[Working Paper]

Innovation and Society's Orientation around Value Co-Creation

Building Partnerships between Companies and Customers

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1. Introduction

Rarely is a word used as prevalently as "innovation" is. As a result, the definition of this word has also become more multifaceted, making it difficult to have accurate discussions.

The purpose of this study is to review the various meanings implied by the word "innovation" and by the word "innovation" preceded by a descriptor. In addition, we address value co-creation, which has often been discussed in recent years as a way to enhance innovation, and we investigate the implications of the democratization of innovation and the co-creation of value.[1]

2. What is Innovation?

2-1. The Prevailing Image of Innovation

Undoubtedly, the term "innovation" has been used often since the early days of the study of business administration. In this context, new combinations, new technologies, new approaches, new usage methods, new ideas, and new values are emphasized (Sato, 2017:200), and the term signifies "changes in what satisfaction and values consumers can obtain from resources" through these means (Drucker, 2007a:13). The concept describes the series of events during the process from invention to commercialization (Asakawa, 2003:177); innovation signifies drastic

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[1] This study is based on the contents of a lecture entitled "Innovation and Society's Orientation around Value Co-Creation: Building Partnerships between Companies and Customers," which took place at an event sponsored by the Committee on Small and Medium-sized Enterprises of the Kansai Association of Corporate Executives on August 20, 2018. Thus, the referenced literature is in Japanese in consideration of its availability to the general audience, and the lecture is closer to an outline than a thesis.

changes in economic and social activities. Thus, in this section, we review the characteristics of innovation, as described below.

2-2.　Discontinuity
　Innovation is creating the future by producing something did not exist previously (Nonaka and Katsumi, 2009:250-251). In addition, it signifies a disruption of unnatural or inconvenient processes in today's world (Nonaka and Katsumi, 2009:219). Under this definition, the significance of innovation must extend beyond the traditional categories of existing markets and products rather than being considered "a projection of past experiences" (Ikeda, 2011:112). In other words, we can say that the first characteristic of innovation is discontinuity.

2-3.　Progressiveness
　If innovation serves "to greatly alter humanity's social life" (Itami, 2009:2), this change (rather, progress) strives to provide customers and society with great profit, great potential to multiply wealth, great value, and great satisfaction (Drucker, 2007a:308). Ikeda (2011:17) clearly articulates that the term "innovation" was first translated into Japanese as "<u>technological</u> progress (underline added)" in a 1956 White Paper (METI's economic report), arguing that "the English word 'innovative' simply refers to the process of modification and does not refer to technology." In this sense, the second characteristic of innovation is progressiveness.

2-4.　Creation of New Markets
　If new products are created through innovation via accumulated technologies in society (Itami, 2009:185), and if these products bring about discontinuous progress in people's lives, then innovation signifies "a spread in the demand for a product or service at an unprecedented scale and range" (Itami, 2009:133). In other words, this process entails the birth of a new market, and, thus, the third characteristic of innovation is the creation of such a market.

2-5.　Importance of Knowledge
　The fourth characteristic of innovation is the importance of knowledge. It goes without saying that knowledge is necessary for innovation.
　According to the well-known management consultant Peter Drucker (2007b:56), the definition of "management" is to "know how to effectively apply existing knowledge to produce results," and, at the same time, the term is applied to the clarification of "what new knowledge is necessary," "whether the knowledge can be realized," and "what is needed to make the knowledge more effective." Thus, "knowledge is also applied to systematic innovation." In other words, knowledge is at the core of innovation. From another angle, Prahalad and Krishnan (2009:13) also touch on the importance of knowledge. Given that the innovation process must

constantly respond to changes in consumer demand, behavior, and experience, Prahalad and Krishnan (2009:13) argue that "[companies] must find the best talent and management resources in the world to achieve this." In other words, innovation is a product of a knowledge-driven society, and knowledge is an important resource for generating innovation.

2-6. Communication between Technology and Market

In Section 2-1, we mention that "new combinations" are emphasized during innovation. Determining the entities to be combined to yield innovation is an important part of the process. Von Hippel (2006:124) provides an example of innovation yielded by a "new combination," as follows:

"For example, a mountain biker who specializes in jumping from high platforms and who is also an orthopedic surgeon will tend to develop innovations that draw on both of these types of information: he might create a seat suspension that reduces shock to bikers' spines upon landing from a jump."

This example represents the possibility for innovation when combining the knowledge of users in the market with a mountain bike manufacturer or technology through communication. Such communication is the fifth characteristic of innovation.

The method of combining market knowledge with manufacturing technology is important here, and, thus, as Itami (2009:83) says, "In the end, innovation is born out of communication between a market and technology."

2-7. Risk and Uncertainty

The sixth characteristic of innovation pertains to risk and uncertainty.

Tidd et al. (2004:20) point out that innovation was originally a dangerous business, entails a large degree of uncertainty, requires appropriate management, and has a low outlook for success unless given conditions are met. However, Drucker (1996:96) argues that, as a risk taker, one should pursue innovation, as "the risks associated with pursuing innovation are much smaller than the risks of not pursuing innovation." In addition, Nonaka and Katsumi (2004:113) show that new knowledge always remains even if technological development fails and stresses the importance of "not stopping the flow of knowledge, continuously consuming knowledge, and proactively utilizing knowledge."

