is recommended in this case. As the local training company has usually developed the customer basis and marketing channels, and they have certain amount experienced trainers working for them. Those resources are all very important for the case company to have.

Cooperate with local companies could provide the access to these important resources for the case company. The option of establish the local presence for the case company is not very practical and economical in this early stage of market entry.

One more suggestion to the case company is that it can sell the assessment CDs through the local training organizations to the customers. This has been done by one of the competitors of the case company – DISC assessment. In this case, the partner organization could promote the assessment to its customers, and the customers could get the CDs for making the assessment. It would save the time of communication between the potential customer, the partner organization, and the case company. The case company could also advise the partner organizations to integrate the assessments to their training programs, which is easier to promote the assessment products at the beginning.

In order to conduct more promotion activities for the case company's assessment products, the case company could try to develop the trial version for its assessment products – the simple version of the assessments. The trial assessment could raise the interests of potential buyers. As nowadays the online community becomes more and more popular, the case company could also take the opportunity to create the interests of its potential customers through the online community, for instance, the facebook.

To sum up, all the important suggestions to the case company are summarized in table 7-1.

Table 7-1 Summary of the suggestions to the case company

Summary	Suggestions to the case company

	1. When expands to Chinese market, cooperate with local training companies, instead of freelance trainers.
	2. Set a suitable and reasonable price for the products and service.
	3. Produce electronic product package
	4. Separate the products with the service, and sell the products in CDs through Internet.
	5. Have more direct marketing activities, such as newsletter to target group, advertise on certain newspaper or magazine, etc.
	6. Develop trail version of its products, put it on the popular website to attract more customers
	7. Have more direct connect with the end-users of the case company's product

8. Application of the business model framework

8.1 Applying the framework to the case company

As discussed before, this thesis has used Rajala et al.'s Software Business Model framework (2001), which includes the elements such as product development, revenue logic, marketing and sales model (distribution model), and servicing and implementation model. The reasons to choose Rajala's business model to be the analysis framework in this study is that there is no defined business model for the companies or businesses like the case company. Secondly, the case company's business area can belongs to knowledge intensive business service. At the same time, software company which also offers training and consulting to its clients is also belonging to knowledge intensive business service. Categorized into the same service sector, it makes the case company shares many characteristics of software company, for instance, external professional knowledge is offered to the clients, the customers are highly involved in the service process, product is always provided by the company together with training or consulting, etc. Those similarities are the basic ground for applying the software business model to analyze the case company.

For this study, the Rajala et al's Software Business Model framework (2001) offers different functions to the analysis of the case company. Firstly, the business model framework acted as a map for the case company to understand the big picture of its business. Although the framework is on the general level, it is detailed enough for people to get the big picture – the basic understanding. Secondly, the framework acted as the criteria for the case company to make simple comparison with its main competitors in the most important area. The framework is general enough to be applied to all the similar companies, thus it is a good basis for competitor comparison. Thirdly, the business model framework could act as a design frame, for the case company to establish its business model in a new environment. As the business model framework does not only included the basic elements of a business model, it also described the environment that needs to be considered in building a business model, for instance, the competing environment, customers, and resource environment etc. Finally, the business model framework is the analysis tool for the case company to view its business model, whether if there are certain elements need further development etc.

The main purpose of Rajala et al. (2001) to develop the software business model framework is to develop a analysis tool which is abstractive enough to be used in analyzing business models. The software business model framework intended to help the future research in the field and business participants to understand the notion of business model in the software business. The software business model framework presented a balanced model of the essential parts of a software product and service proposition and it helped the business participants to understand the software business in the extensive cooperation network economy, which in the sense, helped the business actors to improve the ability to cooperate within their business network.

In this study, with Rajala et al. business model framework (2001), the main characteristics of the case company's business model are found as follow. Firstly, for product development model, the case company developed its products based on solid scientific research, and has conducted studies to approve the validity and reliability of the assessments. Further more, the case company has collected the feedback from customers concerning the effect of its assessment products. Secondly, for revenue model of the case company, it has mainly two sources of revenue, which

are the sales of the assessment products, and the certification of trainers. Thirdly, for the sales and marketing model, the certified trainers act as the marketing promoter, and the case company arranges limited direct marketing. And the product demonstration organized every month is targeted to the potential trainers. Finally, for the servicing and implementation model, the main service the case company provides is taking care of the assessment process for the end-users, and also assists the certified trainers for their trainings.

