

The Study on the Convergence Business Model Case associated with the Supplier Structural Change

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ABSTRACT

The purpose of the convergence business model is to promote business activities to new markets and customers by taking advantage of the opportunities provided by technology convergence. This is appeared as the form of convergence technology capability enhancement at supply-side (businesses), and as the form shown in customer value creation at demand-side (customers). Convergence business models are required continuous innovation since, due to the nature of the business itself, it is difficult to stably maintain depending on the internal or external environment change. The purpose of this study is to look at the phenomenon of asymmetry between buyers and suppliers in existing industries through representative convergence cases, and find market expansion of the existing products and new customer's value by presenting convergence business model framework based on IT.

Keywords: Convergence, business model, customer, supplier, methodology, customer value

1. INTRODUCTION

While the technology and the industry have been through evolution into modern society, their sectorial boundaries also have been well-defined as they are becoming specialized and diverse. Recently convergence is attracting attention because it suggests that we can expect synergy effect such as solving complex social problem, technological innovation, new market value creation through lowering boundaries between academics, technologies, and industries by attempting convergence between industrial structures.

Convergence has been tried sporadically between technology and science in the past, however due to development of IT technologies, it could be further accelerated. When the convergence achieved with existing industry with IT oriented, existed industry value chain structure must be changed due to the convergence with IT [1]. Also, IT technology provides completely new method in the accessibility of consumers. New convergence business models, that are completely different with previous ones, can be implemented not only to increase value of users experience & user interface but also to broaden accessibility and choice for the customers.

Business model refers to a description of how to do business and convergence business models refers business activity and new businesses to create new markets / customers by taking advantage of the opportunities provided by convergence or convergence technology. This activity can be shown as capacity enhancement of convergence technology at the supply side, and as customer value creation at the demand side [2].

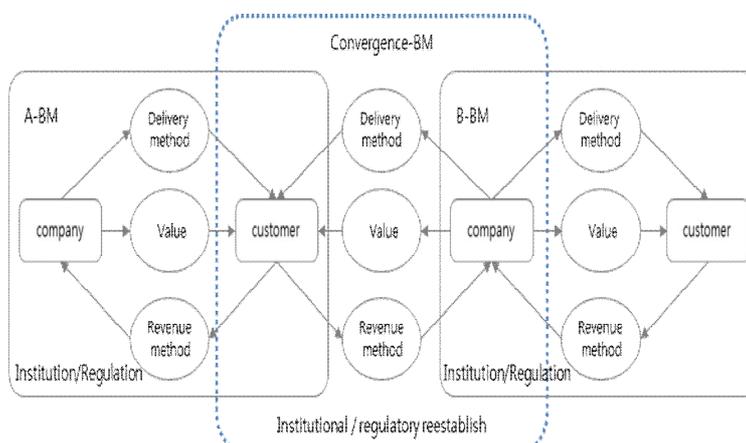


Figure 1 Convergence Business Model Concept [3]

Convergence creates a new business model from the traditional industrial systems. For the purpose of value creation, it can be developed into innovative convergence business models that are accommodating industry structure reorganization for the future.

The purpose of this study is to introduce sectorial examples of convergence industry and implement the convergence business model framework by analyzing the cases. In chapter 2, we will look at the existing research literature related to the aforementioned convergence business models, and in chapter 3, presents a business model practices for wellness, entertainment, monitoring and mobility. In chapter 4, we will present the convergence business model methodology proposed in this study based on the existing practices, and finally, in chapter 5, we will discuss steps to modify the methodology and directions for the future research.

2. THEORETICAL CONSIDERATION

As IT technologies are rapidly developed and value of customer needs has been diversified, an open corporate form has been evolved so that collaborative network linking around the enterprise and cooperation in order to expect synergy effect, instead single company take whole responsibility [4]-[6].

Kang et al. (2014) argues that rapid changes in ICT technology supports to reorganize and take advantage during creative innovation for immediate verification, correction, and supplement as necessary while demonstrating the user request service based on new idea much quickly and economically [5].

Kim (2009) argues that companies are increasingly expanding in open innovation due to environmental changes such as accelerated the convergence of technology areas that require collaboration, facilitation of communication between subjects in co-operation due to the development of the Internet and information and communication technologies, and the knowledge-based expending that expanded too much to control by single company alone. Especially open innovation is becoming the norm in telecommunications, internet, consumer goods, pharmaceutical, and chemical industries, he insists [7].