Innovation entails risks and uncertainties because it cannot be assessed through logical analysis. Nonaka and Katsumi (2004:68) summarize this idea as follows:

"How easy things would be if we could achieve innovation through logical analysis … Creative and innovative technology developments and product developments are not born out of logical analysis where the truth is a prerequisite but by dialectically combining conflicting items."

2-8. Source of Competitive Advantage

The seventh characteristic of innovation is that it is closely related to competitive advantage.

Companies pursue innovation even if it requires risks or involves uncertainty because innovation is greatly tied to a company's competitiveness. Tidd et al. (2004:85) describe innovation as "a major internal source of competitive advantage," and Prahalad and Ramaswamy (2004:305) describe the increase in competitiveness through innovation as "[companies] co-create value with consumers by accumulating numerous changes and adaptations. If such changes continue at new frontiers, this will not only reveal new business opportunities but the market equilibrium will also shift."

2-9. Summary

In this section, we aimed to review the characteristics of the multifaceted word "innovation." As a result, we found that innovation is often discussed in the context of (1) discontinuity, (2) progressiveness, (3) market creation, (4) importance of knowledge, (5) communication between technology and markets, (6) risk and uncertainty, and (7) the source of competitive advantage. In the next section, we examine the process that innovation follows and the situations in which it may succeed or fail.

3. The Process of Innovation
3-1. The Process of Innovation

In general, innovation is said to be a three-step process: (1) invention (idea creation), (2) development (idea realization), and (3) the introduction of products to the market (commercialization) (Kanter et al., 1998:26-27). In other words, the process of innovation covers the "birth of new products and services from technological innovation, their large-scale acceptance by real-world markets, and coming to fruition by changing the lives of people (Itami, 2009:2)."

Two forces control this process (Govindarajan and Trimble, 2012:151). The first is the technology push, which refers to technological innovation by companies that catalyze a series of innovation processes. The other is the market pull, which refers to market demand triggering technological innovation with the help of policy, economic, and political efforts by interested parties. The decarbonization of society is a good example.

3-2. Success Factors of Innovation

Given the importance of innovation, it is only natural to discuss how it can be successful. Here, we introduce a few relevant points.

The first success factor for innovation is an entrepreneurial spirit. This factor is described by the idea that "innovation is done by people." (Drucker, 2007a:188).

The second factor is the interaction between technology and organizations. Kusunoki and Chesbrough (2001:263) state, "The organization of the firm also conditions its ability to profit from its innovation activities. [Thus] the firm's organizational strategy must align with the technology that they are pursuing."

The third factor is the attitude of the management. The important issues are "whether management can make new evaluations of personnel who contributed to the growth and management of the company" and "whether management can continue to evolve and learn/adapt from a business environment increasing in severity." (Utterback, 1998:265)

The fourth factor is corporate culture. Kanter et al. (1998:21) point out the importance of "an open corporate culture" and argue that "companies with such a culture have windows facing all directions; internally they have no barriers between departments and functions, and externally they strive to maintain the best relationships possible."

On the contrary, the fifth factor highlights the importance of design. "Design is the portion of the product that appeals to sensibility. This can refer to aspects that appeal to the five senses (ex. visual or tactile) such as product design or ease of use and comfort. The impact from the design is not only short-term when viewing the traproduct or during use, but can have a lasting impact in one's memory … Designs that appeal to the senses tend to have a larger overall impact … Design can become the driving force behind innovation as it could inspire, create a buzz, and create a big wave of demand" (Itami, 2009:149-150). Although Japanese companies have lately started to recognize the importance of design, they should learn from the sensibility of using design to pioneer new markets, as in the case of Northern European, Italian, and French products becoming widely accepted by Japanese consumers.

3-3. Efforts after Successful Innovation

A company is not guaranteed long-term financial security just because its innovation is successful. Eastman Kodak and Fujifilm, two makers of film products, provide a good example of this issue. Whereas Eastman Kodak, which boasted the top market share in silver halide photographic film, went out of business in 2012 as a result of its failure to develop new businesses, Fujifilm continues to maintain its position as a frontrunner in the industry owing to its developing new businesses, such as digital cameras, medical equipment, and even cosmetics, by utilizing its accumulated technologies (Yamamoto, 2013:105). This example highlights the necessity of continued efforts following successful innovation. As Drucker (2007a:258) points out, "Companies must increase their development costs especially after they have had success in innovation. They will need to develop new ways to use the product, discover new customers, and have them try new products."

3-4.　Inhibiting Factors of Innovation

Tidd et al. (2004:397) briefly summarize the environmental factors that inhibit innovation. We reviewed these factors and present those that are relevant within the context of this study, as follows.

Tidd et al. (2004) believe that innovation is more likely to occur in an environment with horizontal relationships rather than in hierarchical or vertical environments. As we pointed out in Section 2-9, the characteristics of innovation include the importance of knowledge, communication between technologies and markets, and risks and uncertainties. It is believed that a flatter organizational structure encourages the spread of knowledge within the organization, promotes smoother communication with the market, and enhances the recognition of risks and uncertainty.

In addition, Tidd et al. (2004) believe that substantial and expansive change is more likely to encourage innovation than perfunctory, limited change is. The former type limits progressiveness (the second characteristic of innovation), and, thus, limits innovation that could become a source of competitive advantage (the seventh characteristic of innovation).

