A Study of Platform Business Model by Near Field Communication Technology

Fumihiko Isada

Abstract: It is difficult to create a successful new business just by developing a new product because of the immediate threat of global imitation and price competition. Therefore, this thesis considers differentiation via a more complete business model. Imitation becomes difficult when what differentiates one business from another is the entire business model. This thesis gives special consideration to the platform business model. This is a business model of the ecosystem type. In rapidly changing management environments, the most desirable strategy for a company to pursue is one that capitalizes on the strengths of various other companies while also concentrating on the company's own strength. The question arises, however, of how the platform business model is developed. A company does not merely begin offering products for sale. Various companies should be consulted, and win-win relationships must be developed. This thesis uses a case study to explore the success factors that are key to the development of new businesses via this type of business model. The innovation studied is Felica, a Japanese product made by Sony. In the Felica case study, the product was not sold as a single electronic part, and the platform business model was used. Network externality was essential, and innovation spread as a result. A corresponding framework for using the platform business model to succeed can be summarized using the following equation: "Openness" x "Integration capability" x "International standardization". It is thought that a new business's chances of success can be increased using the framework mentioned above.

1. INTRODUCTION

New business creation is indispensable to developing the economy. However, global competition and innovation often advance rapidly today. Therefore, it is becoming more difficult to succeed at creating a new business than in the past. It is difficult to create a successful new business just by developing a new product because of the immediate threat of global imitation and price competition. Therefore, this thesis considers differentiation via a more complete business model. Imitation becomes difficult when what differentiates one business from another is the entire business model. Sustainable superior profitability becomes possible when differentiation occurs in this way.

This thesis gives special consideration to the platform business model. In the platform business model, the company does not compete with other companies and uses niche segregation skillfully. A company may also develop in combination with various other companies. This is a business model of the ecosystem type. In rapidly changing management environments, the most desirable strategy for a company to pursue is one that capitalizes on the strengths of various other companies while also concentrating on its own strength.

The question arises, however, of how the platform business model is developed. A company does not merely begin offering products for sale. Various companies should be consulted, and win-win relationships must be developed. Advanced strategy becomes necessary. This thesis uses a case study to explore the success factors that are key to the development of new businesses via this type of business model. The innovation studied is Felica, a Japanese product made by Sony.

2. SURVEY OF THE PREVIOUS RESEARCH

2. 1 The Management Environment for Electronics Products

Nobeoka et al.（2006）analyze mechanisms of commoditization and isolate the three following factors.

（1）Product modularization
（2）The market for intermediate goods
（3）Customer value is hard to be increased.

Via a market for intermediate goods, anyone can procure a component from the market. A start-up can make a product that features equal functioning and quality. The market structure often encourages excessive competition. Ogawa（2009）points out that digital technology has made products modular. A European company and a company in a developing nation built international specialization structure, and the industry shifted from a vertical integration model to an open innovation model. Thus, a very large global market was formed.

2. 2 Platform-Type Business Model

New business creation always involves high uncertainty and a great deal of cost. However, resources can be shared via strategic alliances, which can also serve to distribute risk.

Therefore, the development and management capabilities of a strategic alliance are important conditions for success in a new business. According to Dyer et al.（1998）, in a strategic alliance, the capacity for knowledge-sharing, the ability to evaluate a partner, the creation and management of mutual particularization assets, and the ability to properly administrate business affairs are resources that confer competition advantage and that will be particularly important in the technology industry in the next generation. The mode of innovation creation also shifts from individual- and firm-specific innovation to open innovation through the network.（Chesbrough, 2003）

The platform business model uses this form of open innovation. In this model, the link between a supplier and a user is organizational capability, which is important for platform leadership（Gawer et al., 2001）. In other words, designing incentives for platform participation for other companies is important. Therefore, it is thought that keeping the platform open is important because it makes innovation easier to achieve. Openness allows access to more outside wisdom. It is necessary for the platform leader to internalize core technology that differentiates the company from others. However, peripheral technology is made widely available, and cooperation with complimentary firms is promoted. This allows firms to share management resources and knowledge that one firm or the other does not have. Also, the platform leader must have integration capability to promote innovation. The integration capability of the platform leader is its organizational capability, which creates new value by integrating various sources of outside knowledge. The platform leader does not simply gather products together. For example, it must create solutions for individuals and social problems via the cooperative efforts of various companies on the platform.

It is noteworthy that Rogers (2003) defines the spread of innovation as follows. It is a process through which a particular innovation is communicated over time between the members of a society system through a communication channel. In this way, Rogers develops an epidemiological model based on four main components: “innovation”, the “society system”, the “communication channel” and the “passage of time”. An innovation process is explained using a linear model (the technology push model). According to Mitsufuji (2007), innovation and the interaction between the social systems should be considered using a linear model as well. The coorganization model of the innovation process also provides another way of understanding innovation. In a series of innovation processes, the innovation evolves contemporarily with a social system. Therefore, there are many cases in which innovation does not spread because the proper relationships do not exist within the social system. This sort of relationship gap is called a chasm (Moore, 2005). The adoption of innovations becomes uncertain in this case.