One of the application for the case company is to understand its business environment and the relationship between different factors. Rajala et al. based their research on five different cases, the business model framework derived from business strategy and bounded with external elements such as competing environment and customers. The business model framework is generalized into four elements – product development, revenue logic, marketing and sales model (distribution model), and servicing and implementation model, and displayed in the combination form. Finally, the business model framework acted as a tool to help the business to develop and improve its business model or solve conflicts. The business model framework is very practical to be used in analysis, providing the empirically grounded model of software businesses, and delimiting the practical constraints to focus the analysis on the feasible level of abstraction. The framework acted as the basis for further development of the theoretical study and the analysis of any software business.

Another example of applying the software business model framework was done by Rajala et al. (2003). To analyze the case, Rajala et al. used the software business model framework, which was based on literature and verified with empirical research in companies, to evaluate the business model of a software product company. The target of the research is to study the options available for the software company. The analysis process started with defining the business model of the software company, and following with the evaluation of the options available to the software company related to product development, revenue logic, marketing and sales model (distribution model), and servicing and implementation model, finally discuss the growth and product strategies of the software company. To be more specific, the study begins with a preliminary understanding of the software company's business model evolvement, and then

evaluates the environmental factors around the business model, such as competing environment, customer, and the resource environment etc. Finally, based on the analysis discuss the possible options for the software company.

Based on these two examples discussed above, the application of business model framework generally can be generalized into following functions: definition, components, taxonomies, conceptual models, design methods and tools, adoption factors, evaluation models, and change methodologies. In the definition phase, the study focuses on defining the purpose, the scope, and the primary elements of a business model, as well as the relationship with other business concepts, such as strategy and processes. In the components part, the study of business model focuses on analyzing the fundamental construction of the business model, especially specifying the business model components. The analysis of business model components indicates the maturation of the business model study. Following with taxonomy phase, the study of business model started to categorize the business models into a number of typologies based on various criteria. The purpose is to produce a list of general business model types which can be used to analyze the unique features of real business models. The next phase is conceptual models, which aims at organizing information about a business model around a number of different perspectives, for instance, visualize the main elements f a business model, explain the inter-relationships among the elements, etc. (Pateli and Giaglis, 2003)

Designing methods and tools is the next phase of business model studies, which concentrates on the development and use of methods, languages, standards, and software, typically refers to business modeling tools, to automate and leverage the process of designing a business model. Following is the adoption factors, which involves research on factors that affect the organizational adoption of business model. After is the evaluation model phase, which is concerned with identifying criteria for either assessing the feasibility, viability, and profitability of new business models or evaluating them against alternatives or best practice cases. The last phase of business model study is change methodologies, which includes study efforts focuses on formulating guidelines, describing steps, and specifying actions to be taken for either changing

existing business model, or choosing a new one to adapt to a business or technology innovation. (Pateli and Giaglis, 2003)

To sum up, most of the researchers and practitioners from the business field usually take their own perspective on investigating and contributing to a specific subject of business model, sometimes take into consideration of existing research in the related fields. The information from the research study is important for communicating the right business model to the right people.

8.2   Modification of the framework in general

The business model framework used in this study is a software business model developed by Rajala et al. (2001), which is the most relevant framework that can be applied to the case company, and in general to the knowledge-intensive business. However, as Rajala et al.'s business model is developed based on software businesses, the model can not be the perfect match for the case company, as well as the knowledge-intensive business.