Furthermore, Tidd et al. (2004) warn about innovation activities with no focus. Regardless of whether innovation is driven by technology push or market pull, a company must activate its core competencies to achieve discontinuity (the first characteristic of innovation) and generate innovation narrowed to a set focal point or objective. Unfocused innovation activities struggle to produce results as globalization advances and companies compete across borders and as modularization increases and companies focus on specialized technologies.

4.　Types of Innovation
4-1　Large and Small Innovation

We examined the concept of innovation in Sections 2 and 3; however, as the term "innovation" became well-known to the greater population, a series of new concepts with attached descriptors began to emerge. We address a few of them in this section to deepen our understanding of the concept of innovation.

We first introduce "large innovation" and "small innovation," concepts discussed by Masato Sato. Sato (2017:200) states, "When we consider innovation design, certainly there can be small, medium, or large ways of creating innovation." Sato (2017:200) anticipates that "in particular, the regional, 'small innovations' are diverse and effective in remedying the social paradox." He offers the perspective that, if people pursue innovation to solve global problems, then, at the same time, innovation is needed to solve local problems. On this basis, Sato (2017:201) seeks (1) the need to re-energize local small and medium businesses to revitalize regional economies and promote industry, (2) the development of an environment in which

many people from a broad base can participate in activities to spur innovation and form an invigorated Japanese society, and (3) the formation of a society in which local people can make "small" innovations from diverse positions and perspectives.

This discussion point is particularly notable for Japan, where regional revitalization is heavily emphasized and innovation activities are encouraged in regions and by rural small or mid-sized companies.

4-2. Product and Process Innovation

The focal points of innovation activities can be largely defined as either product innovation, such as the development of new products and markets, and process innovation, such as the modification of manufacturing (service) processes (Ohashi, 2005:8).

Product innovation is influenced by the strategic goals for the market (Nakano and Managi, 2006:117) and is based on the belief that new products are the fruits of cutting-edge innovation (Tidd et al., 2004:5). In other words, according to Tidd et al. (2004:5), "We can say the development of new products is an important ability in companies. Shifts in the socio-economic environment as to what people believe, expect, desire, and earn will create new opportunities and constraints … Product innovation will require companies to develop capabilities to handle the innovation."

In contrast, process innovation involves "creating something other companies can't" and "creating something through a better method than other companies" (Tidd et al., 2004:5). Process innovation was the most common feature among Japanese companies from the end of the period of rapid economic growth to the start of the 21st century. Process innovation supported the growth of Japanese companies in the automobile, motorcycle, shipbuilding, and home appliance sectors into global top brands.

Compared to product innovation, process innovation may appear to have a smaller impact, but it is extremely important for future development. Economist Lester Thurow (1992:67) argues that, "in the 21st century, process technology, which develops new production methods, will become more important than product technology, which develops new products, in maintaining an economic competitive advantage." The reason is that similar products may emerge quickly following the invention of a new product, whereas the ability to invent and improve a new production method is more difficult to imitate.

Prahalad and Krishnan (2009:223), who study the co-creation of unique value with customers, point out the importance of process innovation as follows: "In order to personalize the customer experience and make it highly unique … a company must have a flexible operational process to handle constant innovation. Diversity, flexibility, adaptability, and constant progress in operational processes hold the key to success."

4-3.　　Sustaining and Disruptive Innovation

Perhaps the most famous discussion around types of innovation is that regarding sustaining and disruptive innovation, as asserted by Christensen and Raynor (2003:36-37). They demonstrate that "in the context of sustaining innovation, or a situation where companies compete by catering to their most profitable customers with expensive, higher-quality products, incumbents will always outperform," whereas "in a disruptive innovation, where typically cheaper, simpler-to-use versions of existing products that target low-end or entirely new customers emerge, it is highly probable that new entrants will outperform established companies."

A characteristic of sustaining technology is the "innovation to further enhance product performance along the mainstream-value dimension" (Shibata, 2008:34); a majority of these technologies focus on "enhancing product performance" (Christensen, 2001:9). In other words, products created through sustaining innovation are characterized by higher performance than conventional products are, and established companies with sufficient resources to dominate the market and meet the stringent demands of high-end customers gradually modify these products (Christensen and Raynor, 2003:39-40).

Products resulting from disruptive innovation, however, are characterized by low prices, simplicity, compactness, and ease of use (Christensen, 2001:9). Good examples of such products include the mini blast furnace, which did away with vertically integrated steel mills; digital photographs, which replaced silver halide photographs; smartphones, which integrated the functions of phones and PCs; semiconductors, which eliminated vacuum tubes (Kotler, 2015:189-190); Japanese automobiles, which took market share from large vehicles with poor fuel economy during the oil crisis (Ikeda, 2011:48); and the Honda Super Cub, which took market share from large motorcycles, such as Harley Davidsons. (Ikeda, 2011:45). In this way, new entrants often bring about disruptive innovation; their products are simple, easy-to-use, and cheap but supply a "new dimension of value" (Shibata, 2008:34) during the process of overtaking mainstream products in the market.

Christensen refer to this scenario as the "innovator's dilemma." That is, it is a situation in which "disruptive technology puts innovators into … a dilemma. Making efforts, being sharply aware, investing actively, and listening carefully to customers' opinions are all effective in solving the problems caused by new sustaining technology," but "these paradigms for stable management not only are ineffective for disruptive technology … but [are] often counterproductive" (Christensen, 2011:115).

