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‘CHANG’ : A NEW COMPETITIVE THINKING FRAMEWORK FROM THE VIEWPOINT OF MANAGEMENT INFORMATION SYSTEMS

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ABSTRACT

Because of rapidly information technological innovation, to investigate competitive advantage we need to build institutions overall view that link all competitive elements from inside to outside, and from now to future. As the phenomenon that competition is a stochastic process, by defining “Chang” (a transliteration of Chinese word-場) “a set of space intersection time, which exists influence”, here we construct a new competitive thinking framework and expound that why and how “Chang” is a good way that can connect Strategy, Management and customer value in the overall view of institutions to enable competitive advantage business.

Keywords: Service, chang, influence, strategy, management, customer value.

INTRODUCTION

How to create the competitive advantages is the essential issue for enterprises. Michael Porter (1980) indicated that researchers should draw attention on the research stream of internal improvement such as differentialization, value chain management, business process reengineering (BPR), and organizational culture. Conversely, in term of the business external perspective, Woodruff [15] believed that customer value is the main resource of organizational competitive advantages in the future. Endo [3] proposed the concept of “Gemba-Power” which is used to strengthen the firm’s strategy and management by raising the customer value based on the “Gemba” aspect. In other words, Gemba-Power is seems to try to search for the optimal solving process of strategy, management, customer value, and enterprise value. The difference between the Michael Porter’s and Woodruff’s viewpoints is that Michael Porter uses the top-down approach to search the optimal solutions from internal strategy (starting point) to customer value (terminal point); whereas the Woodruff applies the bottom-up method to look for the best business strategy from customer value.

Prompt and innovative technology has changed the ways of our lives, leading us to focus on the bottom-up deliberation. Here are the observations from following phenomena: Facebook, Line, and Twitter are changing the ways of communications and group activities, influencing the customer consumption behavior (i.e. occurrence of word-of mouth marketing). Indeed, information systems can explore the patterns of consumption behavior and analyze our life habits through techniques such as data mining, big data, and mobile technologies. Furthermore, the growth of e-commerce makes us shocks that our competitors may come from the other edge of the world. That is, the competitors are sleeping in the night at the other edge of the world, forcing our business advantages while we are working hard in the day. In a short, information technologies can enlarge the variation of the customer value; reduce the time to understand the trends of customer behavior by replacing the traditional research methods, and extend the competition areas within the industry. Those factors are essential and need to be carefully deliberate for business strategy.

However, customer value is not the necessary and sufficient conditions for creating the innovative product such as Windows systems, iPhone, or Google. In other words, customer value would not generate before the presentation of innovative product or service. Just as Jobs said [18]: ‘Customers don’t know what they want until we’ve shown them’. Further, it is difficult to analyze and identify the critical factors in a short period according to above cases and instances. But there are some common features among those examples, that is, all of those are influencing, non-localized, and rapidly diffused. Therefore, in order to keep the competitive advantages in this competitive business world by using the newly innovative technology which may replace from the internal strategy to external customer among the traditional value chain, there are three questions that we need to re-considerate: (1) how long can we keep the company influencing? (2) how fast does our company influence spread? And (3) what is the end of our company influence? Indeed, we also need to consider that the period of revolution will gradually shorten because of the progress of advanced technology.

To understand the competitive advantages of company, it is needed to achieve the goal by building up a connection between the strategy, management and customer value, entire plan, and executive capacity. Nevertheless, to build up such a connection is difficult since there are a variety of properties, complexity of integration, different issues and aspects from distinct industries. Recently, the research trend of service innovation mainly focus on how to interact with customer directly to create the company value, for example, improve the services to meet the different needs from customers, increasing the product and service value provided by the company [14]. Based on the evolution of literature of competitive advantages, it reveals that the way of competitive strategy is following the progress of technology and practical application, thinking and research was approaching the way of interaction of sufficiently “interaction” with customers, strengthening the company value based on the concept of customer value. Furthermore, we found that there was a common feature, “interaction”, existing between the strategy, management, innovation and customer value. Thus, this paper tries to use the concept of “interaction” to integrate the strategy, management, innovation, customer value and the logic of business operation.

