A MORPHOLOGICAL APPROACH TO BUSINESS MODEL CREATION USING CASE-BASED REASONING

Lee, Ji Hwan; Hong, Yoo S.

ABSTRACT

This study aims to provide a structured methodology for a business model creation. Based on a morphological analysis of business model, we propose the methodological chart named as business model creation template with which one can generate a variety of business model alternatives. The template consists of a set of predefined building blocks which describes the strategic patterns and/or constituent elements of a business model. Those building blocks have been collected and verified through comprehensive analysis of real-world business model cases and relevant literature. Furthermore, we develop case-based reasoning system for supporting a new business model creation. The system aims to provide the business model planner of intuitive cases in creating a new business model. Based on a case base that contains about a hundred of real business models, the system receives an input query from a business model planner, and retrieves similar cases to the query based on case matching mechanism. In the case study, we actually generate the new business model alternatives for apparel company that want to commercialize their newly designed product.

Keywords: Business model, Business model creation, Morphological analysis, Business model creation template, Case-based reasoning, Strategy, Protocol

INTRODUCTION

Globalization of markets and rapidly increasing needs of customers inevitably led companies to fierce competitions. In this environment, lowering price or speeding up technology is no longer guarantee of firm's being successful in their industries. Recently many companies try to find new sources of competitive advantage by having a superior business model than their competitors. By interviewing hundreds of CEOs of the global company, Pohle and Chapman [1] ascertain that most of the company list a business model innovation as their major priority. The ideas of business model innovation are also reflected in emergent management keywords such as 'freeconomics', 'long-tail' [2], 'open innovation' [3], or 'web 2.0' [4]. Regardless of the differences of context or in the applicable industries, these keywords' common denominator is the emphasis on reinventing the ways of doing business. Rather than emphasizing rapid technology development, they suggest innovation in the means of getting paid, in partnerships, or in designing new value propositions.

The concept of the business model is popular because it provides a novel concept on which basis a firm can obtain competitive advantages. By configuring its business model differently from a competitor's, a firm can escape the fierce competition that is based on lowering prices and speeding up the technology development cycle (Johnson et al., 2008). Some of companies from electronic devices, airline, or mobile phones have already achieved a huge success by adapting a good business model to their product or services. In the printing machine business, for examples, Xerox reshaped their business model by changing their ways of getting paid. They lease printers with small fixed fee with receiving additional payment for various supplies and maintenance services. Instead of selling a large printing machine to the customers, the new model helps them generate the sustainable revenue streams from their customers [5]. Also, in an airline service industry, some of the pioneers restructure their business model. By simplifying unnecessary service offering with reduced the fares, they succeed to attract new customers as well as make the superior cost structure because of its simplified activities structures [6].

Whereas the term business model is widely taught and used, in academia and in practice, complete agreement on its definition remains elusive. There is no agreement for appropriate level of abstraction and constituent for its representation. Sometimes, it is defined as the simple logic for a firm to make a sustainable profit with their product or services [7]. From this view, any kinds of the story that can

describe the way of doing business could be a firm's business model. On the other hands, Petrovic et al. [8] require more rigorous definition. They consider a business model as a kind of system which has architecture of the constituent and its interactions. Its inter-disciplinary nature is another reason. According to Alt and Zimmermann [9]'s literature survey on business model, most of the business model definitions includes various perspectives including a firm's mission, structure, processes and revenues.

In spite of the lack of unified definition or supporting theory, there have been several attempts to explain the business model. Bottom-up approaches try to provide taxonomy of business models by way of classification schemes. One of the well-known taxonomy is Timmers [10]'s for the internet business. It classifies a business models on the website according to a two dimensions – the degree of applicability of new internet technologies and the extent of integration within the activities of the value chain. Linder and Cantrell [11]'s taxonomy is more applicable to generic industries. On the other hands, top-down approach aims to identify a generic structure or its constituent of the business model. Morris et al. [12] define the business model as a set of decision variables that consists of three layers: generic strategic decisions, tactical decisions, and actual quantifiable variables. Osterwalder [13] presents an ontology of the business model consisting of the nine basic components by decomposing them into more detailed elements and identifying their inter- and intra-relationships. Although both bottom-up and top-down oriented approaches provide a good understanding of the business model itself, neither of them try to handle the question of 'how to design an innovative business model'.

This study aims to establish a structured methodology for new business model creation. We apply the morphological analysis in structuring and investigating the possible relationships of the business model. It decomposes the business model into balanced perspectives, and then for each perspective, identifies a set of predefined building blocks which describe the strategic patterns or constituent element. Those pre-defined building blocks were obtained by investigating various real business models and relevant literature. As a result of the analysis, we develop a morphological chart named as 'business model creation template' that can represent the possible configurations of the business model. By mixing and matching various building blocks in the template, a business model planner is able to generate a variety of alternatives, which might lead to an innovative business model.