There is a cognitive limit in adoption of the innovation. Expenses including time are needed for an innovation to be adopted. However, there is a risk that the innovation will not be available, and this cannot be predicted beforehand. It is thought that international standards are useful in encouraging various companies to adopt innovations, bridging the sort of chasms mentioned above. An international standard provides a global official guarantee regarding company standards. It reduces the uncertainty associated with innovation. In other words, international standardization works as a “catalyst function”, reducing the uncertainty in the innovation diffusion process. It breaks down barriers to innovation, promoting positive responses and thereby helping to spread innovation.

The following three factors are conceived of as a framework for a successful platform business model to succeed based on the previous literature.

(1) Openness of the platform
(2) Integration capability of platform leadership
(3) Strategic international standardization

3. CASE STUDY

Our case study examines Felica, a product by Sony. Sony is typically known to make finished products such as televisions or game consoles. It is a B2C type business model. However, in recent years, Sony has developed a unique business model around Felica. Felica is one of the communication technologies used for the non-contact chip cards developed by Sony. A Felica business is a B2B2C type business model. A non-contact IC card and the communication between the reader/writers are managed. The Felica technology was used for an IC ticket in public transport in 2001. As a result, Felica was then rapidly and widely adopted. The Felica technology is now utilized in various fields and is part of the social infrastructure of business today. For example, it is used in distributing electronic money, in credit cards, in member cards, and in reward card. Felica business moved into the black in 2007, and sales exceeded 100 billion yen. The total number of FelicaIC tips shipped reached 400 million in July of 2009. Felica is a superior example of the platform business model in action. The success factors involved can be verified based on the above-mentioned framework.

3. 1 Openness of the Platform

In a PCI（Patent Competency Index）showing the number of patents in the field of noncontact IC tags, Sony is shown to have submitted the most applications. Sony holds many high-quality patents. The PCI for Sony is particularly high in fields such as "high speed/promotion of efficiency" and "improvement of precision". The core technology associated with Felica is protected in these fields by high-quality patents. However, having a large number of patents does not guarantee success. If increases in trade cannot be anticipated, royalties will not accrue. However, it is a risk to open technology for market expansion. Sony defined the Felica tip and the Felica OS as the core of the business system for the basic Felica technology, and the company internalized these technologies in patents. On the other hand, the peripheral technology was made accessible to the public, and the other companies are licensed. Sony promotes the entry of other companies that hold complimentary technology by making periphery technology available. Thus, it is able to utilize management resources and knowledge that it does not have, reinforcing the technical base for Felica. Furthermore, Sony has ensured safety of communication via the Felica technology using various security technologies. This motivates service enterprises to adopt the innovation and increases the incentives for entry.

3. 2 Integration Capability of the Platform Leadership Company

In marketing Felica, Sony made the daring decision not to use the "Sony" brand but rather to establish a company called Felica Networks Inc. in cooperation with various service enterprises. Because Felica business was separated from Sony, other companies are very willing to participate. Felica Networks Inc. connects the Felica technology base and service enterprises in the Felica business system. The company has provided platform leadership, planning the creation of a new market by expanding the application. Sony can thereby concentrate its corporate resources on technology development for hardware and software. At the same time, companies with complimentary resources are given licenses that allow them to use the peripheral technology. This gives them access to the intellectual property covered by the relevant patents. This strategy promotes the entry of complimentary companies. Services enterprises such as those that supply electronic money apply to receive a service code from Felica Networks Inc. to use a common area in the Felica tip. Felica Networks Inc. controls the whole Felica business system by managing the common area. The company functions to bridge the gap between technology and services. Furthermore, the company fuses individual services to create new value. The company functions as a kind of coordinator. For example, an employee ID card was created that can also function as a transit service card, a gate access card and a card for making small payments. Further new services such as electronic coupons and digital signage are associated with the Felica platform. The company promotes the entry of new services while utilizing the knowledge of outside enterprises in this way.

3. 3　Strategic International Standardization

A WTO/TBT agreement took effect in 1995 that re-energized international trade and removed trade barriers. Thereafter, the technology that did conform to international standards was removed from the market, and international standardization strategy became more important in business. Felica conformed to the international standards for NFC（Near Field Communication）technology. NFC is a method of proximity communications that Sony and Philips Corporation jointly developed. The Felica technology was approved based on International Standard "ISO/IEC 18092" in 2004. The Felica technology spread a great deal thereafter, and was used in chip cars and electronic money. In the innovation diffusion process for Felica, interaction with the social system was important.

4. CONCLUSION

In the Felica case study, the product was not sold as a single electronic part, and the platform business model was used. Network externality was essential, and innovation spread as a result. A corresponding framework for using the platform business model to succeed can be summarized using the following equation:

"Openness" x "Integration capability" x "International standardization"

It is thought that a new business's chances of success can be increased using the framework described above.

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