The cause of this dilemma is the main point of discussion of Christensen (2001), who focus on the relationship between customers and companies. Christensen (2001:84) asserts that "customers direct manufacturers to sustaining innovation,

make them lose their leadership in disruptive innovation, and, to put it frankly, can lead them in the wrong direction." That is, if companies obey the golden rule to listen to the voice of the customer, then "depending on circumstances, it can become a powerful concept for success, but in other situations it can also be a shortcut to failure" (Utterback, 1998:251). To further elaborate, we quote Hamel and Prahalad (2001:161), who went on to study value co-creation, as follows: "Customers cannot foresee the future, this is obvious. How many people 10 or 15 years ago wished for a mobile phone or personal fax, copy machine, 24-hour securities trading, multi-valve engine, videophone, CD Player, car equipped with a navigation system, portable, international satellite-based position measuring device, automatic cash dispensing machine, MTV, or a network for home shopping?"

In other words, it is the relationship between the customer and the company that causes innovator's dilemma, and when a company "adapts excessively to current customer needs, they have a harder time developing products to meet the needs of tomorrow's customers" (Takai, 2008:87). Thus, it is important to "grasp beyond customers' needs, to customers' wants" (underline added) (Nonaka and Katsumi, 2004:138-139). If a company can identify the customers' wants, "customers will come to view the final product placed in front of them … and realize 'This is what I wanted.'" (Nonaka and Katsumi, 2004:317-318).

Many readers may feel that these principles are paradoxical, because, with respect to the innovator's dilemma, Christensen argue that mainstream companies are so entrenched in catering to established customers that they miss niche markets and allow new market entrants to create and develop disruptive innovations. The early-2000s discussion on innovation centered on whether to listen to customers' opinions.

4-4. Open and Closed Innovation

The next type of innovation that we introduce is open innovation. The premise of the discussion around open innovation is that advancements in globalization and specialization and rapid developments in IT have caused "a dispersion of useful knowledge; even the largest and most powerful companies will not be able to proprietarily develop all necessary technologies" (Christensen, 2008:88). In that sense, open innovation is along the same contextual lines as open architecture, a concept actively discussed since the late 1990's. Open architecture is architecture "whose inter-module interface is made widely public to society" (Kokuryo, 1999:49). The products are characterized as being "basically modular products with an interface standardized on an industry level, beyond just companies" (Fujimoto, 2001:6).

On that basis, open innovation is defined as "systematically promoting and pursuing the broad incorporation of internal and external ideas that can create

opportunities for innovation, then consciously combining those innovations with internal capabilities and resources, and broadly outputting those opportunities to the market through various sales channels" (West and Gallagher, 2008:117). In other words, this type of innovation signifies that "ideas are generated, whether internally or externally, and those ideas are sent to the market, whether internally or externally" (Chesbrough, 2004:58). To describe this idea further, "companies are compelled to form teams with other companies in order to develop or absorb new technologies, or to absorb new products, commercialize new products, or simply not fall behind in the latest technological developments" (Vanhaverbeke, 2008:271).

This way of thinking is the opposite of closed innovation, which had previously been embraced. With closed innovation, companies had honed their technology by developing ideas, marketing, and raising capital on their own. Moreover, as Chesbrough (2004:5) indicates, companies have long generated innovation in their central research labs on the following beliefs: "(1) a company must hire the most talented personnel in the industry, (2) to bring a new product to market, a company must develop it on its own, (3) the company that most quickly develops a new product can most quickly put it on the market, (4) usually, the company who is the first to place an innovative product on the market will win, (5) the company who makes the highest investment in research and development in the industry can develop the best new products and lead the industry, and (6) a company should protect intellectual property and prevent others from imitating."

However, situations have changed. The pool of quality talent and liquidity have both increased. The knowledge needed for innovation has also started to accumulate in "suppliers, customers, universities, venture companies, and consultants" (Chesbrough, 2004:49).

From there, discussions around open innovation inevitably blossomed, and the concept of co-creation became more powerful. Before we explain the concept of co-creation, we need to touch on the concept of commodity traps.

Commodity traps signify a phenomenon in which differentiation between rival companies become difficult as companies worldwide conduct more research to develop new products (Chesbrough, 2012:39). To escape the commodity trap, that is, to regain a competitive edge through differentiation from other companies, a company must "build a much deeper relationship with customers that cannot be imitated by rivals" (Chesbrough, 2012:102). In other words, we observe a similar shift away from the previous flow of discussion to that in the discussion of sustaining and disruptive innovation, which emphasized not excessively listening to customers' voices to avoid the pitfalls of the innovator's dilemma. Chesbrough (2012:43) states, "Service innovation advances when the role of the customer changes during the process of innovation. A growing number of companies incorporate customers into their innovation processes rather than treat them as passive entities. In many cases, companies collaborate with customers to come up

with new products and services."

4-5. Reverse Innovation

Given the growing importance of co-creating with customers, we introduce another type of innovation. The activities of multinational corporations easily transcend borders; the age when companies could sell existing products to the middle and upper classes in emerging markets is coming to an end. Similar to Base of Pyramid businesses, a movement aims to create new future markets by creating products to meet the needs of the poorest citizens (with low purchasing power) in developing countries.