Rajala et al.'s business model framework (2001) is developed based on software business, which shares many similarities with the case company and the knowledge-intensive businesses, thus the software business model also describes most of the important features of the case company's business model as well as KIBS (knowledge-intensive business services)'s business model. According to Beltencourt et al. (2002), for KIBS companies, the service providing process is actually a co-production process together with the customer. The quality of the service depends heavily on the customer's competences. Thus, the business model framework can be modified a bit according to the feature mentioned above (importance of the customer involvement). The modified business model framework is shown in Figure 8 -1.
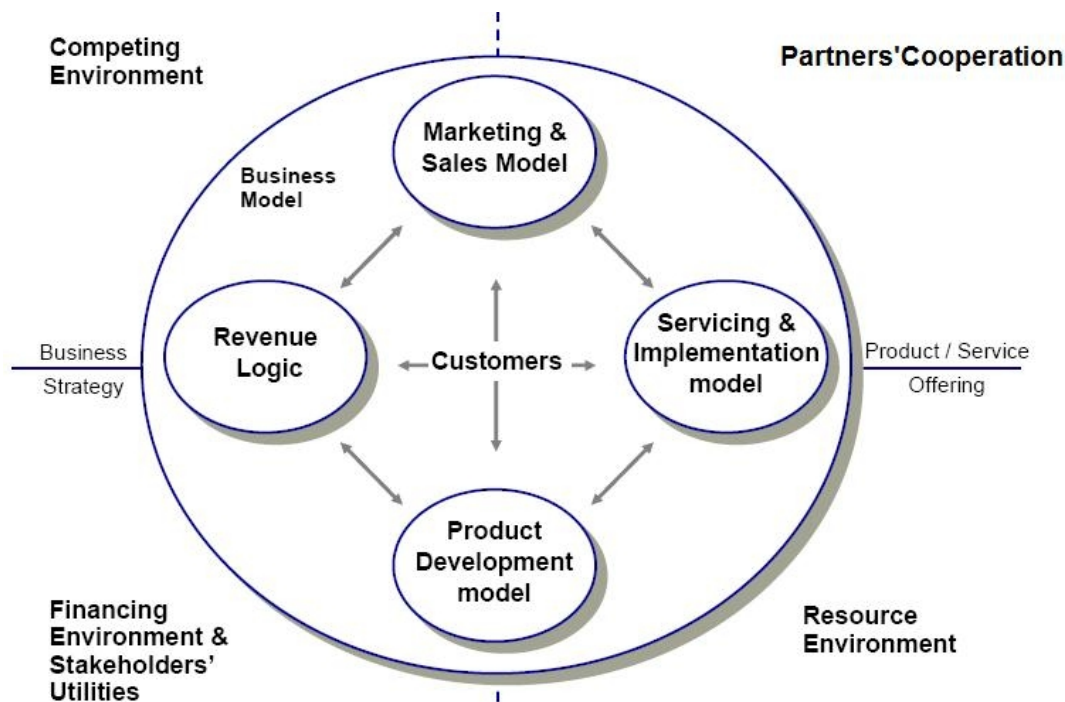
Figure 8-1 Modified business model framework (adopted from Rajala et al., 2001)

One of the main features of KIBS is the high level of customer involvement in the service process. According to Beltencourt et al. (2002), the purpose of KIBS is to develop a customized service or product solution to the clients' need (e.g. information technology, consulting, technical engineering, software design), which makes the service delivery activities of KIBS complex, unstructured, and highly customized. Further, the clients' role in KIBS is emergent, multi-faceted, and highly collaborative, because the clients possess much of the knowledge and competences that a KIBS firm needs to deliver a successful service solution. And there is a trend in KIBS that the change of relationship with the clients becomes more and more obvious. The clients are more closely collaborate with KIBS firms, and the KIBS firms become more proactive when severing their clients. These reasons mentioned above are the main motivation of adding "customer" to the centre of the business model framework.

Adding "Partner" into the framework is because of the other trend of business development in KIBS, which is the tendency for larger firms to emerge and become dominant – the trend of concentration. As the KIBS companies become more specialized in one or two fields, in order to

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serve the customer needs, it often requires the cooperation between different service providers, to provide a service package to the customer. Internationalization is another trend of KIBS firms. And to establish partnership between similar firms in other countries is one way to achieve internationalization, which is also the case in this study.

