A Framework for Combining Products and Services Based on Innovation Levels

Wataru TANA 1 and Masaru ISHIOKA 2

1 Graduate School of Symbiotic Systems Sciences, Fukushima University, Fukushima City, 960-1296, Japan
2 Faculty of Symbiotic Systems Sciences, Fukushima University, Fukushima City, 960-1296, Japan

Abstract: In recent years, a new trend in market offerings is to combine products and services instead of just products or services. Many companies have introduced this new type of market offerings, and innovate their traditional business models. Combining products with services can improve revenue structure, change the process of value-added creation and therefore take competitive advantages. However, combining products and services is not simply to sell products and at the same time provide some service. It is necessary for managers to change their minds, revise the business process and reconstruct companies’ organizations. There is no guarantee that all companies will succeed in combining products with services. This paper intends to provide some inspirations for the managers who are going to change market offerings by combining products with services. We propose a framework for combining products with services, which is based on the innovation levels of products and services respectively. We give more detailed descriptions about the proposed framework, and examine how to realize adjacent innovation and transforming innovation in market offerings. The proposed framework can help companies to develop market offerings with combination of products and services, or plan differentiation strategy by services.

Key Words: Service Management, Service-Dominant Logic, Market Offerings, Combination of Products and Services, Innovation Management

1. Introduction

1.1 Research Background

In recent years, a new trend in market offerings is to combine products and services instead of just products or services. Through introducing this new type of market offerings, many companies have been able to innovate their traditional business models, and brought a number of economic benefits for both the companies and their customers.

The trend of combining products with services has given big impact on existing competition strategies. Combining products with services can not only provide new methods to improve existing revenue structure, but also change the process of benefits creation. Meanwhile, it can lead to the innovation of companies’ organization and enterprise culture, and therefore improve companies’ quality of products/services. Moreover, it has some potentials for companies to develop new profit centers or new customer experiences.

In order to take more effective competitive advantages, many companies have realized the importance of this new type of market offerings. However, combining products and services is not simply to sell products and at the same time provide some services. There is no guarantee that all companies will succeed in implementing this new market offerings. In particularly, as traditional management considers that the value-added is embodied in products, traditional management considerations are no longer suitable to develop market offerings with combination of products and services. In order to increase value-added, traditional companies should make continuous efforts to develop products that can attract customers. It is necessary for these companies to constantly develop new technologies and high quality products, increase the variety of products, and also decide reasonable prices for the products. For these companies, production technologies, variety and quality of products, product prices or market strategy are the major competitive factors.

However, the concept of market offerings with combination of products and services differs from the concept of traditional management. In the market offerings with combination of products and services, the basic concept is that value-added is created when customers use products or services. Services can not only enhance the effect of products, but also provide new benefits to both companies and customers. The companies, that provides market offerings with combination of products and services, place much importance on supporting customers’ value creation process through their services.

The relationship between companies and customers is very simple in traditional management; companies exchange their products for customers’ payment. Meanwhile, the traditional market offerings also provide services to support customers’ value-added creating through using products. In contrast, the market offerings with combination of products and services usually needs to grow more complicated relationship with customers. More importantly, it is necessary for managers to change their minds, revise the business process and reconstruct companies’ organizations.

Corresponding Author: Wataru Tana
Graduate School of Symbiotic Systems Sciences, Fukushima University, Kanayagawa No.1, Fukushima, Japan
s1371006@ipc.fukushima-u.ac.jp
(Received April 9, 2017)
(Revised August 23, 2018)
(Accepted January 20, 2019)
1.2 Aim and Contribution of This Research

Many companies have developed market offerings with combination of products and services, a number of successful practices have been reported. Meanwhile, researchers have also paid much attention to the theoretical framework of effectively combining products with services. However, there is few literature addressing this subject. On the other hand, many companies are struggling to develop successfully market offerings with combination of products and services. Because there is no universal and immutable approach to combine products effectively and efficiently with services, it is necessary to take into account the diversity of products and services, and formulate combining strategies suited to the companies’ features.