There is a degree of mutual influences generated from the occurrence of “interaction.”(Field Theory) Hence, we can regard the “influence” as one dimension. Indeed, there is no more geographic limitation of competitors because of the increasing of electronic commerce, the diffusion of space is another essential dimension. Furthermore, in view of the effect of technology increases the variation of customer value, time is the other dimension. To simplify the multi-dimensions and dynamic characteristic of competitive advantage model, this paper proposes three dimensions of integrated influence, space, and time, and defines “Chang” (similar mean as “field”) as the existing influence of time and space, where includes the physical and virtual spaces (e.g. communities established from the Internet). We apply the thinking framework by using the “interaction” as a basic to integrate the strategy, management customer value. In the next section, we review the related literature to discuss how to establish the thinking framework. Further, we define the concepts of “Chang” and explain the existing form of “Chang”. Finally, we analyze each case by applying the “Chang” thinking framework. Last but not least, we expect that researchers can develop a business competitive advantage model based on the “Chang” thinking framework for the future research.

LITERATURE

Observing the stock price of an enterprise, which is a correspond indicator of enterprise competition, we know that competitive advantage of an enterprise is a stochastic process. Kurt Lewin [16] developed Field theory which examines patterns of interaction between the individual and the total field, or environment. When we extend the concept from the viewpoint of enterprise to discuss the interaction between enterprises, the interaction between enterprises and individuals, the interaction between enterprises and environment and the internal interaction in enterprise for competitive purpose, it can reflect the stochastic process property of competitive advantage. Although Field theory emphasizes “that the behavior must be derived from a totality of coexisting facts and behavior depends on the present field rather than on the past or the future” [17]. Because of rapidly information technological innovation we have to also focus on the issue that how long and how far can enterprises maintain present field and future field. Nahapiet and Ghoshal [7] proposed that social capital facilitates the creation of new intellectual capital based on the value enhancement perspective. They also concluded that the process of creating intellectual capital was affected by opportunities, expectation, motivation, and ability, moreover, the feedback of intellectual capital can strengthen the social capital. This model could be clearly explained the creation process of intellectual capital. For instance, exchange behavior needs the interaction between the spaces (physical and virtual), besides, the feedback process is the extension of time. This model combined both time and space dimensions. Accordingly, we need to enclose those factors of social capital, intellectual capital, and the creation process of intellectual capital to discuss the organization competitive advantages. Thus, we also need to incorporate the social capital and intellectual capital, not only focus on the funding capital.

Using this concept to examine the five forces model proposed by Michael Porter in 1980s, this model focused on the produce-oriented of physical product and static aspect, ignoring the dynamic process. For example, there was little content to discuss about the problems of strategy transformation which corporates must take time, cost, and issues of surpassing the entry barrier consisting of social capital and intellectual capital from competitors. Such as the dilemma of Taiwan OEM economy which once was an Economic miracle.

Woodruff et al. [15] emphasized that customer value was the key factor of competitive advances. They defined “Customer value is a customer's perceived preference for and evaluation of the product attributes, attribute performances, and consequences arising from use that facilitate (or block) achieving the customer's goals and purposes in use situations.” Meanwhile, they also proposed the customer value hierarchy model which is used to discuss the interaction process between the customer values. However, this process did not and should not be applied in the technology industry in the practical world. Therefore, Van der Haar et al. [14] proposed the customer value model, and indicated that there were two differences, namely, *perception gap* and *information gap*, between the company and its customer, particularly in the technology-based company. The *perception gap* represents the potential mismatch between the value designed by the company and customer expectation in the purchase phase, whereas the *information gap* reflected the company did not have sufficient information about what their customers exact wants in business development phase. The deduction of both purchase and business development period will decrease the variation of the two stages, reflecting the importance of space and time issues, that is an extension from the social capital to end customer. However, customer expected value would vary according to the social change and information provided by company. We regard customer value as a lagging indicator, causing the *perception gap* in the long term strategy.