In order to facilitate the creation process, we also implement the case-based reasoning system. The system supports the business model planner by reminding him or her of appropriate business model cases. The system is operated based on a case base that contains about a hundred of real business model cases. If the planner specifies an input query reflecting his or her partial ideas about a new business model, then the system retrieves relevant cases based on a case matching mechanism.

The remainder of this paper is organized as follows. In chapter 2, we present the morphological approach with the framework in more detail manner. In chapter 3 and 4, we describe the structure of the case-based reasoning systems and implementation issues. In chapter 5, we present the case study of business model creation using proposed methodologies. We discuss the future issues and conclude in chapter 6.

A MORPHOLOGICAL APPROACH FOR BUSINESS MODEL CREATION

The term morphology means the study of form or patterns. It aims to understand the object based on typology which contains various types of patterns. Morphology has been associated with many scientific disciplines where the construction of formal structure is required such as linguistics, geology or astronomy. Zwicky [14] pioneered generalized use of morphology in studying more abstract structural interrelationships among phenomena, concepts, and ideas. Ritchey [15] refer to this approach as morphological analysis and defined it as a method for identifying and investigating the whole set of possible relationships or configurations contained in a given problem. Morphological analysis facilitates the ideation process by helping to discover new relationships or configurations, which may not be so evident, or might be overlooked by other. Because of its nature, morphological analysis has a wide applicability in various disciplines requiring creative process such as product concept design [16], policy design[ref] and others.

In order to apply morphological analysis to the problem, its structures and problem solving process should be well-suited to the morphological analysis. In terms of the problem structure, its nature should be multi-dimensional and non-quantifiable [14]. The nature of the business model satisfies both conditions. First of all, it is inter-disciplinary, since its concept is involved in various disciplines such

as strategy, operations and marketing [17]. Also, it is also non-quantifiable. Whereas numerical values might be appropriate for describing the scale of operations, it doesn't help the planner to get the whole picture of the business model. In order to represent the business model appropriately, it requires a set of qualitative description about its pattern or features rather than numerical values [18].
Furthermore, the problem solving approach based on recombining a pre-defined set of solution or patterns is similar to the business model creation process. It is noteworthy that the most interesting business models are generated by combining features of other business models [11]. For example, a widely employed revenue model of Internet business, by which content is provided to customers for free in exchange for attention paid to advertisements, comes from the traditional broadcast industry. This free revenue model recently has been applied to various product and service concepts beyond the Internet. [2]. In addition to revenue models, various features such as channel configuration, relationship strategy and cost structures also can be combined to establish a firm's new business model. [6]. A morphological analysis facilitates this regenerative process by structuring the business model and collecting the set of reusable ideas or features.
In this sense, we proposed structured framework for using a morphological analysis in a new business model creation. We use Zwicky [14]'s generic problem solving process of morphological analysis and refine each steps according to the business model context. Each step with brief description is presented in Figure 1.