This paper intends to provide some inspirations for the managers who are going to innovate market offerings by combining products with services. We propose a framework for combining products with services, and make the following contributions:

1. As most of the researches classify products as tangible goods and intangible ones, we reclassify both products and services according to the level of innovation.
2. Based on the new classification of products and services, we propose a combination matrix for combining effectively products with services, which consists of nine types of combination of products and services.
3. We give more detailed descriptions about the proposed framework, and examine how to realize adjacent innovation and transforming innovation in market offerings. As the result, we show how the framework can help companies and managers to develop market offerings with combination of products and services, or plan differentiation strategy by services.

The remainder of this paper is organized as follows. Section 2 introduces briefly the definitions and category of products and services, and describe the previous researches on the level of innovation. Then section 3 describes the reclassification of both products and services according to the level of innovation, and propose a framework for combining effectively products with services. Section 4 and section 5 give more detailed descriptions about the proposed framework, and show how to realize adjacent innovation and transforming innovation. The last section gives some concluding remarks.

2. Literature Review
2.1 Products and Services

Company provides some products and services to their customers. These products and services are widely known as market offerings. In order to consider how to combine effectively products and services, the relationship between products and services in market offerings should be clarified. Mostly, manufacturing business provides mainly products with some services, and service business provides mainly services with some products.

Kotler [1] argued that there are five types of market offerings, they have differences in the level of mixing products and services into the market offerings. These five types of market offerings are:

1. Pure tangible goods: this type of market offerings provide only products to customers, and do not provide services to customers. Typical examples of pure tangible goods are salt, detergent, and paper cup.
2. Tangible goods with accompanying services: this type of market offerings provide mainly products with services. For example, showrooms, home-delivery services, repairing service, maintenance, and installation services are considered as the accompanying services in this type of market offerings.
3. Hybrids (goods and services): "Hybrids" indicates organized with both products and services in equal proportion. For example, formal restaurants are considered as the hybrid type of market offerings.
4. Major services with accompanying minor goods and services: this type of market offerings provide mainly services with supportive products for main services. For example, major services with accompanying minor goods and services are air transport and movie theater.
5. Pure services: consulting and educations are typical examples of pure services.

2.2 Category of Services

The term of "services" includes wide range of implication. In order to understand services in detail, the definition of services should be clearly identified.

Wirtz, et al.[2] and Kondo [3] described the composition of services. They define the core service as fundamental element of service business. The core service provides main benefit of the market offerings. Main benefit satisfies customers’ basic demands in market offerings.

Wirtz, et al.[2] proposed a representation of the compositions of service, known as the flower of service and shown in Fig. 1. The flower of service indicates that supplementary services differ from core services and supplementary services attach on core services.

Supplementary services hold two roles. The first role is facilitating supplementary services. This type of services is necessary services to delivery core services. Usually, it includes four types of services: information, order taking, billing, and payment.
The second role is enhancing supplementary services. This type of services is necessary services to adding extra value and appealing for customers. Also, it includes four services: consultation, hospitality, safekeeping, and exceptions.

Kondo [3] defines also sub services that differ from core services and supplementary services. Sub services provide secondly additional benefit of the market offerings.

2.3 Level of Innovation

Nagji and Tuff [4] have proposed an innovation ambition matrix, as shown in Fig. 2. The innovation ambition matrix is defined by the novelty of a company’s offerings and the novelty of customer markets. In this matrix, three levels of innovation are indicated through the distance from the company’s current position at the bottom-left of the matrix. The three levels are core innovation, adjacent innovation, and transformational innovation.

![Innovation Ambition Matrix](image)

Fig. 2 Nagji and Tuff’s Innovation Ambition Matrix [4]

As core innovation is the result of incremental changes to existing products, it is necessary for companies to make continuous efforts to new packaging, slight changes of products, or added service convenience for reaching core innovations.

Transformational innovation aims at creating new offerings to serve new markets and customers’ demands. Because it is the innovation making whole new business successfully, transformational innovation is also called as breakthrough, disruptive, or game changing. This innovation requires unfamiliar assets to the companies. Usually, companies need to develop more customers’ trust by customer relationship management (CRM) in the early stage of the product introduction stage.

