# Organization and Strategy of Ecosystem for Value Co-creation

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**Abstract**

Recently, product life cycle is shorter and customer needs become more diverse. Many companies have to manufacture new products more promptly because many companies could not acquire customers with only one series of products. Because, it needs to introduce products one after another to the market. In addition, in order to correspond to customer needs, the necessary knowledge of companies becomes wider and deeper. In other words, it is difficult to create new value with sustainably. This research focuses on "Value co-creation" and "Ecosystem", and considers ecosystem included users in order to correspond to these problems. This research presents models of ecosystem included both companies and users, and considers methods to create new value.

*Keywords: Value co-creation, open innovation, ecosystem, innovation strategy, organization management*

## 1. Introduction

Recently, value creation is getting difficult because product life cycle is shorter and customer needs become more diverse. In other words, current value creation method (Closed Innovation) is difficult to create new value. This research focuses on value co-creation, open innovation and ecosystem included not only companies but also users. In addition, this research presents ecosystem models and considers methods to create new value.

## 2. Literature Review

### 2.1 Value Co-creation

Value co-creation is that companies create new value in cooperation with various stakeholders. Customers do not only consume products and services but also create new value with companies. Dialog, access, risk-benefits and transparency are important elements for value co-creation (Prahalad & Ramaswamy, 2004). In value co-creation, companies accept the value that is not products and services themselves but usage and experience. In other words, companies need to set up a place of experience for customers.

Companies have become able to communicate with customers because of the widespread internet and development of IoT (Internet of Things). Due to popularization of the internet, it is easier to provide places from companies to customers by social media. Due to development of IoT, monitoring customer's product/service usage situation and external environment become possible. Companies have become able to communicate with customers more detailed.

### 2.2 Value Creation Method

There are two methods of value creation, closed innovation and open innovation (Chesbrouth, 2003).

Closed innovation is vertically integrated type of value creation method, which only carries out from basic research of products and services to product development. There is no inflow and outflow of knowledge and technology. In other words, Knowledge and technology do not leak to the outside and it has the advantage of being able to become black box. However, closed innovation is not able to respond the market needs because there is no inflow of them. Therefore, it is difficult to provide new value to customers (Figure 1).

Open innovation is value creation method of utilizing knowledge, technology, and human resources from outside of the existing network. In order to respond to changes in the market in recent years, utilization knowledge and technology from the outside become possible by open innovation. Moreover, companies are able to introduce products and services to new markets (Figure 1).

The conceptual models of closed innovation and open innovation are very similar. The method of this Open innovation model is linear and utilization knowledge, technology from the outside. It is the value creation method through collaboration. Open innovation 2.0 was presented as a new value creation method. It is not value creation method through collaboration but mutual organic value creation method cen-

tering on ecosystem (Curley & Salmelin, 2013). As with open innovation, open innovation 2.0 introduces knowledge and technology from the outside; however, it is not only companies and universities, but also consumers, municipalities and governments (Figure2).

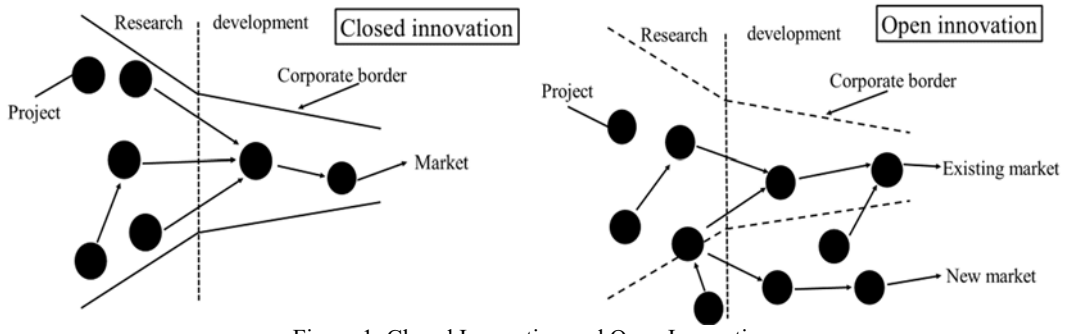


Figure 1: Closed Innovation and Open Innovation
(Created by the author based on Chesbrough (2003))