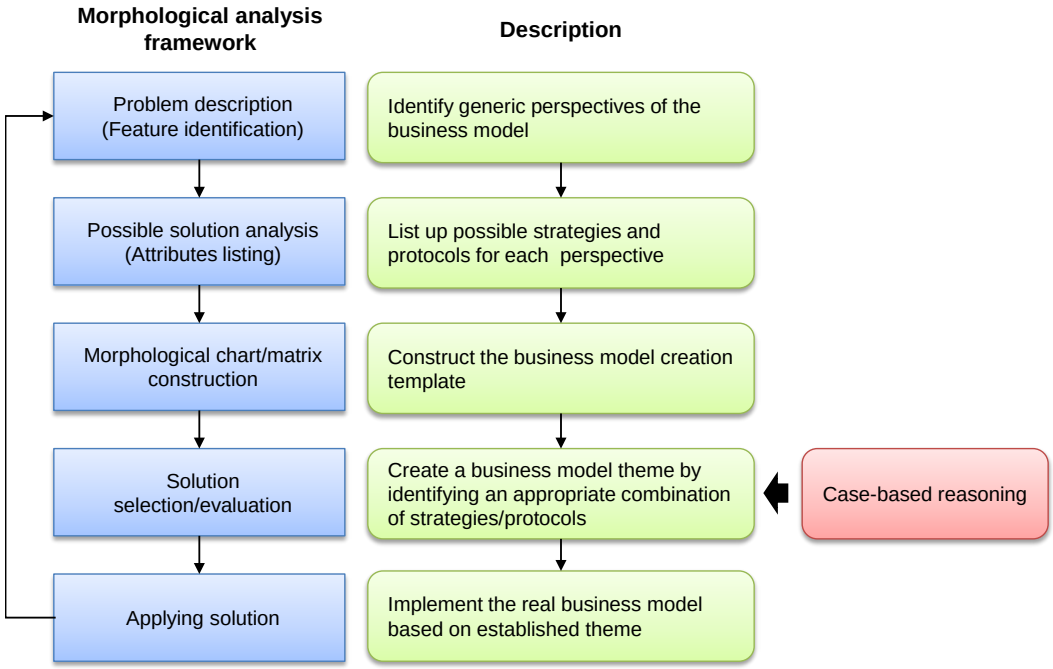

Figure1. A morphological analysis framework for business model creation

The first step is the problem description. In this step, overall structure for the business model is constructed with the identification of its dimensions and attributes. As constituent dimensions, we identify eight basic perspectives. Each perspective provides unique view through which a business model could be analyzed. The eight perspectives - revenue model, cost structure, distribution channel, customer relationship, customer segment, activity configuration, resources, partner network (Notice) come from the Osterwalder [13]'s decomposition of the business model. Among the various literatures trying to find out representative set of element for the business model, his perspectives provide a balanced view for analysis of the business model.
In the next step, possible set of attributes for each dimension is identified. Each attributes represents specific features or ideas that could be applied to create the new business model. We refer to the set of possible configurations or patterns of the business model as building blocks. Those building blocks were derived from a comprehensive analysis of various real business model cases and relevant literature. In order to analyze the business model in more structured way, we propose the two types of building blocks: *strategies* and *protocols*. A strategy is an upper-level decision that a business model can pursue. It drives the overall logic of the firm and the way it operates according to its specific

purpose. On the other hand, a protocol provides a set of standard elements that need to be considered in implementing a business model, in order to ensure that the entire logic of the business is sound and synchronized.

When entire building blocks are collected, morphological chart is constructed. We refer to this morphological chart as the business model creation template. As described in Figure 2, a variety of building blocks for business model creations are organized by eight perspectives. Also they are classified as two types – strategy and protocols. Although there are several top-down approaches that define the overall architecture of the business model and its predefined building blocks, the proposed template is more flexible, since the overall building blocks can be updated as new business models are accumulated to the reference. Also, it is a more practical method for business model creation, since the building blocks used in the proposed method are generic enough to be combined across the boundaries of various industries so that the proven ideas in one business could be transplanted in another, which is often the case in the real world.

Strategy (Specific keywords that reveals strategic pattern of each perspective)

Customer Segment	Diversification	Segment extension	New product development	Segment penetration											
Customer Relationship	Low Cost Access	Financial Advantage	Reward	Membership	Awareness	Education	Community	Branding	Interface	Library Effect	Life-Cycle Care	Customer Participation	Customization	Lock-In	
Distribution Channel	Giving More Experience	Easy Access	Using Installed base	Vertical Integration	Horizontal Integration	Adding More Services	Bundling	Sharing	Direct Channel Control						
Revenue Model	Sell by a unit	Profit Sharing	Razor Blade	Subsidiary	Free-mium	Cross Subsidization	Loyalty	Cocreation	Subscription	Membership	Pay-per-Use	Barter	Gratis	Commission	Charity
Cost Structure	Cost Effectiveness	Cost Efficiency	Structural Innovation	No-frill											
Resources	Adding New Resources	Alternative Resources	Move into other industry	Leveraging-established-asset	Open Innovation	Alliance	Bargaining-Power	Re-cycle/ Re-use	Mash-up						
Activity Configuration	Activity Integration	Offshoring	Outsourcing	Affilate Network	Design Capability	Simplifying Product/ Service	Economies-of-scale	Flexibility	Responsiveness-to-market	Effective-sales-promotion	Speed-of-distribution	Quality			
Partner Network	Establishing Standards	Franchaise	Risk Sharing	Gain access to complement	Speedup Market Entry	Gain Market Power	Maintain a Leadership								

Protocol (Things implementing each perspective)