As mentioned before, Rajala et al.'s business model framework (2001) fits the case company's situation quite well, and also suits for the KIBS, only a few modifications have been made to the framework to be more suitable for KIBS companies. Firstly, the customer has been put in the center of the framework, as it is one of the most important factors effect the success of the service provider. The cooperation between the KIBS company and its customer, and the customer's own competence could affect the implementation of the services provided by KIBS company, and also the quality of the service. Secondly, the partners have been added to the surrounding of the framework. As quite many KIBS companies are small-medium sized companies, the cooperation and collaboration between partners companies are becoming more and more important for KIBS companies. The cooperation could be concerning the share of resource, e.g. distribution channel, or even customer contact. This is also the situation for the case company.

The purpose of adding customer into the centre of the framework is to emphasize the importance of customer for the KIBS companies to succeed. The modified framework can be described as follow. Firstly, the customer is the source of revenue for the KIBS company, who purchase the knowledge and skills from the KIBS company, in the form of service. Secondly, the marketing and sales of KIBS company perform the communication function, to try to send the messages to the customer concerning the services they provide. Thirdly, it is highly recommended to the KIBS company to develop its products closely with the customer involved, in which case it reduces the risk of KIBS to develop some products no customer wants. Finally, the servicing and implementation of service of KIBS company are more concerned with the interaction with the customer, without the customer support, the implementation of the KIBS company's service will not achieve its best performance. And the purpose of adding partner to the picture is due to the concentration and internationalization trend in the KIBS field, which requires the cooperation between different service providers to serve the customer.

The result of the modification would be similar to its original purpose, which can be summarized as helping the KIBS company to change the traditional way of doing business into a customer oriented way of doing business.

9.   Conclusion

9.1   Brief summary of this study

This study is initiated with the interests of the case company Oy Integro Finland Ab, which is a knowledge-intensive based service company. The study concentrates on the description of the evolvement of the business model of the case company and its future development opportunities.

The case company plays the central role in this study. The evolvement of its business model and the future development opportunities of its business model are the main focus areas of this study. However, the study is not limited to the case company only, the targets are also to provide general application to knowledge-based Small and Medium Enterprises (SMEs) to develop their business models, and to provide guidelines on how to develop business model.

The case company faces the same situation – expanding its market territory to get more profits. Entering into the new market brings the basic **research question** of this study: whether the current business model of the case company is applicable to its new market operation, and what kind of modification is needed to adopt the current business model to the new market, furthermore, how to develop business model when expanding business to new market.

The **objectives** of this study include: describe the current business model of the case company and its evolvement, evaluate the case company's current business model, whether it is applicable to the new market, identify the relationship between the key components of the case company's business model, provide suggestions to the case company concerning development of its business model in the new market, and development of current business model, provide general

application to knowledge-based Small and Medium Enterprises (SMEs) to develop their business models, and provide guidelines on how to develop business model.

This study is based on the review of previous academic discussion on the topic of business model development and the empirical study on the case company. In the literature study, the focus will be on the articles of academic journals, mainly in the field of business models and knowledge-based services. The data collection for the empirical research carried out in this study was observation, interviews and group discussions at the case company.

Although the study is conducted at the basis of the case company, it does not exclude the other companies operating in the knowledge-intensive business services sector. The study of the case company's business model development also enables the other companies in the same business sector to generalize the findings to a greater extend.

The software business model developed by Rajala et al. (2001) is the basic framework in this study to analyze the business model of the case company. The elements include product development, revenue logic, marketing and sales model (distribution model), and servicing and implementation model. The primary reason to choose Rajala's business model (2001) to be the analysis framework is that there is no defined business model for the companies or businesses like the case company. Secondly, the core business of the case company is to offer the product and related training to its customers, and the service package is heavily relying on the case company's professional knowledge. Thus the case company can be viewed as knowledge intensive business service company. At the same time, software company which also offers training and consulting to its clients is also belonging to knowledge intensive business service. Categorized into the same service sector, it makes the case company shares many characteristics of software company, for instance, external professional knowledge is offered to the clients, the customers are highly involved in the service process, product is always provided by the company together with training or consulting, etc. Those similarities are the basic ground for applying the software business model to analyze the case company.