Sheth et al. [12] indicated functional value, emotional value, social value, epistemic value, and conditional value has an impact on the customer choice. Pine and Gilmore [9] defined experience as an individual join an event by customization. The purpose of company is to serve their customer by providing an impressive and precious experience which focus on the service design accompanying the culture asset. Both of service and experience are the crucial framework for service constructed between the company and their customer. Furthermore, company still need to take the consideration of incorporating the elements of service and experience into strategy and management, and not only ponder the price comparing with their competitors in the business world. However, service and experience are focus on the relationship between enterprise and customer.

Endo [3] referred Gemba as a place to undertake the customer service innovation, and seemed Gemba power as a kind of

implementation capacity. Thus, Endo proposed seven elements of “forceful and powerful Gemba”, the concept of constructing the strategy from the workplace to ensure the execution of operations. Based on this framework, he used the “interaction” to connect the strategy, management, and customer value. Indeed, he also described the issue of competitive advantages creation by incorporating the concept of “process.” This explained why there were some different performances between companies, even there were numerous and common management theories which provide critical factor analysis. That is because the existence of customer value is generated by the customer usage, and this would be influenced by the operational process, compacting with the implementation capacity of each company.

When it comes to innovation, it referred as the principle to strengthen organization competition advantages. According to the Roger’s [11] definition of innovation, the speed of innovation diffusion was influenced by the innovativeness, time, channel, and social system. Those four factors also included both elements of time and space. Thus, it is needed to strategically considering how to condense the innovation cycle and the time of influencing, and accelerate the speed of customer acceptance and innovation diffusion.

CONSTRUCTING THINKING MODEL

Bellows list how we construct the thinking model:

The concept of extension of interaction (Field Theory)

According to the concept of Gemba power from Endo, the feasibility of strategy is retrieved from the concept of Gemba; service innovation, which increases the company value, is also triggered from the interaction between the first-line employees (or system) and customers. The above states showed that the establishment of strategy is composed of valuable ” interaction point” If internal employees or outsource company could be seems as internal resources to create the social capital and intellectual capital, the concepts of service and experience can be applied to internal customers as well.

Influence

Organizations should concentrate on the procedure from organizational strategy to customer value instead of focusing on the indicator (e.g. customer value) since there are some procedures conducting by internal employees or mechanism to create the customer value. For example, applying the process of each dimension influence is an applicable model [8]. In order to sustain the competitive advantages and influence still includes social capital (e.g. searching the information from Google search engine) and intellectual capital (e.g. intellectual property) although methods to calculate the organization value are still used the funding capital as the basis. To discuss the organizational strategy based on the service or experience perspectives would probably focus on the process of customer values creation, whereas applying the perspective of influence to discuss the organizational strategy need to take the effects of technological innovation and industrial competitors into considerations. Regarding the entire thinking framework of mutual interaction, process, and scope, influence is more suitable and complete manner.

Feasibility of prompt measure in social science

Applying the influence to discuss the competitive advantages is the inevitable trend. Here are examples of applications: using data mining techniques to find the relationship between the diaper and beer; applying mobile devices to capture individual location; using virtual communities to understand the feature of social groups; conducting affective computing methods to measure the vision reaction to environment (e.g. eye tracker); requesting artificial pacemaker to record the physical reaction to external condition change; applying the big data technology to storage the personal, lone-term, behavioral data, etc.

Time and Space

While making a decision, how to moderately focus on the issue of funding capital and avoiding falling into the Status-Quo trap [6] is that you need to consider both of the present and the future “Field”. The theory of innovation diffusion is also composed of both dimensions, namely, time and space. Furthermore, IT (Information Technology) has broken the competition limitation of location.