The concept of reverse innovation was proposed under such circumstances. Nomura Research Institute (2010:47) defines reverse innovation as "a way of thinking in which the products and services developed for emerging markets are competitive not only in emerging markets but also in developed markets." Govindarajan and Trimble (2012:6) explain reverse innovation as "the case where the innovation is adopted first in poor (emerging) economies before 'trickling up' to rich countries." In other words, reverse innovation describes the assessment of local needs in developing and emerging markets, the development of affordable products that satisfy these needs through innovation, and the readjustment of these products to the markets of developed countries. As many multinational companies have experienced, this concept is based on the idea that "[products/services] that are effective in rich countries are not necessarily automatically accepted in emerging markets with completely different customer needs" (Govindarajan and Trimble, 2012:7). For multinational companies, reverse innovation can serve as (1) an opportunity to bring about new innovation, (2) a potential means to gain new future markets, and (3) part of their corporate social responsibility activities to allow citizens of emerging and developing countries to flourish economically, improve their living standards, and obtain better educational standards.

In determining the best way to bring about reverse innovation, the focus again is co-creation with the local community. Here, we introduce the concept of "unlearning." We previously showed that products with high customer needs in developed countries may not necessarily generate demand in emerging and developing countries. If that is the case, then the most important task is understanding local needs. To this end, companies must "unlearn" the experiences that brought them success in developed countries. For example, General Electric uses only human resources from emerging and developing countries to advance the design and development of affordable products suited to local needs (Konomoto, 2010:x). In addition, Govindarajan and Trimble (2012:23), proponents of reverse innovation, state, "Reverse innovation does not come from inventing but from forgetting. One must abandon what he's learned, what he's seen, and what has

previously brought about the greatest success, and let go of the dominant logic that has worked in industrialized countries." They also state that "one of the most difficult tasks in attempting reverse innovation is to forget history" (Govindarajan and Trimble, 2012:191) and that "global corporations with lots of history are accustomed to innovation in rich/industrialized countries, but the needs and solutions of emerging countries differ significantly … and thus reverse innovation must start from a blank slate" (Govindarajan and Trimble, 2012:96).

Then, from this initial state, companies may ask with whom they should start brainstorming. Surely the answer to this question is the customers who understand the needs of the local area (future users of the product or service). Reverse innovation simply cannot begin without co-creation.

5. Value Co-Creation
5-1. Democratizing Innovation

The previous discussions have highlighted the importance of innovation and the co-creation of value (in other words, the creation of a partnership between companies and customers with respect to innovation). To support this idea, discussions related to the democratization of innovation have emerged, spearheaded by Eric von Hippel.

The democratization of innovation is defined as "the state in which the users of products and services—both firms and individual consumers—are increasingly able to innovate for themselves owing to improved environment and capabilities, rather than a reliance on manufacturers of products and services" (von Hippel, 2006:14).

Eric von Hippel (2006:40) explains which types of users are capable of information using the concept of the lead user. In other words, "(1) since lead users are at the leading edge of the market with respect to important market trends, one can guess that many of the novel products they develop for their own use will appeal to other users too, and (2) they expect to gain relatively high benefits from a solution to the needs they have encountered there, and thus many are likely to become innovating users (develop new or modify products)." Lead users combine existing products with the developments of others to obtain "exactly right products" (von Hippel, 2006:14). In other words, such users are viewed as entities that are ahead of commercial needs and create innovation themselves.

Such innovations by lead users never replace innovations by companies but rather complement them. In other words, a complementary relationship in which demand-oriented innovation is done by lead users and solution-oriented innovation is done by manufacturers is established (von Hippel, 2006:96). As a result of the interactions within this complementary relationship, lead user innovation supplies manufacturers with beneficial information that cannot be obtained by other methods (von Hippel, 2006:143). Thus, manufacturers may wish to actively seek

innovating lead users to commercialize innovative products more quickly than ever before (von Hippel, 2006:186).

5-2. Value Co-Creation

In parallel with discussions on the democratization of innovation, Prahalad and Krishnan (2009:11) study value co-creation, stating "In the future there will be an increased tendency for consumers to co-create value with companies and their suppliers, business partners, and communities of consumers. Personal experiences will be customized for each consumer during this process." Businesses should strive for such "personalization of customer experience" (Prahalad and Krishnan, 2009:187) when managing the multiple points of interaction with their customers and co-creating value.

Similar to von Hippel's focus on lead users, Prahalad and Ramaswamy (2004:188-189) focus on value co-creation based on the strong conviction that, in a modern era with advanced globalization and technology, "consumers will gain power and proactiveness, connect with each other, and will increase their inclination to talk with other companies as well as other consumers." They show that with value co-creation as an axis, "management resources dramatically increase when using a broad range of resources – competence, knowledge, infrastructure, investment area – in suppliers, business partners, and communities of consumers" (Prahalad and Ramaswamy, 2004:292-293).

The following quote is an easy-to-understand example of value co-creation using Lego blocks.
"What does a young child value here? The Lego bricks? Or the ability to construct a variety of experiences using the bricks? The Lego brick serves as an artifact around which individuals have experiences. The same consumer can use those Lego bricks to create a new experience every time, and different consumers can have different experiences with the same bricks. Thus, Lego consumers co-create value by interacting with the Lego company through its experience environment." (Prahalad and Ramaswamy, 2004:90) .

Given the spread of social networking services, companies are able to understand the values customers create for their products and the relevant experience environments. In addition, consumers can use a company's products to communicate the personalizations of the customer experience that they attempted. The surrounding environment for value co-creation is in place both online and offline.

5-3. Experience Innovation

We now discuss experience innovation, which is brought about by value co-creation, along with its characteristics.