Also, Kim et al. (2012) argues that the value provided to customers changes to value composites (value complex) through organic interaction between the various enterprises by consumption with a wide range of services, products and technologies are combined and connected with each other [6].

Open corporate form is to implement a convergence business model that provides value that are blended and combined from wide range of services, products and technologies to customer through interaction between the companies affect each other, such as distributors, outsourcing companies, product manufacturers, technology providers, etc.

Considering provider-oriented business model in the past, development of IT technology brought a change with a new consumer-oriented business model which reflects the experience in using the services and products due to easier access to the final product. In the process of being collapsed or mitigated by asymmetrical information between consumer-providers, the structure changed that consumers are able to bypass the complicated steps and access directly to the suppliers [1]. Especially current users are accustomed to use various smart devices that are driven by IT infrastructure, so this trend accelerates further development in business model that has been changed. Associated with this phenomenon, user experience and user interface also become major factors in forming the convergence business model. In a way to deliver customer value, compare to the traditional model with unidirectional character, new business model needs to describe the structure of the strategic enterprise mush organically and comprehensively [4]. Eventually, the entire industrial structure represents a different look with the advent of the new entity and expansion of the network, because it alters the value chain in industry [1]. Also framework that derives the company's competitive strategies is reflecting the complex relationships between business factors since intra-industry value chain structure has been changed due to emergence of new subjects and expansion of the network.

Timmers (1998) addressed that a business model is not simply limited to static components but its flow (Sequence) between them is much important by dealing with "the product, the service, the flow of information" with higher attention [8]. Amit & Zott (2001), such as when researchers Afuah & Tucci (2001) were systematically approached on the relationship of business elements, including components of the business model, the relationship between them and carried out the subject and resources [9][10]. Kim (2011) presented his research results that stated the evolution of business models were possible through the combination between technology and the humanities and social science by incorporating design in the variety of technologies [11]. According to Chesbrough, he argues that the key to market success is whether that has any business model, not internal /outer technical source in the open technology innovation process [12].

Lee (2012) defined customer value (why), the value proposition (what), operational approach (how), the target market (whom), supply capability (who) by presenting 4W1H model, and drew value innovation, product innovation, operational innovation, market innovation, and capacity innovation as convergence BM, and then defined the design procedure of convergence type BM and BM strategic alternatives for typical convergence product type as the target. By the definition of interaction between the components of BM (i.e., behavioral characteristics), it was confirmed that BM may be associated with the business strategy as well [2].

3. CASE OF CONVERGENCE BUSINESS MODEL

3.1 Wellbeing Convergence Business Model

Passing the 21st Century, the dazzling medical technology such as human genome research and development, early genetic diagnosis and customized therapies were enabled, and U-Wellness has been evolving into a new industry through the convergence of IT technology and wellness / healthcare. Compare to the past health care which was the diseases-centered therapy, the trend is changing to maintain a healthy life through disease prevention and daily management in modern times. Various personalized healthcare services have been evolved and they are evolved into wellness convergence business model. In particular, IT technology has been able to provide self-directed healthcare service with emerging new mobile / wearable terminals and expansion of cloud-based Big Data deployment and its environment. Related services that support self-care behaviors in order to maintain and promote personal health and potential would be the lifestyle-related service and equipment business area for people excluded from the healthcare and chronic patients who are required life management after medical treatment. In the United States, they are focusing on building the healthcare system through integration of hospitals and private health care service in the private sector, and in Japan, it is a trend that self-centered healthcare services oriented market is expanding by using the handset in the private healthcare. In Korea, mainly it is promoted as public projects by government; however it is expected to be extended to active convergence business models in wellness sector that is based on constructing standards-based recording system of personal health-related lifestyle information with business model that can be paid in the private sector. As the business model of preventive wellness center, the personalized healthcare services would be possible by using analysis of diseases in accordance with the health screening, individual's biological signals, and the information extracted from the individual's clinical field diagnostic kit that held by existing hospital and Insurance Corporation. Currently products and services that measure glucose level and body fat to manage the readings as database are developing by several companies in Korea. Once institutional mechanisms associated with private diagnostic equipment is established and these services are activated, the increase in profitability is predicted.