Adjacent innovation has characteristics of both core innovations and transformational innovations. The adjacent innovation helps for leading the company into a new competitiveness. It utilizes companies’ existing capabilities, and these capabilities are existed for creating the new usage. The adjacent innovation needs to make great efforts for dominant insight into customers’ demands, demand trends, market structure, competitive dynamics, technology trends, and other market variables.

2.4 Value-in-Use

The service-dominant logic, proposed by Vargo and Lusch [5],[6], considers services as the core of marketing offerings. Products are considered as a part of services. The service-dominant logic considers comprehensively products and services as the method of providing value. The critical service logic, described by Gronroos and Voima [7], can be considered based on the service-dominant logic.

The service-dominant logic suggests new vision for value creation. In traditional management, value is created by companies as products, and this value is consumed by customers. Because of this, traditional management considers providers’ value and consumers’ value separately.

However, as the basic concept of the service-dominant logic and the critical service logic, value is created by customers. That is, value is created when customers consume the products/services. Companies supports customers’ value creation process by providing theirs products/services. This is the concept of value-in-use. Value-in-use is also defined as the real value. The real value is the type of benefit which are received by customers when customers consume products/services. Companies need to enhance more value-in-use to supporting customers’ value creation process.

3. Framework for Combining Products and Services

3.1 Innovation Levels of Products

According to the innovation ambition matrix described by Nagji and Tuff [4], companies need to achieve adjacent innovation or transformational innovation to break away from existing market competition and business model. Because there is no specific way to achieve these innovations, we examine the concrete realization method of these innovations by adapting the concept of the innovation ambition matrix to the components of market offerings.

Market offerings are some products and some services. Products include all physical goods in market offerings. Products can be divided into main products, consumable goods, accessories for main products, explanatory leaflet, and packaging. In order to classify products according innovation level, we define three innovation levels of products in market offerings, as shown in table 1. Although the innovation ambition matrix has showed three innovation level: core innovation, adjacent innovation, and transformational innovation, in this research, we adapted the definition of the innovation level to products, and reclassify products as improved product, adjacent product, and transformational product.

![Table 1](image)

Table 1 The Innovation Levels of Products

| The Innovation Levels of Products | Improved Product | Adjacent Product | Transformational Product |
|-----------------------------------|------------------|-----------------|-------------------------|

The improved products are obtained through core innovations of existing products. That is, the improved products are the result of incremental improvement to existing products of market offerings. Typical examples of incremental improvements include continuous quality improvements, applying new color, redesigning new package. Improved products satisfy minimum demands of existing customers.

The adjacent products are obtained through that companies carry new developing policy to their existing products of market offerings. This new policy covers a wide range, such as adding new functions to provide new benefits, enhancing diversification of existing technologies to adapt to other industries. The adjacent products vary based on existing products, tech-
ologies, and assets. The adjacent products are the results of shifting existing products, expanding existing market, or getting into other industry market.

The transformational products are new products that can not obtained through continuous improvement of existing market offerings. The transformational products satisfy new customer demands, create new businesses and/or new markets, and can change existing competition styles. As the result, transformational product can lead to innovations in existing business models.

### 3.2 Innovation Levels of Services

The innovation levels of services in market offerings are also related with the innovation levels of products. The services in market offerings include core services, supplementary services, and sub services. Here, we defined the innovation levels of services as improved service, adjacent service, and transformational service, shown in the following table 2.

| The Innovation Levels of Services | Improved Service | Adjacent Service | Transformational Service |
|-----------------------------------|------------------|------------------|-------------------------|

The improved services are existing services that have been obtained through core innovations. The improved services are the result of incremental improvement to existing services of market offerings. Improved services create different core services. Core services are defined as the main services in the market offerings. Typical examples of the improved services include continual quality improvement, improvement of existing after-sale services, and/or providing useful purchasing method.