The difference between the top-down and the bottom-up of dynamic programming

Logically, there are two solutions for dynamic programming, including the top-down and bottom-up approaches in operational research field. If we consider the optimal solution which the enterprise seems as the starting point and the customer as the terminal point, this would be the top-down approach, such as Michael Porter’s five forces analysis. Whereas the impact proposed by Kerry Patterson et al. [8] and Endo’s Gemba power [3] belong to the bottom-up approaches. While customer value vary caused by the technological innovation, it makes enterprise cannot observe and grasp the variation of customer needs, leading to falling into the Status-Quo trap. In this case, the decision-making and the development of organization would not focus on the customer value anymore. Comparing with the top-down approach, the bottom-up method would prefer to adjust the structure of organization to keep the competitive advantages by concentrating the customer value. The difference is that: what kind of decision should I make to influence our customers (top-down), and in order to influence our customers, what kind of decision should I make (bottom-up)? However, the deliberation of bottom-up often not exists in the top-down decision, causing people easily falling into the Status-Quo trap. For example, managers in manufacture industry still relatively focus on the issues such as cost down and quality promotion.

Based on the above reasons and the notice of generality, this paper defines “Chang” as influencing space and time, and the space includes both of physical and virtual space (e.g. community from the Internet). “Chang” has three dimensions, namely, influence, space, and time. This provides a thinking framework to examine the organizational strategy. Here, I enumerate several principles of building this thinking framework:

1. “Chang” causes the influence by connecting with the interaction: like the Gemba power, which emphasizes that the information used to make decision should be retrieved from the workplace, and this decision would comparatively and closely meet the expected customer value.
2. “Chang” needs the information: based on the concept of extension from the interaction point, the information should be supportive and influencing, providing the analytic information from internal and external. Therefore, the value of information systems is not merely like the enterprise resource planning system (ERP) or supply chain management (SCM).
3. Influence is two-way dimensions: strategically consider the impact from external environment, and notice the reciprocal communications from internal employees within the organization. In this case, the strategy, management, and customer value could be closely connected.
4. The thinking of “Chang” is not only for the financial value creation but also for generating the intellectual capital and customer value. And it caused the impact can continuously enlarge in both space and time dimensions.
5. According to innovation diffusion theory, except the cognitive value or time value, the impact would decrease as time goes by once “Chang” grown to the maturity period.
6. The influence would diminish: The influence would decrease under the departmental egoism, causing the intangible barrier between strategy and customer value. For example, an inappropriate design of key performance index (KPI) maybe causes the maximum benefit of department but not enterprise.
7. It takes time to changing the impact: firms like the original equipment manufacturer (OEM) in Taiwan transform its structure to brand market, they need to establish the maintenance centers worldwide, furthermore, within the company, they employ the organizational reengineering (e.g. separate the brand market and OEM) and cultivate organizational culture (transformation from technical-oriented to market-oriented)

EXPLORE THE WORLD FROM “CHANG” PERSPECTIVE

Applying the concept of “Chang”, the instances exist everywhere in our daily life. For instance, reading is someone staying in lonely space where the ancient’s thought and wisdom surpassing the limitation of time and space through the media. It leads individual to comprehend the knowledge and cultivate the wisdom, causing individual the knowledge of innovation; a conference is a “Chang”, existing its own time and space where people can exchange the idea, collect opinions, and spread the information; employers can influence their employees through the implement of leaderships, regulations, salaries, promotions, KPI, enterprise culture even the managers do not supervise their employees at every moment. Service is seems as a “Chang” where create the customer value and organizational value. The strategy can be explained that the present “Chang” can draw up and produce the future “Chang.” In addition, the best case is that the value generated from the impact can last in time and space dimensions; and the ways maybe includes such as merging, building up the core value of firm, conducting the strategic alliances, developing a wisdom organization, etc.