3.2 Entertainment Convergence Business Model

In modern society, the tendency to seek personal happiness and quality of life is increasingly expanding in the value of individual. Quality entertainment and content consumption are increased and, downshift culture is spreading off dwelling on the social status and financial income, and the value of the consumer is moving in the direction to pursuing LOHAS. Also, as the content industries based on the creative idea have been emerged, it becomes necessary to try new & creative innovation to satisfy the consumer, and the content-oriented creative industries that can turn into unlimited consumer goods has been spotlighted as a promising industry. Especially, entertainment services are being expanded through smart media ecosystem and they have been developed as new convergence businesses. Growing interest in leisure activities and turning into the technology and information-driven society, entertainment areas has been recognized popular convergence business as high value-added industries. Related areas would be games, movies, sports, etc. in the existing 2D, 3D entertainment services that blended with IT, displays, holographic, augmented reality, H/W and S/W technologies. New entertainment services is providing personalized implement in virtual experience by bonding media and terminal device. 3D hologram is based on a technique for implementing a three-dimensional image can be seen in all directions. This helps to increase the attention of the audience on the content and enables the content production blended with performances and exhibitions by providing the user with a new type of visual experience [13][14]. Augmented Reality is a technique that allows for real-time interaction by combining real images and virtual images of the three-dimensional space [15], and it provides a projection gameplay, media facades, and augmented reality services.

3.3 Content Service (Monitoring) Convergence Business Model

Information system development technology has been expanded to ICT-based technologies, converging USN (Ubiquitous sensor network) sensor and communication technologies, and it has been implemented in the IT industry convergence services that have been applied with convergence, integration, intelligence in the overall area. In the case of intelligent video applications, the issue is a growing for market diversification, and this has been installed at security facilities such as ports, airports, and railways, mainly for the purpose of security. For security of important safety management facility and preparing disaster, 4G M2M-based, context-aware intelligent video storage and transmission system technology is being used. For social security area, following services are provided in order to prevent accidents caused by failure of safety by school vehicle driver; location information acquisition and analysis of the integrated mobile vehicle by utilizing mobile technology, real-time confirmation whether children are getting on and off and notification services for checking the remaining children after integration moving vehicle operation is terminated by utilizing Zigbee / LF wireless technology. In the environmental field, the trend is strengthen in environmental laws in worldwide as well as Korea, and for the corresponding regulations companies are rushing to build a clean production

environment and resources recycling-oriented society by investing for eco-friendly technological products and eco-friendly production technologies. Regarding this subject, network-based health monitoring industrial safety services are provided via development of smart metering device and smart gate device that blending with smart grid technology of power supply + IT, water supply + IT, and gas supply + IT. Also providing crime prevention service with active control to the track that is independent from the analysis depends on the existing personnel in order to prevent crime and reduce anxiety through establishment of the system that enables analyzing the image input to the camera via the intelligent video analysis system in real time and detect, trace and classify any objects in the motion.

3.4 Mobility Convergence Business Model

Mobility is associated with moving means, and provides smart mobility, traffic information, and interface service based on the IT technology. For road traffic safety and convenience, ensure connectivity via configuring the virtual network service platform between vehicles by utilizing the mobile network, and as this enables the exchange of information between vehicles, next-generation ITS services are available such as lane departure prevention of vehicle-self and collision protection, etc. Cloud services that are specialized in automobile are predicted by the new market area of the convergence between automobile - IT, and leading overseas automotive manufacturers and IT companies are in process of brisk investment and development for development of converged services between automobile - cloud. This idea can provide a business model that creates the user value by using personalized information related to vehicle operation based on technology of client terminal connectivity, operator interfaces, vehicle-specific data collection and transmission, receiving and providing services. Real-time navigation service, music service, automatic airbag deployment notification, S.O.S. emergency response, and theft tracking service, etc. would be available. Sharing information service that is using digital tachograph equipped in commercial vehicles as mandatory is a business model utilizing cloud infrastructure services.