The adjacent services are realized through that companies carry new developing policy to existing services of the market offerings, such as adding new after-sales services, maximizing of supplementary services or sub services, and/or diversion of existing services for other industries. The adjacent services vary usually based on existing services, service systems, and assets.

The transformational services are the result of innovative changes in existing services of market offerings. The transformational services satisfy new customers’ demands, create new business or new market, and/or change existing competition.

### 3.3 Combination Matrix of Products and Services

Taking the three levels of services shown in table 2 as the horizontal axis, and the three levels of products shown in table 1 as the vertical axis, we can define the combination matrix of products and services according to the innovation level of products and services respectively. As shown in Fig. 3, this combination matrix suggests two innovation levels of market offerings: adjacent innovation and transformational innovation, and nine types of combination of products and services.

| Transformati onal Product | Type 5 | Type 6 | Type 7 |
|---------------------------|--------|--------|--------|
| Adjacent Product          | Type 2 | Type 3 | Type 8 |
| Improved product          | Type 1 | Type 4 | Type 9 |

This matrix shows the growth directions for that companies should improve their existing market offerings. Among the nine types of combination of products and services, the combination of type 1 means combining improved products and improved services. It represents existing market offerings that existing products and existing services are improved incrementally. In order to innovate market offerings, companies need to rise the innovation level of products or/and services up into adjacent innovation or transformational innovation.

The combination matrix shown in Fig. 3 gives a new viewpoint to consider how to combine effectively products with services. According to this matrix, the companies that are struggling to innovate their market offerings can clarify their own positioning, and decide the next target or innovation level of market offerings that is most suitable to their products and services. Then, they can formulate the most efficient strategies to innovate their market offerings through products innovation or/services innovation.

### 4. Adjacent Innovation of Market Offerings

#### 4.1 Combination of Adjacent Product and Improved Service (Type 2)

The combination matrix of products and services suggests two innovation levels of market offerings. The lower one is adjacent innovation. The adjacent innovation means addition of new products or services into existing market offerings, and also development of new product or service for getting into other industry. The characteristics of adjacent innovation are radical changes. Therefore, the effects of adjacent innovation include shifting new product/service from existing product/service, and technology diversification of existing product/service to other industry. The previous section clarified products and services for adjacent innovation.

Among the nine types of combination of products and services, there are three of them that can be considered as effective methods to develop adjacent innovations of market offerings. These three types of combination include combining adjacent product and improved service (type 2), combining adjacent product and adjacent service (type 3), and combining improved product and adjacent service (type 4). Combination of adjacent product and improved service (type 2) means that radical changes occur only in products. The services improvement is achieved by incremental methods. For example, combined form type 2 is robot vacuum cleaner, and drone aerial.

The changes of this type of combination develop new product part which shifts to the existing products. For example, higher levels of improvement of fundamental functions or packaging are achieved by developing new function for providing new benefit. And, the changes of this combined form are applied for existing technology of existing products for other industry. So, this combined form involves continuous innovation of prod-
ucts. In other words, combined form of adjacent product and improved service are defined as product innovation in adjacent level.

4.2 Combination of Adjacent Product and Adjacent Service (Type 3)

The combination of type 3 is combining adjacent product and adjacent service. It relates with both products and services. This combination requires the changes of products and services for providing benefit to the customer. The examples of this type of combination includes video streaming services, electric vehicles and power supply services.

The combination of type 3 can be implemented through applying the latest information network technology or the latest IoT technology. For example, in order to increase benefits of existing products, many companies have developed new after-sales services through open network systems. Some of them have developed revolutionary new sales systems. Meanwhile, existing products can be improved by adding sensing elements, connecting to internet. These changes are expected to enhance the customers’ value-in-use. Furthermore, some companies have developed new sales systems that aim at reducing the customers’ purchasing cost. Applying these new sales systems, the companies are able to take profits through products usage by customers, instead of simply exchanging products to money as in traditional sales systems.

4.3 Combination of Improved Product and Adjacent Service (Type 4)

The combination of type 4 indicates combining improved products and adjacent services. This type of combination means that radical changes occur only in services, and products are improved incrementally. As the example of the combination of type 4, there are electronic money payments, and shifting business from distribution of tangible goods to leasing service of tangible goods.