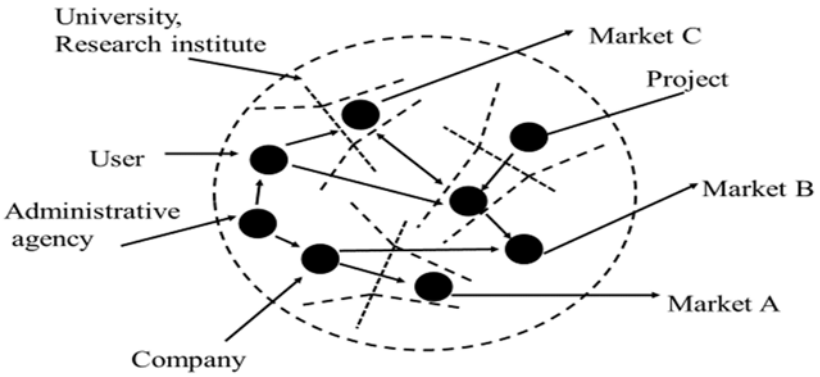


Figure 2: Open Innovation 2.0
(Created by the author based on Curley & Salmelin (2013))

### 2.3 Ecosystem

It was expressed as an analogy of ecology with the idea of integrating organization and environment (Moore, 1993). In recent research, the idea of network and platform introduced the ecosystem (Iansiti & Levien, 2004) and the concept of a focal firm and a complementor was proposed within the ecosystem (Adner & Kapoor, 2010). Complementor provides external products and services that establish business. The concept of ecosystem has been adopted for many researches. However, the concept of the ecosystem differs depending on researchers and is not clear (Yokozawa, 2013).

## 3. Discussion

Co-production is that companies and customers share problems and both create new value to solve problems. The concept of co-production is similar to collaboration. In other word, co-production is the concept of open innovation 1.0. Otherwise, co-creation is that companies and customers discover problems and both create new value while doing communication. In other word, co-creation is the concept of open innovation 2.0. In this research, use the concept of co-creation because of resembling the concept of open innovation 2.0.

### 3.1 Definition of Ecosystem Used in this Research

The concept of the ecosystem is not clearly defined. Therefore, definition of ecosystem used in this research is introduced. In this research, based on Adner's concept of a focal firm and a complementor is proposed within the ecosystem. Focal firm rename organizer because not only companies but also municipalities, government, and universities can organize ecosystem by the concept of open innovation 2.0. Moreover, ecosystem includes not only companies but also user by the concept of value co-creation. In other word, organizer, complementor, and user exist in ecosystem and communicate mutually in order to co-create value.

### 3.2 Value co-creation between Organizer and User

Organizer communicates with user mutually. This is value co-creation between organizer and user (Figure 3). Organizer is able to understand accurate customer needs and provide further services and solutions. User is able to provide user's information and ideas through IoT and social media. User is able to be satisfied because it is reflected in products and ser-

vices. Moreover, Organizer adds use and experience Value to products and services by value co-creation.

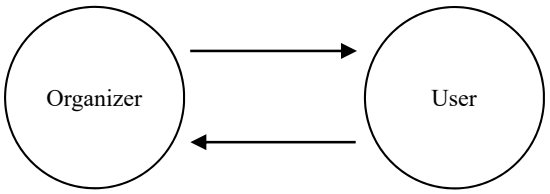


Figure 3: Value Co-creation between Organizer and User

### 3.3 Complementary Utilization Model

In order to respond to needs that are not able to respond, organizer starts communicating with complementor (Figure 4). Organizer is able to provide products and services which are not able to be realized by complementary. User is more satisfied than value co-creation between organizer and user because organizer is able to provide new products and services. However, organizer does not communicate with complementor mutually. In other words, organizer only utilizes complementary products and services. Organizer provides new services and solutions by complementary utilization. Moreover, Organizer adds usage and experience Value to products and services by value co-creation.

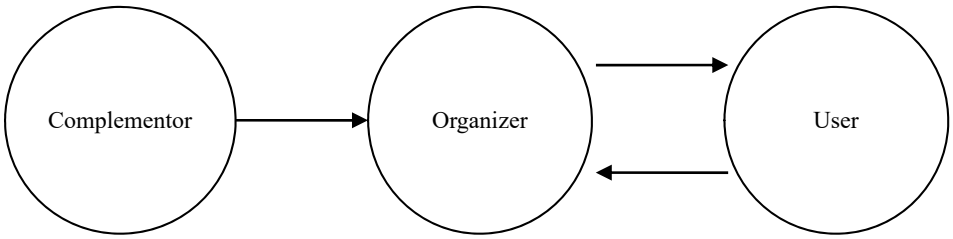


Figure 4: Complementary Utilization Model

### 3.4 Unidirectional Complementary Supply Model

Organizer starts communicating with complementor mutually (Figure 5). Complementor is able to acquire user because of co-creation with organizer. Organizer is able to provide new services and solutions by co-creation with complementor. User is more satisfied than value co-creation because organizer provides new products and services. Moreover, as the number of complementor increases, effects of network become strong. When effects of network become strong, organizer is able to improve the value of products and services. In addition, Organizer provides experience value with user by value co-creation. However, complementor does not communicate with user.