Generally, people want others to capitulate by using the psychological power or authority. According to the war strategy criterion, called the Art of War, it is said that “the supreme art of war is to subdue the enemy without fighting.” It means that to win the war by manipulating the impact of environment instead of using the military force. “Chang” should be regarded as the time and space to create value. From the financial perspective, company social responsibility (CSR) may consume the Stockholders' equity; however, CSR is the key “Chang” to build up the social capital and customer value. For example, Samsung Ltd. applied the CSR to improve the customer perceptions of product and brand image, and to promote the brand value and customer value through the high-quality product. DinTaiFung decorates the kitchen with transparent windows, allowing visitors directly seeing the producing process of making eighteen-plaited steamed dumplings (also called Xiaolongbao). This symbols the connection between the producing “Chang” to customer value by adding element of the experience economy. And the food provided from DinTaiFung was sublimated as a work of art. Furthermore, working in the transparent environment would be the stimulation for employees to work hard. Given another example of WowPrime, this company subsidizes its employees to pursue further education and travelling abroad. This policy may have a confliction with cost down strategy. In spite of the fact, this policy may involve innovative ideas from external culture after the travelling abroad. In addition, the experience of further education may inspire employees with the management mindset and knowledge, accumulating the “Chang” social capital and intelligent capital. And those resources and intangible capitals let the “Chang” prolong its time and space dimensions.

Taiwan was proud of its OEM economy model in the past; unfortunately, it has declined in an inferior position when comparing with Samsung Ltd. in the Korea at the present time. This is because of the top-down thought which let the company concentrate its attention simply on cost down and quality promotion, and ignore the experience economy of end users. The “Chang” of OEM industry cannot connect to its end customer and obtain the information about what is the customer needs, initiating the service innovation and experience for customers. Limited in competitive advantages of the high-degree social capital and intelligent capital from competitors, OEM industry would have an obstacle of transforming its strategy to build up a new “Chang” for customers. More than that, Samsung Ltd. use the intelligent capital to constructs the customer environment system, whereas domestic firms still limited to the focus on product perspectives. In other words, it would face the allocation problems of social capital, intelligent capital and customer value if OEM firm use the strategic alliances to cooperate with others to promote the competitiveness. After all, the organizational strategy still has to remain at the same position.

CONCLUSION

We extend Field Theory from the viewpoint of enterprise competition by proposing “influence” as interaction between entities (enterprises, individuals, and environment); adding time dimension because of how soon does influence of an enterprise can really active and how long the “Field” that an enterprise can maintain being important issues about competition; adding space dimension since IT having broken the competition limitation of location. To distinguish our tree dimension thinking framework from “Field”, we use “Chang” to present our concept.

By using this framework to determine the organizational strategy should also consider several factors such as social capital, intelligent capital, executive ability, innovation, customer value, time and space, instead of merely focus on financial perspective or KPI. Meanwhile, with the generalization of the technological innovation, big data, internet of thing and mobile device, social science research and experiment become more immediately assessable and measurable. That is why it is time to use “Influence” as core dimension in our thinking framework. The critical success factor will be the ability of dominating technology and information system to maintain each step of enterprise current “Field”. In this case, OEM industry would loss its advantages and stay in a difficult position gradually. Applying the “Chang” as the thinking framework to explore the competitive advantages is similar to using the radar to search the critical factors circularly, relying on the feasible information system. Shortly, how to construct the information system with analytic influence and supporting decision making become the most essential issue.

There are lots of theories about management and strategy, providing the key factors and index. It is needed to execute those theories by applying the valuable “Chang”. Indeed, since there are such differences between the enterprises and individuals, the only way to find its own competitive advantages is conducting the “Chang” as the basic thinking framework. “Chang” is a method and route used to connect strategy, management, and customer value, and this route exists a set of intersection where includes the simple, communicative, and suitable thinking framework.

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