This type of combination needs to radically improve existing services or develop new services. As companies’ existing services are usually classified into core services, supplementary services, and sub services. This combination of type 4 involves radical improvement of each category of services. Radical improvement of core service and sub services means that companies need to change quality of services radically so that the fundamental benefits to customers could be enhanced. Radical improvement of supplementary services includes developing new convenient purchasing methods, and developing new relationship between companies and customers. Moreover, this combination involves adding new services to existing business. As the result, combining improved products with adjacent services lead to innovating market offerings up to the adjacent level.

Among the three methods for realizing adjacent innovation described above, the main approach is to improve existing core products or core services remarkably, and adapt them to new customer segments. In addition to this, there are also more options for adjacent innovation through remarkable improvements and new developments of supplementary products and services, as well as sub products and services.

5. Transformational Innovation of Market Offerings

5.1 Combination of Transformational Product and Improved Service (Type 5)

Transformational innovations means creating new business. It needs to design new methods of benefits creating for existing customers or creating new benefit that satisfies new customers’ demands. The impact of transformational innovations is very large and this innovation usually involves breakthrough, disruptive, or game changing.

Five types of combination of products and services can be considered as the methods of developing transformational innovation of market offerings. These five types of combination include combining transformational product and improved service (type 5), combining transformational product and adjacent service (type 6), combining transformational product and transformational service (type 7), combining adjacent product and transformational service (type 8), and combining improved product and transformational service (type 9).

The combination of type 5 is combining transformational products with improved services. This type of combination in market offerings means that innovation occurs only in products while services are improved incrementally.

This type of combination needs to develop innovative products to satisfy new customers’ demands. The development of new products lead to development of new markets. Meanwhile, the services in this type of combination remain as traditional supplementary services or traditional after-sales services. As the development of innovative products can create new benefits for customers, the combination of type 5 is able to innovate market offerings up to the transformational level.

5.2 Combination of Improved Product and Transformational Service (Type 9)

The combination of type 9 is combining improved products and transformational services. This means that innovative changes occur only in services, while products are improved incrementally.

This type of combination needs to develop innovative services to satisfy customers’ new demands. The development of new services means exploring new markets. Meanwhile, products remain as traditional physical goods and which necessary service are also provided. As the novelty of this type of combination is to create new benefits through only innovative services, it is necessary to shift main business from products to services. When sub services or after-sales services are innovatively changed, these services can become profit center as main business. Therefore, combining improved products and transformational services can lead to innovation of market offerings up to the transformational level.

5.3 Combination of Transformational Product and Transformational Service (Type 7)

The combination of type 7 is combining transformational products and transformational services. It means that innovative changes occur in both products and services.

This type of combination needs to develop new methods to provide existing benefit, and satisfy new customers’ demands through innovative products and services. When the benefit of existing products or services is provided through new methods, the purchasing cost of customers can be reduced. The re-
duction of purchasing costs could result in creating new customers. Meanwhile, this type of combination also intends to make customers change their lifestyles. The change of customers' lifestyles can create new benefit that usually represent the value-in-use in market offerings. Furthermore, this type of combination involves developing innovative products and innovative services to satisfy customers’ new demands.

5.4 Combination of Transformational Product and Adjacent Service (Type 6)

The combination of type 6 indicates combining transformational products and adjacent services. It means that innovative changes occur in products with services. The combination level is between the combination of type 5 and the combination of type 7. Therefore, this type of combination has characteristics of both type 5 and type 7. The major changes of this type of combination occur in products. Meanwhile, radical changes of services are also necessary to satisfy new customers’ demands.

5.5 Combination of Adjacent Product and Transformational Service (Type 8)

The combination of type 8 is combining adjacent products and transformational services. It means that companies should innovatively change services as well as products. As it is located between the combination of type 7 and the combination of type 9, therefore, this type of combination has many of the same characteristics as the two types of combination. The major changes of this type of combination are changes of services. Meanwhile, radical changes of products are also necessary to satisfy new customers’ demands.