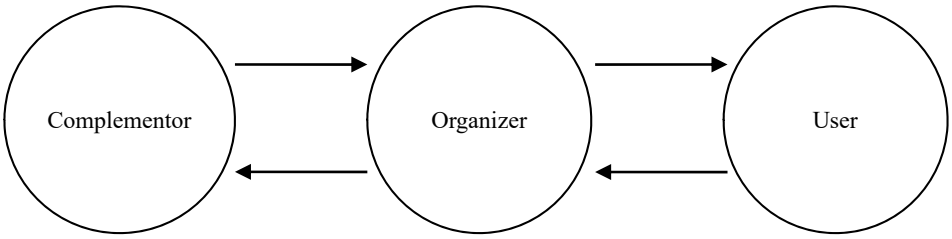


Figure 5: Unidirectional Complementary Supply Model

### 3.5 Bidirectional Complementary Supply Model

Complementor starts communicating with user mutually (Figure 6). This communication becomes directly. Organizer is able to provide new services and solutions by co-creation with complementor. Complementor can not only acquire user because of co-creation with organizer but also provide services and solutions to user. In other words, Organizer and complementor provide services and solutions to user. Therefore, User is more satisfied. Moreover, as the number of complementor increases, effects of network become strong. When effects of network become strong, organizer is able to improve the value of products and services. In addition, Organizer and complementor provide experience value with user by value co-creation.

### 3.6 Complementor and User Integration Model

User provides complementary to organizer (Figure 7). User provides idea and information of user to organizer. Organizer is able to reflect needs of user directly and add use and experience value to products and services by value co-creation. Therefore, user is more satisfied.

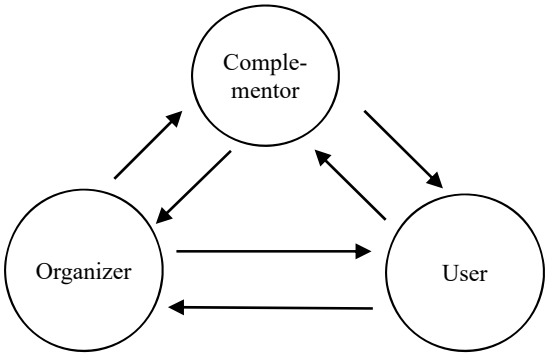


Figure 6: Bidirectional Complementary Supply Model

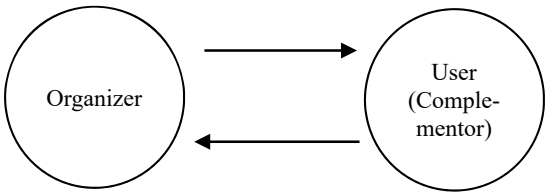


Figure 7: Complementor and User Integration Model

### 3.7. Value Creation with Ecosystem

When companies use ecosystem, communication becomes more active. Moreover, ecosystem is able to co-create value. Recently, companies only sell products and services. However, companies are able to provide value of use and experience with ecosystem.

Ecosystem included user is not only able to utilize knowledge, technology from outside the existing network but also is able to utilize information and ideas that users have. Therefore, ecosystem included user is able to provide new value to customers.

Growth of the industry with ecosystem and increasing participants in the ecosystem is expected (2017, Tatsumoto). By increasing the number of participants in the ecosystem, the effects of network is strong. Companies are able to add new value to products and services.

## 4. Case Study

### 4.1 Complementary Utilization Model

In order to respond to needs that are not able to respond, organizer is needed for complementor. Organizer is able to provide products and services which are not able to be realized by complementary. This model case can be adapted to KOMTRAX (Komatsu) (Figure 8). Organizer is Komatsu and complementor is NTT Docomo. Komatsu is able to obtain usage status and positional information of user's heavy machinery because Komatsu utilize NTT Docomo's communications network. In the other word, Komatsu is able to provide new services for user. Therefore, KOMTRAX (Komatsu) classified into is complementary utilization model because Komatsu is able to provide new services and solutions by complementary utilization.