9.2   Application of the framework and research results

As discussed before, the application of business model framework generally can be generalized into following functions: definition, components, taxonomies, conceptual models, design methods and tools, adoption factors, evaluation models, and change methodologies. In the definition phase, the study focuses on defining the purpose, the scope, and the primary elements of a business model, as well as the relationship with other business concepts, such as strategy and processes. In the components part, the study of business model focuses on analyzing the fundamental construction of the business model, especially specifying the business model components. The analysis of business model components indicates the maturation of the business model study. Following with taxonomy phase, the study of business model started to categorize the business models into a number of typologies based on various criteria. The purpose is to produce a list of general business model types which can be used to analyze the unique features of real business models. The next phase is conceptual models, which aims at organizing information about a business model around a number of different perspectives, for instance, visualize the main elements f a business model, explain the inter-relationships among the elements, etc. (Pateli and Giaglis, 2003)

Designing methods and tools is the next phase of business model studies, which concentrates on the development and use of methods, languages, standards, and software, typically refers to business modeling tools, to automate and leverage the process of designing a business model. Following is the adoption factors, which involves research on factors that affect the organizational adoption of business model. After is the evaluation model phase, which is concerned with identifying criteria for either assessing the feasibility, viability, and profitability of new business models or evaluating them against alternatives or best practice cases. The last phase of business model study is change methodologies, which includes study efforts focuses on formulating guidelines, describing steps, and specifying actions to be taken for either changing existing business model, or choosing a new one to adapt to a business or technology innovation. (Pateli and Giaglis, 2003)

The case company in this study has used several application of business model framework in the business analysis, including definition, components, conceptual models, design methods and tools, and evaluation models. Firstly, this research reviewed the concept of business model, including its definition, the importance of business model, and the relation to business strategy and business process. The purpose of defining business model is to give the management as well as the staff the idea about what is business model, and how it can be used in the management process. Secondly, with the help of Rajala et al.'s business model framework, the study defined the current business model of the case company, as well as the components of the business model. Thirdly, it is the conceptual process which studied the inter-relationship among the case company's business model components. Fourthly, with the these basic study, the research gives the advices on designing the business model for the case company in its new market. Finally, the business model framework used in this study provided the basic criteria for comparing the case company's business model with its competitors, or comparing current business model with its planned new business model for its new market.

This study applied the Rajala et al.'s business model framework (2001) to analyze the situation of the case company, mainly focused on the following four elements, which are product development, revenue logic, marketing and sales model (distribution model), and servicing and implementation model. These elements are dependent with each other, and the business model included all these elements as a whole. Any change or improvement of one element could affect all the other three. Nowadays when every company is looking for innovation, an innovative business model or any creative changes to the business model can improve the business of the company. Thus, the recommendation provided to the case company is mainly towards these four elements, which is explained in detail in session 6. In the following discussion, the main focus will be on the limitation of this study and possible future research areas.

9.3 Limitation of this study

The main and primary limitation of this study is applying a business model framework which is not exactly designed for the case company, or even for the business area of the case company.

Although software business shares quite much similarities with the case company business area, as well as the knowledge-intensive business sector, the case company or the knowledge-intensive business sector still has its specific features which can not be covered with the software business model framework, for instance, the customer plays very important role in the business of the case company and for the companies in knowledge-intensive business sector. The software business model framework has not emphasized too much on the customer perspective.

This limitation has also brought us to the possible future research area, which is design and form a business model framework especially for the knowledge-intensive business sector. The main reason this future research is worth of doing is that the knowledge-intensive business sector is one of the increasing sector plays significant role in the economy. In the business model of knowledge-intensive business sector, the customer could have more attention, and the knowledge transfer is also one of the special feature of this business sector. And for the case company, it can bring its customers and partners to be more close to its business model development process.