4. CONVERGENCE BUSINESS MODEL FRAMEWORK

The asymmetry of information between buyers and suppliers was clearly distinguished in existing industry that was mainly providers-oriented market. As IT technology develops, providers and paths of the desired service information by the users has to be diversified. In the case of online services, configuring the supply chain is comprised of terminal providers, network providers, content providers, service providers, and these factors are formed in the value chain. This study is proposing a framework that reflects the changed aspect, and oriented with customer value creation for consumer and delivery method for provider as convergence business model framework. The structure of the framework presented in this study can be divided into five phases such as the terminal devices, cloud infrastructure, content providers, mobile operators, service providers, and supply chain can be constructed with technology companies and service providers corresponding to each steps. If the existing business model focused on revenue-generating activities from components such as value chain, marketing, business models, revenue diversification, convergence business models is a method of delivering customer value under the structure which can be derive the corporate value-generating element through the interaction between suppliers, which is fundamental change that is taking place. Users can be provided with variety of services by accessing to providers network consisting of step-by-step. Variety of business models were able to be derived by IT convergence technology, and changes in the existing system must be done in parallel in order to make sure this structural change is to become a successful model in the future.

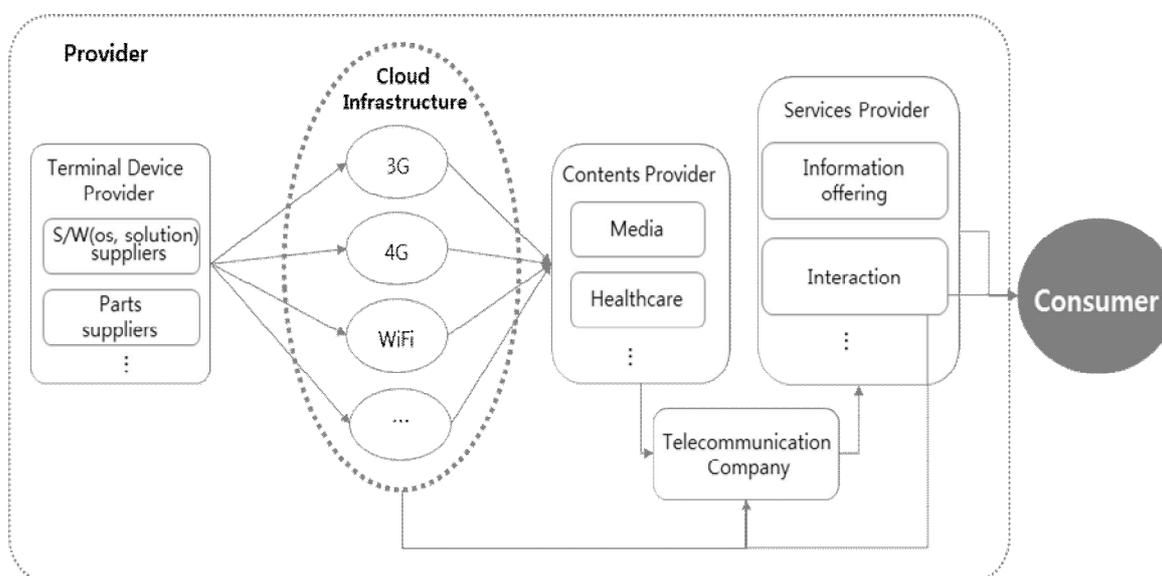


Figure 2 Convergence Business Model Framework (Provider-Consumer Service Flow)

5. CONCLUSION

Convergence industry already has been formed initial market, and now it is entering the contemplating stage how to provide efficient services. Variety of business services will be created, especially in perspective of service-oriented thinking [5]. With the advent of the fusion business model, possibility of reorganizing the industrial structure is very high, and new business models brought changes in behavior of major subject in industry since they are apart from the existing business model in value creation from new customer and method of delivery and revenue. The whole industrial structure has appeared in an entirely different look depending on the structure value chain within the industry from emergence of new agency and expansion of the network [1].

In order to meet the social needs and increase the value from the customer point of view, it is necessary to response for user requirements seasonably and import efficiency in terms of cost through configuring the beneficial open structure on the interaction and collaboration between the providers and implementing convergence business model by strategic combination. Limitation of this study is that the frame was constructed with customer value and delivery methods only among the factors that are comprise of the convergence business model. Later, multilateral and integrated approach is required through in-depth analysis of the factors that are comprise of the convergence business model, including configurations factors of existing business model. Also it will be needed to take a look at the case studies in various fields, in addition to the four areas, presented in this study, wellness, entertainment, monitoring and mobility in the case study. Finally, it is essential to consider active efforts to establish a strategic solution through a partnership structure between government departments to prevent the institutions and the regulations that commonly used in existing industry become to inhibitory factor against activation of convergence business in the process existing industry boundaries are collapse and newly reorganized.

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