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An ICT Use Case of Social Business

Based on the Business Model Perspective

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Abstract:

Social businesses that solve local social problems using business methods have gained attention lately. Using information and communication technology (ICT) to solve social problems is expected to create social innovation that is compatible with social missions and business feasibility; however, the mechanism has not been clarified. In this research, a successful social business is analyzed with a focus on ICT and social capital, and attempts are made to define the mechanism of social innovation. The case of a direct sales store at a local roadside station was used to conduct a business model analysis using interviews to collect data. As a mechanism of social innovation, social capital has smoothly introduced ICT and strategic change, and the introduction of ICT changed the business model from a horizontal division type to a vertical integration type.

Keywords: *Social Innovation, Business Model, Social Capital*

1. Introduction

Japan's population decline that began in 2008 will accelerate in the future. The decreases in consumption and economic power attributable to this declining population are expected to burden the Japanese economy. Particularly in local areas, securing employment, aging, and promoting industry are becoming obvious urgent issues, and efforts to take advantage of local resources have begun. As a concrete method, social business has attracted attention. A social business meets the three requirements of having a social mission, being a feasible business and engaging in innovation (Tanimoto, 2006). Because the concepts of social mission and business feasibility cannot be easily balanced, innovation must also play a role. Innovation that links the concepts of social mission and business feasibility is called social innovation, and creating social innovation is the key to a successful social business. Therefore, numerous studies have attempted to clarify the social innovation mechanism, including discussions on the human value-creation networks that arise among various players involved in eradicating social problems (Mulgan *et al.*, 2007) and the characteristics of social entrepreneurs (Dees *et al.*, 2001). Yet, because these nascent discussions have only focused on people-related aspects, the social innovation mechanism has yet to be adequately clarified. In contrast, information and communication technology (ICT) and social capital are attracting attention as means and concepts to solve social problems. In recent years, the cases in which non-profit organizations (NPOs) and social entrepreneurs create social innovation using ICT have become the subjects of focus. More specifically, the regular use of low-priced, high-performance devices, such as smartphones and personal computers, and services (e.g., cloud services) have become more prevalent in social businesses. However, a few studies investigated and analyzed the focus on ICT as a factor in creating social innovation. In addition, social capital is defined as a concept that accumulates as a social infrastructure given the social activities of citizens in a specific area, thus improving regional security, health promotion, economic development, and others. Therefore, when dealing with a social business that is deployed in a certain area, the accumulation of social capital in that area needs to be observed. However, few studies have investigated and analyzed the relevance between social capital and social businesses. Thus, to acquire practical knowledge, this research aims to clarify the mechanism of social innovation by focusing on ICT and social capital in the case of a successful social business.

Therefore, the research questions are as follows:

RQ 1: What role do ICT and social capital play in creating social innovation?

RQ 2: Based on the results of RQ 1, is it possible to clarify the social innovation mechanism?

The remainder of this paper is structured as follows: first, a literature review is conducted on social innovation, ICT and social capital, and gaps related to this research are clarified. Second, a research model based on a hypothesis of social innovation is presented and shows the investigation method. Third, a summary of successful cases of social businesses utilizing ICT is presented, and the business model is visualized before and after introduction of ICT. Fourth, as a social innovation mechanism, a change in the business model is revealed through the introduction of ICT, and a smooth strategic transition using social capital's norms of reciprocity. Finally, the direction of future studies is discussed. Using ICT to create social innovation represents a foothold for organizing NPOs and social entrepreneurs in resolving social problems.

2. Literature Review

According to Schumpeter (1926), innovation is based on five underlying patterns: 1) the introduction of a new good; 2) the introduction of an improved or better production method; 3) the opening of a new market; 4) the conquest of a new source of raw materials or half-manufactured goods; and 5) the execution of better organization. In recent years, Tanimoto (2006) defined social innovation as the link between social missions and business feasibility. In this regard, a social mission involves transforming social problems into the mission of the business activities, whereas a social business means changing the social mission into a business and continuing the business. In both aspects, social innovation refers to developing new social services and mechanisms as well as creating new social value through their activities.

To date, previous studies on social innovation have primarily focused on human value-creation networks (i.e., new business cooperation among various key figures) and the characteristics of social entrepreneurs. Regarding the former, Phillips *et al.* (2008) suggested that such networks are created by exchanging ideas and values among various players, such as those in the government, private enterprises and NPOs, whereas Mulgan *et al.* (2007) indicated that these networks are created by matching social entrepreneurs with the social missions of the government and civil society. Tanimoto (2006) also referred to various community groups (e.g., social enterprises, intermediate support organizations, and universities that create social innovation) as *social innovation clusters* that are created through cooperative relationships. All these studies are consistent with the view that the source of social innovation is the connection between individuals. Regarding the latter, many researchers have claimed that the social entrepreneurial spirit is a multi-dimensional structure. For example, Weerawardena and Mort (2006) insisted that social entrepreneurship is actualized as an element of social missions through the sustainability of the organization and environmental and market competition. Tanimoto (2006) treated social entrepreneurs as carriers of social innovation, and explained that social innovation occurs when new business models are proposed and support from society becomes widespread. In addition, Dees *et al.* (2001) indicated that social innovation is created according to the following behavioral characteristics of social entrepreneurs: the belief that solving social problems assumes priority over the benefits, the desire to achieve social missions, the ability to carry out continuous learning processes, and the aim to act without resources.