The five types of combination of products and services described above provide the methods for realizing transformational innovation. The main approach to transformational innovation is developing new core products or core services that have better performance or functions than existing products and services. It is also important to develop new products and services that provide customers with new and unprecedented benefits. Except for core products and services, there are also more options to consider supplementary products and services, and sub products and services. On the whole, if companies can examine all components of market offerings overall, they can expect to reduce the uncertainty of transformational innovation.

6. Summary

This paper intended to provide some inspirations or hint for companies that are going to change market offerings by combining products with services, and proposed a framework for effectively combining products with services. The main results of this study can be summarized as the following:

1. We reclassified both products and services according to the level of innovation. As the results, products are classified into improved products, adjacent products, and transformational products. Services are divided into improved services, adjacent services, and transformational services.

2. Based on the three innovation levels of products and services, we proposed a combination matrix for combining effectively products with services, which consists of nine types of combination products with services, and indicates two innovation levels of market offerings: adjacent innovation and transforming innovation.

3. We examined realizing methods of adjacent innovation. The adjacent innovation in market offerings needs to change existing products/services into new ones, and enhance diversity of existing products/services so that they could be used in other industries. There are three types of combination of products and services that can be applied as the methods of creating adjacent innovation of market offerings.

4. We further examined realizing methods of transforming innovation. The transformational innovation in market offerings involves breakthrough, disruptive, or game changing. There are five types of combination of products and services that can be applied as the methods of creating transforming innovation of market offerings.

The proposed framework provides a new viewpoint to consider how to combine effectively products with services. According to the combination matrix, the companies that are struggling to innovate their market offerings can clarify their own positioning, and decide the next target or innovation level of market offerings that is most suitable to their products and services. Then, they can formulate the most efficient strategies to innovate their market offerings through products innovation and/or services innovation.

References

[1] Kotler, P. and Keller, K. L. (2016): "Marketing Management, 15th Edition." Englewood Cliffs, NJ: Peason Education Inc. Ch.13 (pp.367-370).
[2] Wirtz, J., Chew, P. and Lovelock, C. (2012): "Essentials of Service Marketing, 2nd Edition." Pearson Education. Ch.1 (pp.13-15), Ch.4 (pp.98-106).
[3] Kondo, T. (2010): "Sa-bisu ma-ketexingu: sa-bisusyouhin no kaihutu to kokyakukati no souzou (Service Marketing: Service Development and Creation of Customer Value), 2nd Edition." Tokyo, Japan Productivity center (The Japanese Publication). Ch.8 (127-135).
[4] Nagji, B. and Tuff, G. (2012): "Managing Your Innovation Portfolio." Harvard Business Review, Harvard Business Publishing, May, 2012.
[5] Vargo, S. L. and Lusch, R. F. (2004): "Evolving to a New Dominant Logic for Marketing.” Journal of Marketing, 68 (1), pp.1-17.
[6] Vargo, S. L. and Lusch, R. F. (2008): "Service-dominant logic: continuing the evolution.” Academy of Marketing Science, 36 (1), pp.1-10.
[7] Gronroos, C. and Voima, P. (2013): "Critical service logic: making sense of value creation and co-creation.” Journal of the Academy Marketing Science, 41, pp.133-150.

Wataru Tanaka

is currently in the Doctoral program of Symbiotic Systems Sciences at Fukushima University. He received his B.Sc. and M.Sc. degrees from Symbiotic Systems Sciences at Fukushima University. His research interests include service science and management. His research results are found in the international journals and proceedings of several international conferences.
Masaru Ishioka

is professor in technology and innovation management at Department of Symbiotic Systems Science, Fukushima University, Japan. He teaches product and technology innovation strategy, and marketing strategy. He received his Ph.D. in Business Administration with a concentration of Marketing, and his M.Sc. in Engineering Management from University of Tennessee. He holds B.Engr. in Applied Physics. Recent research activities have focused on the major three areas, product development strategy, innovation strategy, and management of technology.