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Appendix 1 Feedback on Peili behavioural profile report

Measure for the different answers

In order to use SPSS to get the statistic result, we define different answers as the following numbers:

Very Understandable/ Very suitable/ Very easy/ Much true: 4

Understandable/ Suitable / Easy /True: 3

Difficult to Understand/ Not suitable / Difficult / A little bit reliable: 2

Very Difficult to Understand/ Very not suitable / Very difficult /Unreliable: 1

Statistics for all quality work carried out

Feedback on Peili behavioral profile report

Descriptive Statistics

	N	Minimum[1]	Maximum[2]	Mean[3]	Std. Deviation[4]
VAR00001[5]	75	2.00	4.00	3.0933	.61892
VAR00002	75	2.00	4.00	3.2400	.54127
Valid N[6] (list wise)	75				

Feedback on the question " Is the report understandable?" （VAR00001）

	Very understandable	Understandable	Difficult to understand	Very difficult to understand
Amount	18	46	11	0
Percentage	24%	61%	15%	0

Feedback on the question " Is the report reliable?" （VAR00002）

	Much true	True	A little bit reliable	Unreliable
Amount	22	49	4	0
Percentage	29%	65%	5.3%	0

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[1] The minimum result of one item in the valid questionnaires
[2] The maximum result of one item in the valid questionnaires
[3] The average of the all the corresponding results on one item in the valid questionnaires
[4] The standard deviation of all the corresponding results on one item in the valid questionnaires. It is expected to be small as it reflects the coherence of the feedback from candidates.
[5] The codes VAR00001-VAR00008 represent questions in the questionnaire; please find the corresponding questions in the following content.
[6] Valid N means the amount of valid questionnaires

Feedback on Peili trust report
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00003	56	2.00	4.00	2.9643	.50324
VAR00004	56	1.00	4.00	3.1429	.58554
Valid N (list wise)	56				

Feedback on the question " Is the report understandable?" （VAR00003）

	Very understandable	Understandable	Difficult to understand	Very difficult to understand
Amount	6	42	8	0
Percentage	10.7%	75%	14.3%	0

Feedback on the question " Is the report reliable?" （VAR00004）

	Much true	True	A little bit reliable	Unreliable
Amount	13	39	3	1
Percentage	23.2%	69.6%	5.4%	1.8%

Feedback on Peili flexibility report
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00005	56	2.00	4.00	3.1250	.54146
VAR00006	56	2.00	4.00	3.1607	.53178
Valid N (list wise)	56				

Feedback on the question " Is the report understandable?" （VAR00005）

	Very understandable	Understandable	Difficult to understand	Very difficult to understand
Amount	12	39	5	0
Percentage	21.4%	69.6%	9%	0

Feedback on the question " Is the report reliable?" （VAR00006）

	Much true	True	A little bit reliable	Unreliable

Amount	13	39	4	0
Percentage	23.2%	69.6%	7.1%	0

Appendix 2 Feedback on Peili questionnaire

Measure for the different answers

In order to use SPSS to get the statistic result, we define different answers as the following numbers:

Very Understandable/ Very suitable/ Very easy/ Much true: 4

Understandable/ Suitable / Easy /True: 3

Difficult to Understand/ Not suitable / Difficult / A little bit reliable: 2

Very Difficult to Understand/ Very not suitable / Very difficult /Unreliable: 1

Statistics for all quality work carried out

Feedback on Peili adjectives

Descriptive Statistics on Feedback about understandability of the 64 pairs of adjectives

Cronbach's α=0.9656 KMO Measure of Sampling Adequacy=0.946

Note:

1. The index of Cronbach's α and KMO Measure of Sampling Adequacy represented the level of reliability and validity respectively. Usually the index of Cronbach's α is more than 0.7 and the KMO is more than 0.5 can be acceptable.

Statistics:

ITEM No.	N	Minimum	Maximum	Mean	Std. Deviation
ITEM37	319	2.00	4.00	3.7524	.46050
ITEM15	319	1.00	4.00	3.7429	.50445
ITEM32	319	2.00	4.00	3.7241	.47492
ITEM59	319	2.00	4.00	3.7210	.47639
ITEM12	319	2.00	4.00	3.7147	.48577
ITEM5	319	2.00	4.00	3.7147	.51713
ITEM7	319	2.00	4.00	3.6834	.53501
ITEM9	319	2.00	4.00	3.6803	.49964
ITEM8	319	1.00	4.00	3.6771	.51317
ITEM1	319	1.00	4.00	3.6771	.51926