Customer Segment	Types of Customer	B2B	B2C	B2G	Types of Region	Local	Regional	National	International	Types of Market	General	Multi	Niche		
Customer Relationship	Customer Retention	Customer Acquisition	Advertisement	Sales Promotion	Personnel selling	Public relations	Tyeps of relationship	Transactional	Relationship Based						
Distribution Channel	Channel Structure	Direct Channel	Indirect Channel	Channel Sharing	Installed Product	Online Channel (Internet)	Value Added Resseler	Delivery	Bundling						
Revenue Model	Unit of Pricing	Physical unit	Service	Subscription	Outcome	Time	Asset used	Resource used	Sell by benefit	Benefit	Pricing Mechanism	Fix	Differential	Market	Bargaining
Cost Structure	Cost Drivers	Activity Drivers	Industry Drivers	Resource Drivers	Positioning Drivers	Operations Cost	Resource Cost								
Resources	Types of Resources	Equipment	Network Infra	Channel	Finance	partnership	Alliance	Customer Base	Reputation	Technology	Information	Contents	Brands	Humans	
Activity Configuration	Types of Activities	Administrative	Product/Technology Dev	Procurement	Logistics	Operations	Sales & Marketing	Servicing	Customer Management	Channel Configuration					
Partner Network	Types of Partners	Administration	Suppliers	Complementor	Competitor	Consultant	Buyers	Distributors	Types of Networks	Vertical Integration	Solution Network	Internal Network	Quasi-Integration	R&D Network Standardiza-	Multi-Sided Platform

Figure 2. Business model creation template: a morphological matrix

In a fourth step, a planner tries to find a best combination of building blocks based on the template. This step is time consuming and also requires a lot of creativity. Based on a deep understanding about the business related factors, the planner tries to find a best combination of building blocks that could unlock the potential value of product/service to commercialize. The morphological chart could provide a variety of alternative themes which might be overlooked or missed without it; and which might lead to innovative result. In this step, referring other business model cases could be a good start point for the creation. Case-based reasoning system supports the planner by reminding him or her of appropriate business model cases. The detailed topic about case-based reasoning system is presented in next chapter.

In last step, selected concept of the new business model is practically applied and implemented. In this step, detailed activities and resources are structured for operating a business model concept. Zott and Amit [19] defines activities of the business model as the engagement of human, physical and capital resources of any party for fulfilling the overall objectives. Since those activities level designs are largely depend on the specific context or environment of the focal firms, it requires the planner's experience or knowledge about their activities.

CASE-BASED REASONING SYSTEM FOR A NEW BUSINESS MODEL CREATION

Case-based reasoning is a problem-solving approach that takes advantage of the knowledge gained from previous attempts to solve a particular problem [20]. Basically, case-based reasoning uses the analogy of previous cases in problem solving. Previous record of past attempt to solve a particular problem is stored as a case and the collection of such cases – a case base then become a model for problem solving. It generates the solution by deriving a set of cases that has similar to given problem in situation or context and synthesizing them. Since the reasoning process is grounded in commonsense premises and observations of human cognition [21], it is easy to understand and has broad applicability to a variety of domains such as business operations, engineering and design. Also, it is evolutionary. The more cases are collected into the case base, the more powerful model the system will have.

In this study, we propose a case-based reasoning approach that is used in the ideation process of business model creation. The reason behind using case-based reasoning approach is simple; recalling previous cases could provide a good starting point for generating a new solution. As the creation of a new design requires previous experience or exposure to another's design experiences [22], new business model is also created by adapting ideas of other business models. Therefore, case-based reasoning could enhance the efficiency of creation process by providing an easy access to previous cases through the case base with retrieval logic. In order to realize the proposed approach, we implement the case retrieval system based on case-based reasoning. The system is consist of two part; one is case base where about a hundred of previous business model cases are collected and other is case matching logic for case retrieval.

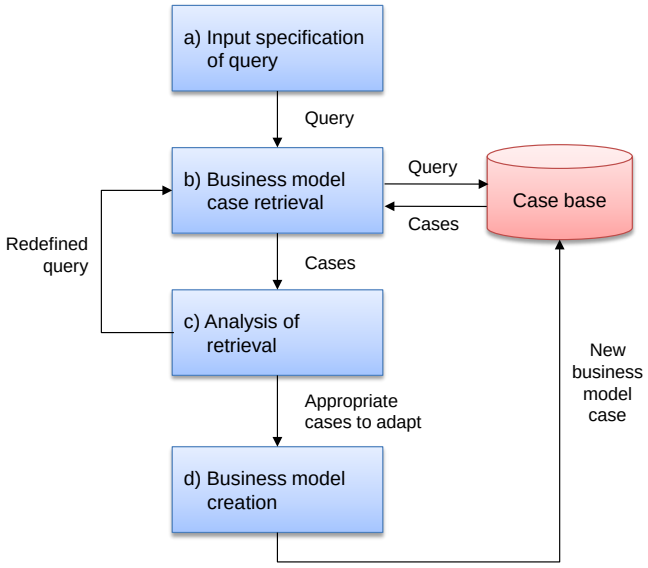

Figure 3. Case-based reasoning process for supporting ideation process of business model creation