Prahalad and Ramaswamy (2004:118) summarize the differences between

traditional and experience innovation in. First, traditional innovation targets products and operational processes (i.e., product and process innovation), whereas experience innovation targets an experience environment that generates an appealing co-creation experience (Prahalad and Ramaswamy, 2004:94). The basis of value in traditional innovation is products and services, whereas that in experience innovation is companies and co-creation experiences with customers. Under firm-centric traditional innovation, companies create value regardless of market pull or technology push, whereas, under experience innovation, companies and customers co-create value; the method stresses value co-creation centered on each individual customer. The developmental focus in traditional innovation involves keywords such as cost, quality, speed, and modularization, whereas of experience innovation has the following focuses: granularity (i.e., giving the consumer the ability to interact with experience environments at any desired level of specificity, immersing herself in experiences over time in whatever way she chooses (Prahalad and Ramaswamy, 2004:104)), extensibility (i.e., exploring how technologies, channels, or modes of delivery can allow consumers to experience established functions in new ways or create entirely new functionalities (Prahalad and Ramaswamy, 2004:107)), linkage (i.e., the recognition that events connect in multiple ways from a consumer's perspective (Prahalad and Ramaswamy, 2004:109-110)), and evolvability (i.e., capturing the learning from co-creation experiences and using it to develop experience environments that shape themselves to consumers' needs and preferences and not vice versa (Prahalad and Ramaswamy, 2004:111)). With respect to the technological focus, traditional innovation focuses on the integration of functions, technology, and systems, whereas experience innovation focuses on the integration of factors that advance experiences or the experiences themselves. The aim of infrastructure in traditional innovation is to encourage the completion of products and services, whereas experience innovation encourages the personalization and co-creation of experiences.

Thus, innovation in a society that stresses the co-creation of value places customers in the leading role of the value co-creation process. "Informed, networked, empowered, and active consumers are increasingly co-creating value with the firm. Companies that had previously pursued customers like hunters are now in a position to be pursued back" (Prahalad and Ramaswamy, 2004:184).

5-4. Value Co-Creation and Markets
As discussed above, the bundled co-creation experiences of customers generated from the experience environment become important in value co-creation. These experiences become the aforementioned characteristics of granularity, extensibility, linkage, and evolvability. This evolution is a major paradigm shift in the emergence of innovation and has the potential to positively change the commercial

relationship between companies and customers.

This study addresses the theme of a society oriented around value co-creation and innovation. In this context, we must understand what value signifies and how is it created. Prahalad and Ramaswamy (2004:185-186) argue that "value strengthens the link between each co-creation experience," that "the co-creation experience determines … how much money each consumer will pay," and that "neither product nor service forms the basis of value. Rather, value is said to be created by the co-creation of experiences in an experience environment jointly built by companies and consumers."

If that is the case, we need to modify the previous image of the market as a place where companies (supply-side) trade goods and services with customers (demand-side). We explain this concept again using the discussion of Prahalad and Ramaswamy (2004:187), as follows: "With value co-creation (as value shifts to experiences), the market is becoming a forum for conversation and interactions between consumers, consumer communities, and firms. We must regard the market as a place to nurture co-creation experiences." Moreover, given the emerging concept of the market as a forum to nurture co-creation experiences, the "interaction between the firm and the consumer or consumer community is becoming the locus of value creation and value extraction. Changes among consumer sentiment cannot be understood without being in close proximity and jointly creating value. The company should get to know the consumer as deeply as possible through productive dialogue; the content of the dialogue is also likely to increase sophistication in accordance with the knowledge and skills of consumers. One must build an information system with consumers as the nucleus, and use it to proactively involve consumers in every aspect of the co-creation experience, from information gathering to the planning, completion, and delivery of products and services."

If that is the case, the products and services developed by companies may change in the future. Until now, companies unilaterally presented information to customers about products built using the their innovative technologies or new services based on new ideas. However, in a society centered on value co-creation, commercial products and services will change to adopt specifications that can flexibly respond to customer-company interactions and personalized co-creation experiences.

Another challenge is how to create opportunities online (the utilization of big data) and offline (various events, including exhibitions) to promote experience innovation between companies and customers. The emerging knowledge-driven society prevents the supply-side (i.e., companies) from monopolizing knowledge. Governance capabilities centered on innovation-driving interactions with stakeholders that surround companies providing products and services will become key.

6. Conclusion

In this study, we centered our discussion on the topic of *a society ordered around value co-creation and innovation.* In Section 2, we summarized the characteristics implied by the word, "innovation" into the following seven categories: (1) discontinuity, (2) progressiveness, (3) market creation, (4) importance of knowledge, (5) communication between technology and markets, (6) risk and uncertainty, and (7) the source of competitive advantage. In Section 3, we confirmed that the process of innovation spans from technological innovation to commercialization and found the success factors of innovation to be (1) entrepreneurial spirit, (2) interactions between technology and organizations, (3) attitude of the management, (4) corporate culture, and (5) the importance of design. Furthermore, we pointed out the importance of efforts after successful innovation and then listed the inhibiting factors of innovation as (1) vertical relationship; (2) perfunctory, limited changes; and (3) innovation activities with no focus. In Section 4, we introduced and reviewed several different types of innovations. With respect to large and small innovations, we highlighted the need not only for global-scale innovation but also for innovation on a local level, which could lead to regional revitalization. With respect to product and process innovation, we noted that both are important, although process innovation is important for future innovation that takes customers' experiences into account. In other words, we noted that diversity, flexibility, adaptability, and constant progress in operational processes hold the key to success. For sustaining and disruptive innovation, we emphasized the use of disruptive innovation by new market entrants and introduced the discussion of whether placing too much focus on the sophistication of products to cater to established customers' voices, as in the case of sustaining innovation, may cause companies to lose their leadership to disruptive innovation (i.e., the innovator's dilemma). However, in discussing open and closed innovation, we explained the current landscape that emphasizes the co-creation of unique value with customers. We explained that to escape the commodity trap, that is, to regain a competitive edge through differentiation from other companies, a growing number of companies incorporate customers into their innovation processes. Finally, in discussing reverse innovation, we pointed out the need to "unlearn" experiences that had brought companies success in the past, identify customer needs, and come up with affordable products or services to satisfy those needs.