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ITEM24	319	1.00	4.00	3.6708	.52136
ITEM30	319	2.00	4.00	3.6646	.49877
ITEM16	319	2.00	4.00	3.6520	.55052
ITEM31	319	1.00	4.00	3.6144	.58162
ITEM35	319	2.00	4.00	3.6082	.54374
ITEM28	319	2.00	4.00	3.5925	.56363
ITEM43	319	2.00	4.00	3.5862	.57017
ITEM41	319	1.00	4.00	3.5862	.57017
ITEM62	319	2.00	4.00	3.5705	.54991
ITEM42	319	1.00	4.00	3.5705	.59390
ITEM64	319	1.00	4.00	3.5674	.58358
ITEM36	319	1.00	4.00	3.5549	.59025
ITEM34	319	2.00	4.00	3.5423	.62741
ITEM18	319	1.00	4.00	3.5423	.61730
ITEM20	319	1.00	4.00	3.5235	.63833
ITEM55	319	1.00	4.00	3.5204	.66261
ITEM4	319	1.00	4.00	3.5141	.64838
ITEM46	319	2.00	4.00	3.5141	.56548
ITEM51	319	2.00	4.00	3.4828	.59783
ITEM60	319	1.00	4.00	3.4734	.62325
ITEM17	319	1.00	4.00	3.4483	.62670
ITEM3	319	1.00	4.00	3.4451	.63640
ITEM19	319	2.00	4.00	3.4451	.59025
ITEM40	319	1.00	4.00	3.4263	.67297
ITEM57	319	1.00	4.00	3.4201	.70424
ITEM25	319	1.00	4.00	3.4075	.64677
ITEM6	319	1.00	4.00	3.4075	.69821
ITEM48	319	1.00	4.00	3.4044	.68871
ITEM56	319	1.00	4.00	3.3824	.68529
ITEM29	319	1.00	4.00	3.3762	.68419
ITEM11	319	1.00	4.00	3.3636	.65353
ITEM49	319	1.00	4.00	3.3480	.65487
ITEM33	319	1.00	4.00	3.3292	.76157
ITEM61	319	1.00	4.00	3.3197	.70796
ITEM52	319	1.00	4.00	3.2915	.75629
ITEM13	319	2.00	4.00	3.2853	.65646
ITEM53	319	1.00	4.00	3.2665	.74469
ITEM54	319	1.00	4.00	3.2571	.72015
ITEM22	319	1.00	4.00	3.2257	.77246
ITEM14	319	1.00	4.00	3.1787	.69774
ITEM21	319	1.00	4.00	3.1787	.74144
ITEM23	319	1.00	4.00	3.1505	.76639
ITEM58	319	1.00	4.00	3.1442	.80753
ITEM38	319	1.00	4.00	3.1411	.75372
ITEM47	319	1.00	4.00	3.0940	.71193

ITEM No.	N	Minimum	Maximum	Mean	Std. Deviation
ITEM39	319	1.00	4.00	3.0846	.82933
ITEM44	319	1.00	4.00	2.9592	.84390
ITEM50	319	1.00	4.00	2.8746	.83362
ITEM2	319	1.00	4.00	2.8621	.75638
ITEM27	319	1.00	4.00	2.8589	.84051
ITEM63	319	1.00	4.00	2.8182	.85314
ITEM26	319	1.00	4.00	2.7994	.83017
ITEM45	319	1.00	4.00	2.7147	.85972
ITEM10	319	1.00	4.00	2.6113	.85745
Valid N (list wise)	319				

Descriptive Statistics on Feedback about applicability of these adjectives

Cronbach's α=0.9420 KMO Measure of Sampling Adequacy=0.879

Statistics:

ITEM No.	N	Minimum	Maximum	Mean	Std. Deviation
ITEM15	310	1.00	4.00	3.2839	.66590
ITEM45	309	1.00	4.00	3.2427	.73590
ITEM47	309	1.00	4.00	3.2395	.68915
ITEM37	309	1.00	4.00	3.2201	.71857
ITEM60	309	1.00	4.00	3.2201	.71404
ITEM31	309	1.00	4.00	3.2136	.74272
ITEM43	309	1.00	4.00	3.2136	.74708
ITEM12	310	1.00	4.00	3.2129	.72841
ITEM09	310	1.00	4.00	3.2097	.74036
ITEM63	309	1.00	4.00	3.2071	.73578
ITEM59	309	1.00	4.00	3.2071	.66631
ITEM24	309	1.00	4.00	3.2071	.74890
ITEM11	310	1.00	4.00	3.2065	.68923
ITEM14	310	1.00	4.00	3.2032	.72451
ITEM21	310	1.00	4.00	3.2032	.74216
ITEM07	310	1.00	4.00	3.2000	.71868
ITEM41	309	1.00	4.00	3.1974	.71840
ITEM29	309	1.00	4.00	3.1974	.72290
ITEM01	310	1.00	4.00	3.1968	.74824
ITEM16	310	1.00	4.00	3.1968	.72629
ITEM13	310	1.00	4.00	3.1968	.72182
ITEM62	309	1.00	4.00	3.1942	.77365
ITEM57	309	1.00	4.00	3.1942	.71702
ITEM56	309	1.00	4.00	3.1942	.73048
ITEM58	309	1.00	4.00	3.1909	.71108
ITEM40	309	1.00	4.00	3.1877	.72773
ITEM03	310	1.00	4.00	3.1871	.73987

ITEM35	309	1.00	4.00	3.1845	.73962
ITEM25	309	1.00	4.00	3.1845	.73962
ITEM10	310	1.00	4.00	3.1839	.73849
ITEM30	309	1.00	4.00	3.1812	.71589
ITEM05	310	1.00	4.00	3.1806	.73269
ITEM22	310	1.00	4.00	3.1806	.75446
ITEM61	309	1.00	4.00	3.1780	.71444
ITEM04	310	1.00	4.00	3.1774	.77008
ITEM42	309	1.00	4.00	3.1748	.69451
ITEM18	310	1.00	4.00	3.1742	.72984
ITEM34	309	1.00	4.00	3.1715	.70229
ITEM64	309	1.00	4.00	3.1683	.73690
ITEM49	309	1.00	4.00	3.1650	.71755
ITEM46	309	1.00	4.00	3.1650	.73983
ITEM08	310	1.00	4.00	3.1613	.76310
ITEM48	309	1.00	4.00	3.1586	.80022
ITEM23	309	1.00	4.00	3.1586	.72799
ITEM28	309	1.00	4.00	3.1586	.74125
ITEM33	309	1.00	4.00	3.1586	.77130
ITEM02	310	1.00	4.00	3.1581	.75311
ITEM26	309	1.00	4.00	3.1553	.76562
ITEM27	309	1.00	4.00	3.1521	.75130
ITEM55	309	1.00	4.00	3.1521	.72491
ITEM52	309	1.00	4.00	3.1489	.73668
ITEM39	309	1.00	4.00	3.1456	.72176
ITEM32	309	1.00	4.00	3.1456	.71270
ITEM54	309	1.00	4.00	3.1456	.75259
ITEM53	309	1.00	4.00	3.1456	.74826
ITEM36	309	1.00	4.00	3.1424	.76815
ITEM51	309	1.00	4.00	3.1424	.75964
ITEM44	309	1.00	4.00	3.1392	.71400
ITEM20	310	1.00	4.00	3.1387	.74398
ITEM19	310	1.00	4.00	3.1355	.73363
ITEM06	310	1.00	4.00	3.1323	.75380
ITEM38	309	1.00	4.00	3.1294	.74907
ITEM17	310	1.00	4.00	3.1226	.76184
ITEM50	309	1.00	4.00	3.1068	.76760
Valid N (listwise)	309				

Appendix 3 Feedback on Peili process

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00007	319	2.00	4.00	3.2884	.54215
VAR00008	319	2.00	4.00	3.2853	.58557
Valid N (list wise)	319				

Feedback on the question " Is the Peili introduction easy to follow?" （VAR00007）

	Very easy	Easy	Difficult	Very difficult
Amount	106	199	14	0
Percentage	33%	62%	4.3%	0

Feedback on the question " Is the Peili process easy to follow?" （VAR00008）

	Very easy	Easy	Difficult	Very difficult
Amount	113	184	22	0
Percentage	35%	58%	6.9%	0