The structure of the case retrieval system is described in figure 3. At first, a planner specifies an input query by selecting a set of building blocks from the morphological chart – the business model creation template ((a) in figure 3). Since each building block in the template describes specific feature or patterns, a set of building blocks could represent the partial idea about a new business model. When the query is specified, then relevant cases are retrieved by the query ((b) in figure 3). In this process, the case matching logic calculates each case's similarity to the input query; then entire cases are ordered by its similarity. In this way, the planner could judge the relevance of a case to their interest based on a numerical metric. The next part relates to case analysis and its adaptation. The business model planner scrutinized the retrieved cases and selects some business model cases to adapt ((c) in figure 3). These case retrieval and analysis steps are iterative. When the planner couldn't find good cases based on the current query, he/she can try new query by selecting another set of building blocks. When the appropriate cases are selected, the final step is to create a new business model solution ((d) in figure 3). Although the selected cases do not provide a perfect solution, their strategies and

protocols offers a good clue for the new business model. Finally new concept of the business model is derived by combining building blocks for entire perspectives. The new business model is accumulated to the case base and serves as a basis for another business model creation.
It is noteworthy that the proposed system does not automatically generate the final solution for a new business model. We leave adaptation and creation process to a person – a business model planner. Although many of case-based reasoning applications automate the reasoning process by synthesizing retrieved cases, they usually works well in a circumstance where the domain of the problem is relatively simple or do not require much creativity in deriving a solution [21]. Since the creation of a new business model requires a deep understanding of the domain knowledge about their business, and also such knowledge varies across different cases, it is hard to find easily programmable set of adaptation heuristics for generating a solution.

METHODOLOGY FOR SYSTEM IMPLEMENTATION

Data structure identification for case representation

To establish a case base for business model, adequate dimensions and attributes for case has to be identified. In our morphological analysis, we have already defined such dimensions as eight balanced perspectives, and possible building blocks as attributes. In addition to this, we also define additional dimensions for the case such as name of company, related industry class, and short description. According to the structure of the cases, total 98 interesting and intuitive business models across various industry fields are used in establishing a case base.
When the complete structure of data is identified, we need to identify which kinds of dimensions should be used in specifying input query and representing a result. For the query part, the dimension that describes a problem's situation or goal is appropriate because the reasoning process is initiated by recalling a similar goals or situation not by a result. By definition, the *strategy* perspectives are adequate for recalling the relevant business model cases because they represent the strategic goal of the business model. For the result part, it should provide useful information for deriving a solution. Since the whole dimensions constituting the case – strategy & protocol perspectives, case description, company name, and industries – could provide useful intuition or ideas about the new business model, we decide to represent the entire dimension of a case as a result part.

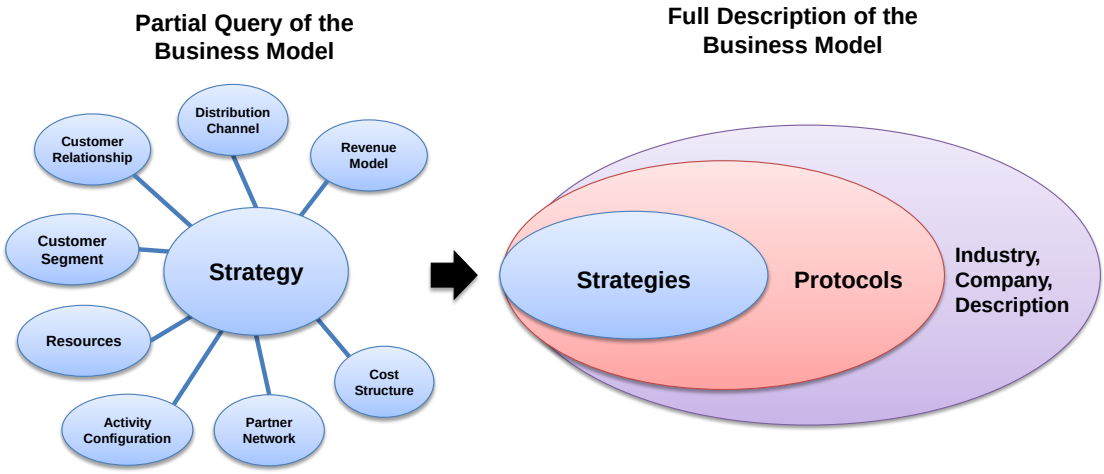

Figure 4. Identification of attributes in case retrieval

Figure 4 illustrates the identification of dimensions that are used in case retrieval. A partial set of strategies from template is specified as an input query. Then the system searches business model cases that have similar set of strategies and retrieve them. When the case is represented to the user, entire set of dimensions are also provided.