The subtitle of this paper is "Building a Partnership between Companies and Customers." As previously stated, a review of the various concepts of innovation showed that the relationship between companies and customers has steadily changed over time. In Section 5, we reviewed and introduced concepts such as von Hippel's "democratization of innovation" and Prahalad and Ramaswamy's "value co-creation." We summarized the discussion that, given the current landscape of

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advanced globalization, empowered consumers, knowledge dispersion, and developed IT, companies should have points of interaction with customers, understand their experience values, and aim for experience innovation, which allows for assessments that are not possible with traditional innovation.

Finally, we conclude by mentioning several points that we did not discuss as part of this study.

First, we should expand our perspective of companies and customers from that of business management to that of public policy, and we should discuss innovation inclusive of aspects regarding public services and social actors. We should pay attention to public policy innovation, with consideration for public-private partnerships, private finance initiatives, concession methods, and the treatment of non-governmental and non-profit organizations that enter the public sector.

Second, it is essential for the discussion to include questions around deregulation in areas in which information and communication technology developments conflict with current regulations. A good example is the discussions around changing road and transport laws to introduce Uber in Japan. Perhaps such issues can be referred to as "deregulation innovation."

Third, we need educational innovation to foster entrepreneurs, the sources of innovation, as well as policy innovation to support these endeavors. Many changes are necessary to achieve this end, such as social security reform, corporate finance support, and high-level human resources training.

Finally, we must deepen discussions around revitalizing corporate culture to inspire innovation. Advancements in artificial intelligence (AI) and automation are said to diminish the number of future jobs to roughly half of today's figures. Many areas in which humans are expected to outperform AI in the future involve creativity. Thus, a corporate culture that relies on precedent, authoritarianism, or a vertical structure may have a hard time flexibly handling these requirements. More than ever, areas such as creativity, art, and design will become important.

References

Asakawa, K. (2003). *Global Keiei Nyumon,* Nikkei.

Utterback, J.M. (1998). *Innovation Dynamics (Mastering the Dynamics of Innovation).* (O. Masakazu and S. Ogawa, Trans.). Yuhikaku Publishing.

Ikeda, N. (2011). *Innovation to wa nanika,* Toyo Keizai.

Itami, H. (2009). *Innovation wo okosu*, Nikkei Publishing.

West, J. and Gallagher, S. (2008). "Patterns of Open Innovation in Open Source Software," Chapter 5 in Chesbrough, H (Eds.) (2008). *Open Innovation: Researching a New Paradigm.* (T. Nagao, Trans.). Eiji Press, pp.117-149.

Ohashi, M. (2005). "Transformation of Social Structure," Chapter 1 in Ohashi, M. and Hori, M. (2005), *Network Shakai Keizairon: ICT Kakumei ga Motarashita Paradigm Shift*, Kinokuniya, pp.2-12.

Kanter, R.M., Kao, J., and Wiersema, F. (1998), *Innovation Keiei (Innovation : Breakthrough Thinking at 3M, DuPont, GE, Pfizer, and Rubbermaid)*. (I. Horide, Trans.). Nikkei Business Publications.

Kusunoki, K. and Chesbrough, H.W. (2001). "Dynamic Shifts in Product Architecture: Pitfalls of Virtual Organizations," Chapter 13 in Fujimoto, T., Takeishi, A., and Aoshima, Y. (2001). *Business Architecture Seihin, Soshiki, Process no Senryaku-teki Sekkei*, Yuhikaku Publishing, pp.263-285.

Christensen, C. and Raynor, M. (2003). *Innovation he no Kai: Rieki aru Seicho ni Mukete (Innovator's Solution: Creating and Sustaining Successful Growth)*, (Y. Sakurai, Trans.). Shoeisha.

Christensen, C. (2001). *Innovation no Dilemma: Gijutsu Kakushin ga Kyodai Kigyo wo Horobosu toki (The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail)*. S. Tamada (Supervising editor). (Y. Izuhara, Trans.) Shoeisha.

Christensen, J.F. (2008). "Wither Core Competency for the Large Corporation in an Open Innovation World," Chapter 3 in Chesbrough, H. (2008), *Open Innovation: Soshiki wo Koeta Network ga Seicho wo Kasoku suru (Open Innovation: Researching a New Paradigm*, (T. Nagao, Trans.). Eiji Press, pp.61-91.

Kokuryo, J. (1999), *Open Architecture Senryaku: Network Jidai no Kyodo Model*, Diamond.

Kotler, P. (2015). *Shihon Shugi ni Kibo wa Aru: Watashi-tachi ga Chokushi subeki 14 no Kadai (Confronting Capitalism: Real Solutions for a Troubled Economic System)*. (Y. Kurata, Trans.). Diamond.