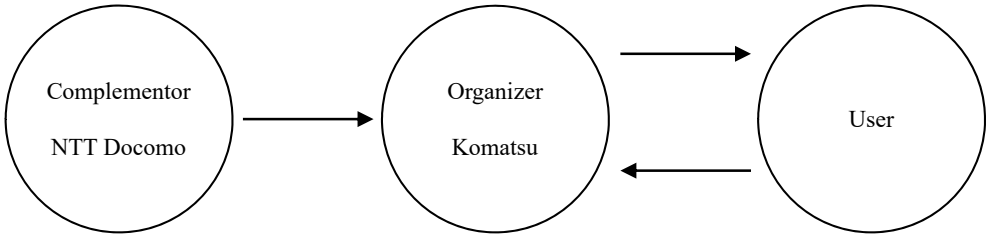


Figure 8: Case of KOMTRAX (Komatsu)

### 4.2 Unidirectional Complementary Supply Model

Organizer starts communicating with complementor mutually. Complementor is able to acquire user because of co-creation with organizer. Organizer is able to provide new services and solutions with complementor. Therefore, complementor is more satisfied than complementary utilization model. This model case can be adapted to ITunes (Apple) (Figure 9). Organizer is Apple and complementor is record label. Apple is able to provide further services and solutions with complementor. Moreover, record label is able to acquire user which could not acquire. Therefore, ITunes (Apple) is Unidirectional complementary supply model.

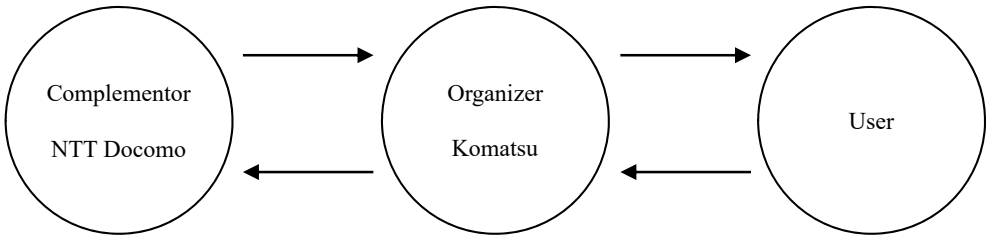


Figure 9: Case of ITunes (Apple)

### 4.3 Bidirectional Complementary Supply Model

Complementor is able to also provide services and solutions for user because complementor starts direct communicating with user mutually. Therefore, User is more satisfied and complementor is able to reflect user's information in products and services. This model case can be adapted to Visual studio (Microsoft) (Figure 10). Organizer is Microsoft and complementor is application developer. Microsoft is able to provide further services and solutions because of increasing application which uses Windows. Application developer is able to acquire user which could not acquire and improve application with user's information. Therefore, Visual studio (Microsoft) is classified into Bidirectional complementary supply model.

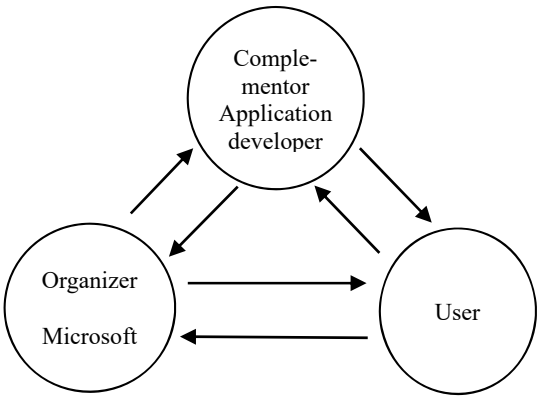


Figure 10: Case of Visual Studio (Microsoft)

### 4.4 Complementor and User Integration Model

User provides complementary to organizer. Organizer is able to reflect needs of user directly because user provides idea and information of user to organizer. This model case is LEGO block (LEGO) (Figure 4). Organizer is LEGO and complementor is user. LEGO has commercialization system which user created original works. In other word, user provides idea to LEGO. Therefore, LEGO block (LEGO) is classified into Complementor and user integration model.

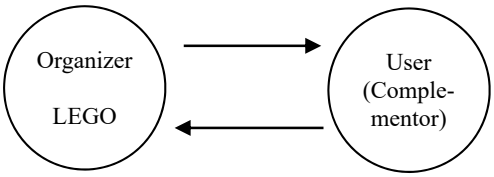


Figure 11: Case of LEGO Brock (LEGO)

## 5. Conclusion

Companies are difficult to create new value because lifecycle is shorter and customer needs become more diverse. This research proposed a value creation method model for responding to changes in the market. In particular, focusing on ecosystem included both companies and user, experience value can be provided. By combining value creation and open innovation, new value creation method is presented. Moreover, this ecosystem models are able to provide new value to existing products and services by network effects.

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