Similarity identification between attributes

In order to retrieve cases that are similar with specified input query, the system requires mechanism for measuring similarity between a query and each case. Since all of attributes for case matching is symbolic values – building blocks of strategy, it is hard to determine the distance between cases. One

of the methods for dealing with this situation is to identify its set/subset relationship among the attributes [20]. By classifying similar strategies into a set, and organizing similar sets into a super set, we can construct the hierarchical trees for classifying the attributes. Then similarity between attributes can be obtained by checking how far their parents are located.

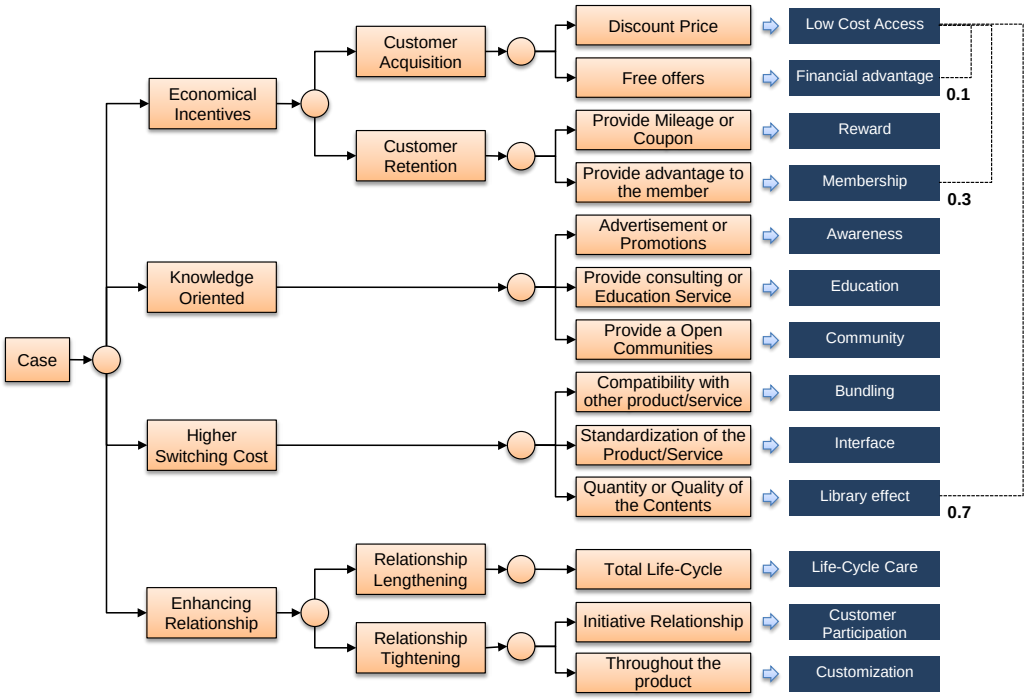

Figure 6. Hierarchical tree of customer relationship strategies

Figure 6 illustrates the hierarchy of customer relationship strategies. Total 15 strategies are classified according to its similar characteristics. Parent nodes represent an abstracted pattern of their sub nodes. In a first level, there are four generic patterns for customer relationship; enhancing economic incentive, provide better information, raising switching cost, and tightening relationship. They are further decomposed into lower level patterns. Those patterns contain more detailed description than their parents but they are also abstracted compared to a single strategy building block. Based on the hierarchy, we can calculate the similarity between strategies. We set the distance between strategies is 0.1 when they share same parent, 0.3 when they share same grandparent but different parent, and 0.7 when they don't share parents. Although setting the distance in this manner requires quite strong assumption, more precise distance relationship could be obtained by pair wise comparison methods such as analytical hierarchy process (AHP) [23] or other methods. Following the distance assumption, we can generate the distance matrix for strategies. The distance matrix of customer relationship strategies are described in figure 7. In the same manner, we can construct distance matrix of remain perspectives. Since most strategies are not defined in an exclusive manner, the classification scheme construction provides not only a basis for similarity measure but also a clear understanding of entire building blocks.

Customer Relationship	Low-cost-access	Financial-advantage	Reward	Membership	Awareness	Education	Community	Bundling	Interface	Library-Effect	Life-cycle-care	Customer-participation	Customization
Low-cost-access	0	0.1	0.3	0.3	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Financial-advantage	0.1	0	0.3	0.3	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Reward	0.3	0.3	0	0.1	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Membership	0.3	0.3	0.1	0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Awareness	0.7	0.7	0.7	0.7	0	0.1	0.1	0.7	0.7	0.5	0.7	0.7	0.7
Education	0.7	0.7	0.7	0.7	0.1	0	0.1	0.7	0.7	0.7	0.7	0.7	0.7
Community	0.7	0.7	0.7	0.7	0.1	0.1	0	0.7	0.7	0.7	0.7	0.7	0.7
Bundling	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0	0.1	0.1	0.7	0.7	0.7
Interface	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.1	0	0.1	0.7	0.7	0.7
Library-Effect	0.7	0.7	0.7	0.7	0.5	0.7	0.7	0.1	0.1	0	0.7	0.7	0.7
Life-cycle-care	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0	0.3	0.3
Customer-participation	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.3	0	0.3
Customization	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.3	0.3	0