Konomoto, S. "Introduction" in Nomura Research Institute (2010), "BoP Business Senryaku: Shinkokoku/Tojokoku Shijo de Nani ga okotte iruka," Toyo Keizai, pp. vii-xii.

Govindarajan, V. and Trimble, C. (2012). *Reverse Innovation: Shinkokoku no Na mo nai Kigyo ga Sekai Shijo wo Shihai suru toki (Reverse Innovation: Create Far From Home, Win Everywhere)*. (N. Watanabe, Trans.). Diamond.

Sato, M. (2017), "Grassroots Innovation and Industry-Academia Community," *Kochi University of Technology Academic Bulletin*, Vol. 14, No. 1, pp.199-212.

Thurow, L. (1992). *Daisessen: Nichioubei Doko ga Katsuka (Head to Head: The Coming Economic Battle Among Japan, Europe, and America)*. (N. Tsuchiya, Trans.). Kodansha.

Shibata, T. (2008). *Module Dynamics: Innovation ni Hisomu Hosokusei no Tankyu*, Hakuto-Shobo Publishing.

Takai, T. (2008). "Leaping from Lead Markets to the World: A Case Study of Applied Materials," Part 1, Section 4 in Enatsu, K., Takai, T., Doi, I., and Sugawara, H. (Eds.) (2008), *Global Kigyo no Shijo Sozo,* Chuokeizai-sha, pp.73-97.

Chesbrough, H.W. (2012). *Open Services Innovation: Seikatsusha-shiten kara Seicho to Kyosoryoku no aru Business wo Sozo suru (Open Services Innovation:*

Rethinking Your Business to Grow and Compete in a New Era). (Hakuhodo Human-Centered Open Innovation Lab/TBWA Hakuhodo, Trans.). CCC Media House.

Chesbrough, H. (2004). *Harvard-ryu Innovation Senryaku no Subete* (*Open Innovation: The New Imperative for Creating and Profiting from Technology)*. (K. Ohmae, Trans.). SANNO University Publications Department.

Tidd, J., Bessant, J., and Pavitt, K. (2004). *Innovation no Keiei-gaku: Gijutsu, Shijo, Soshiki no Togo-teki Management* (*Managing Innovation: Integrating Technological, Market and Organizational Change)*. (A.Goto and J. Suzuki, Trans.) NTT Publishing.

Drucker, P.F. (2007a). *Innovation to Kigyo-ka Seishin (Innovation and Entrepreneurship)*. (A. Ueda, Trans.). Diamond.

Drucker, P.F. (2007b). *Post-Shihon Shugi Shakai (Post-Capitalist Society)*. (A. Ueda, Trans.). Diamond.

Drucker, P.F. (1999). *Asu wo Shihai Suru Mono: 21-Seiki no Management Kakumei (Management Challenges for The 21st Century)*. (A. Ueda, Trans.). Diamond.

Nakano, M. and Managi, S. (2006). "The ISO 14001 Environmental Management System and Innovation," Amano, A., Kokubu, K., Matsumura, K., and Gemba, K., editors (2006), *Kankyo Keiei no Innovation: Kigyo Kyosoryoku Kojo to Jizoku Kano Shakai no Sozo*, Japan Productivity Center, pp.116-131.

Nonaka, I. and Katsumi, A. (2009). *Innovation no Saho: Leader ni Manabu Kakushin no Ningen-gaku.* Nikkei Business Paperbacks.

Nonaka, I. and Katsumi, A. (2004). *Innovation no Honshitsu,* Nikkei Business Publications.

Hamel, G. and Prahalad, C.K. (2001). *Core Competence Keiei: Mirai e no Kyoso Senryaku (Competing for the Future)*. (K. Ichijo, Trans.), Nikkei Business Paperbacks.

Vanhaverbeke, W. (2008). "The Inter-Organizational Context of Open Innovation," in Chesbrough, H. (2008). *Open Innovation: Soshiki wo Koeta Network ga Seicho wo Kasoku suru (Open Innovation: Researching a New Paradigm)*. (Nagao, T., Trans.). Eiji Press, pp.271-288.

von Hippel, E. (2006). *Minshu-ka Suru Innovation no Jidai: Maker Shudo kara no Dappi (Democratizing Innovation)*. (CICOM International, Trans.). First Press.

Fujimoto, T. (2001). "Industrial Theory of Architecture," Part 1, Chapter 1 in Fujimoto, T., Takeishi, A., and Aoshima, Y. (2001), *Business Architecture Seihin, Soshiki, Process no Senryaku-teki Sekkei,* Yuhikaku Publishing, pp.3-26.

Prahalad, C.K. and Krishnan, M.S. (2009). *Innovation no Jidai (The New Age of Innovation: Driving Cocreated Value Through Global Networks)*. (Y. Aruga, Trans.). Nikkei Publishing.

Prahalad,C.K. and Ramaswamy, V. (2004). *Kachi Kyoso no Mirai e: Kokyaku to Kigyo no Co-Creation (The Future of Competition: Co-Creating Unique Value With*

Customers). (Y. Aruga, Trans.). Random House Kodansha.

Yamamoto, T. (2013). "Global Innovation Strategy," Chapter 7 in Enatsu, K., Ota, M., and Fujii, K. (Eds.) (2013), *Kokusai Business Nyumon edition 2,* Chuokeizai-sha, pp.105-122.

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