Figure 7. Distance matrix of customer relationship strategies

Case retrieval through case matching mechanism

After similarity relationships for attributes are identified, the case matching procedure is straightforward. A numerical evaluation of similarity between query and case is obtained based on a similarity functions. In calculating a degree of similarity and case retrieving, we use the nearest neighborhood methodology. The methodology basically calculates the numerical distances using a similarity function – usually Euclidian distance. Also degree of importance for each features are aggregated in the calculation. The more important a certain features of attribute is regarded, the highly it is reflected in the calculation by weighting more. When every pair of distance is measured, it then retrieves cases by low-distance order. A simple numerical functions for the distance is shown in equation (1)

$$d = \sqrt{\sum_{i=1}^{n} W_i \times (f_i^Q - f_i^C)^2} \quad (1)$$

where,

i the selected feature (perspectives of business model strategies)

W_i weight of the ith feature

f_i^Q attribute values of ith feature in query

f_i^C attribute values of ith feature in case

Our system requires a business model planner to assign appropriate weight for each attribute. Although there many of the case-based reasoning application attempts to apply various methodologies such as analytical hierarchy process (AHP) [24] or genetic algorithm [25] for attribute weighting, it usually works well in when there are too large search spaces to handle them manually. In our case, because the number of features that is used in case searching is only eight (maximum numbers of perspectives) or usually less than that, it is possible for a user to manually assign a feature weight.

CASE STUDY – BUSINESS MODEL CREATION FOR CLOTHES RECYCLING SYSTEM

In the case study, we aim to develop a new business model of the apparel companies who want to commercialize their newly designed product – the clothes recycling bin. In the case of the existing recycling system operated by public services, many people are unwilling to donate their used clothes because it is poorly designed and located in unfavorable areas. In order to improve this situation, a new concept of recycling named ‘TakeIN’ was proposed by Cho et al. [26]. This new concept can provide a clothes donator with a more positive experience, since it has improved aesthetics with additional functions aiding the clothes-packing activities of the user. In contrast to the traditional system as managed by a public agency, we aimed to develop a new business model that can be operated by apparel companies.

By reinventing their business models, the firm wants to achieve the two strategic goals. First, they want to enhance reputations on their participation in the social activity. Second, although they can’t

directly make money through this business, they want to enhance the indirect benefit by attracting more customers buying clothes. In order to achieve both goals through a new business model, the planner has to find a best combination of strategies and protocols for their new business model.
In this ideation process, case-based reasoning supports the planner by reminding him/her of intuitive business model cases. The system receives specifies input queries from planner and returns relevant business models by measuring the distance. As illustrated in figure 8, a planner specifies input query by selecting attributes values with assigning a weight. Selected four attributes are 'Barter model' in a revenue model perspectives (represents a pattern for enhancing indirect value by customer participation), 'Easy access' (enhancing accessibility to the channel) in a distribution channel, 'Recycle' (recycling or reusing the firm's resources) in a resource perspective, and 'Low cost access' (attracting more customers by low cost for product/service). Those attribute represents a business model planner's strategic goal or partial ideas on his new business model.

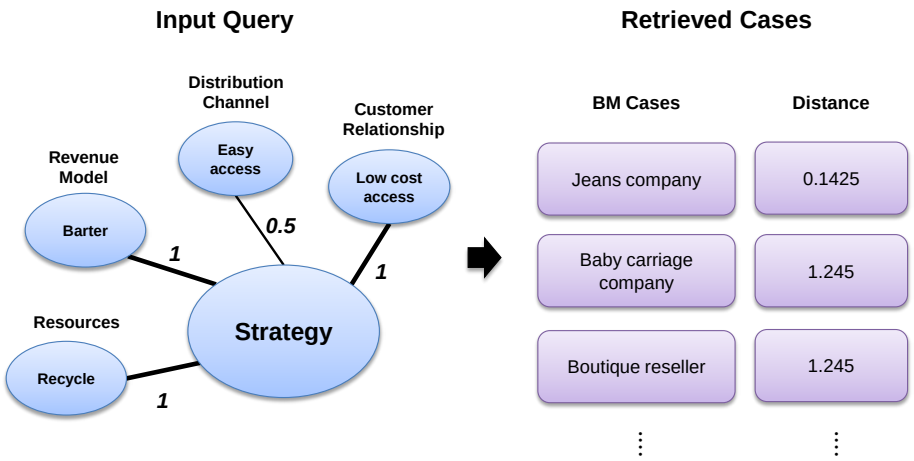

Figure 8. Specified input query and case retrieval

By selecting business model cases to refer, the planner could clarify the new concept of the business model. We illustrated such process based on three most relevant cases ordered by its distance from the query. Interestingly, each case gives clues for a new business model idea. The strategies and protocols of these business models are illustrated in Figure 9.

	Perspectives	Customer Relationship	Distribution Channel	Customer Segment	Revenue Model	Cost Structure	Activity Configuration	Resources	Partner Network
Jeans Company	Strategy	Reward	Sharing	Product-development	Barter	Cost-efficiency	None	Recycle-reuse	None
	Protocols	Customer retention	Direct-channel	B2C National General	Physical-unit	Activity-drivers	Sales-marketting	Channel Logistics	None
Baby carrage company	Strategy	Low-cost-access	Direct-Channel-Control	Segment-extention	Lease	Cost-efficiency	Affilate-network	Recycle-reuse	Gain-access-to-complementary
	Protocols	Customer acquisition	Direct-channel	B2C Regional Niche	Time	Activity-drivers	Operations Channel configuration	Channel Equipment	Complementor
Fashin Recycling Boutique	Strategy	Low-cost-access	Direct-Channel-Control	Segment-extention	Commission	Cost-efficiency	Availability	Recycle-reuse	Franchaise
	Protocols	Customeracquisition	Direct-channel	B2C National Niche	Physical-unit	Resource-drivers	Operations Channel configuration	Contents Channel	Customer

Figure 9. Three most relevant cases: strategies and protocols representation

The most similar case is the business model of a jeans company that provides coupons to the customers in exchange of used jeans. If the planner aims to recycle low- or medium-end clothes, the

retrieved case is directly applicable. By installing recycling bins in their branch stores and providing rewards (coupon or reward) to the customer who donate clothes of their brand, a new business model could attract customers with satisfying both social and economic values. The first case also provides good information about how to implement the real business models. The protocols of the case describe what kinds of activities or decisions are required to operate the entire business model.
The second and third cases provide clue for another types of business model. Both cases use the concept of 'recycling' in their business model. Especially third case is intuitive. In the third case, the company is kind of boutique broker. It collects used high-end clothes and leases those clothes to another customer through many branches. They make profit by receiving commission between clothes consignor and buyer. This idea is applicable to recycling bin system. The recycling bin could be a good high-end clothes collector in accessible places such as department or clothe store. Then, the company could make a boutique brokerage network using collected clothes. Although there are still remains implementation issues for required activities or infrastructure, the retrieved cases provide interesting idea on the new business model.

CONCLUSION

Having a good business model is a 'must' in surviving in the competitive environment. By doing their business differently, a firm finds the new ways of innovating revenue streams and reducing their cost. While the term business model is widely used in both academia and practice, there is no structured methodology for supporting the business model creation. Many of the literature present frameworks of the business model by defining the overall architecture or taxonomies, but they do not provide any guideline for generating new ideas on the business model. To this end, this study introduces the structured methodology for business model creation with the supporting intelligence system.
In this study, we find out the fact that many of interesting business models is generated by combining features or patterns of others. In order to reflect this nature to the business model creation process, we develop the structured methodology based on morphological analysis. The methodology aims to construct the morphological chat (business model design template) that could facilitate the ideation process by providing a variety of patterns or features of other business models.
In order to support the ideation process, we also implement the case-based reasoning system. The system provides the business model planner of intuitive business model cases. Planner's partial idea or interest is specified as an input query, and the system retrieve most relevant cases to the planner. Although the system does not generate the automated solution for a new business model, recalling the relevant business model cases could be a good starting point for new business model creation. In order to implement the system, a case-base of about a hundred of business model along with the case matching mechanism is established.
There are, however, further research issues to explore. Firstly, the inter-perspective relationship between building blocks should be identified. Strategies or protocols from various perspectives should be organized by the certain logic or pattern in order to describe the overall story of the business model. In addition to the internal fit between the components, they also should fit into the outside environment. We plan to develop a method which can tie selected strategies and protocols into the whole story in order to make a clear the logic of the business model. Second, a methodology to evaluate a given business model alternatives should be developed. In order to define this, identifying value structures of various stakeholders and the relationship with them should be identified. The evaluation methodology based on the well-defined value layer helps design the business model or select on appropriate one among various business model alternatives by measuring the value creation.

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