These studies have recognized that social innovation is created from connections and interactions between individuals. However, although these studies provided clues to the creation of social innovation, the discussions primarily focused on people-related aspects. Furthermore, the connections and interactions among individuals do not step into the theoretical discussion, since many case-based considerations exist; therefore, social innovation is not grasped systematically. As a result, the findings have low reproducibility, and determining the timing of when social innovation is created is difficult. Additionally, this research focuses on ICT as a means to develop non-human arguments and social capital as connections and interactions among individuals from a theoretical point of view.

Davenport (1992) argued that the role of ICT is that of an enabler and that financial outcomes are not obtained from the direct effects of ICT but from a change in business processes. Prahalad and Krishnan (2008) also referred to the concept that a technical infrastructure such as ICT has a

major influence on business processes and a major impact on organizations and business innovation. Thus, any change in the business process has a major effect on business innovation. Innovation occurs as a result of a change in the business process, especially a change caused by ICT. However, although these studies revealed the relationship between ICT, the business process and innovation, their scope has not been expanded to solve social problems. Furthermore, because the mechanism of social innovation has yet to be elucidated, room exists for discussion.

Putnam (1993) noted that the concept of social capital has three components: trust, social norms and obligations, and social networks. Putnam's central point is that these components are accumulations of social capital if a region has a well-functioning economic system and a high level of political integration. Trust leads to cooperative behavior within that community, creating voluntary cooperation. Furthermore, gathering information about the partner and negotiating for dealings are not necessary, thereby reducing transaction cost. Social norms and obligations are morals, ethics, rules, and customs. In particular, Putnam (1993) emphasized the norms of reciprocity, which represent a sustainable relationship based on mutual expectation that transactions that are imbalanced at present become balanced in the future. The norms reciprocity is based on altruism in the short term and selfishness in the long term, and is said to be useful for the harmony of selfishness and solidarity. Social networks can be divided into a vertical network as observed in troops and companies and into a horizontal network as observed in civic groups and circles. Vertical networks are based on dominance and subordination, and social trust and cooperation are said to be not maintained much. In contrast, the horizontal network indicates that social trust and cooperation can be created because not many hierarchical relationships exist, given the participation of various members. The closer this horizontal network is the stronger is the cooperation toward mutual benefit. The three components are said to interact to lead to effective cooperative action for a common purpose. Baker (2000) also stated that the relationship between business and social capital can be described as, for example, "Getting a Job," "Pay and Promotion," "Organizational Learning," "Happiness," "Health," and "Longer Life." However, although these studies suggested effective views to consider when dealing with cases in specific communities, they have not been able to discuss the relationship with social businesses. From the literature review, this research aims to clarify the mechanism of social innovation that focuses on ICT and social capital. By clarifying this mechanism, NPOs and social entrepreneurs that must resolve social problems can make a foothold in conceptualizing the creation of social innovation using ICT.

3. Methods

3.1. Framework

This research proposes the hypothesis that social innovation is created when ICT and social capital act on a business related to a social problem, and the mechanism in social innovation will be clarified. The research model of this research is shown in Figure 1.

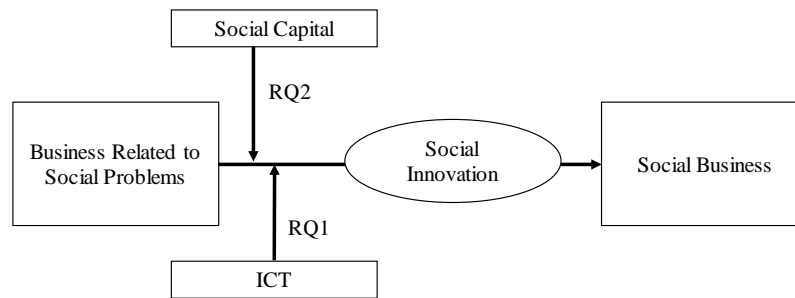


Figure 1. Research Model

According to this research model, RQ 1 and RQ 2 are answered through the following research method. A qualitative case study using one case was developed because, since this was found to be the most appropriate approach for addressing the specific research questions in this research. The direct sales business Uchiko Fresh Park Karari (subsequently called Karari), which succeeded in engaging with a profitable social business by introducing ICT is adopted. The reason for selecting this case is that comparing business models before and after the introduction of ICT is possible, as is expecting the effective accumulation of social capital from continuing community activities such that effective social innovation characteristics can be determined. The data collection method consists of semi-unstructured interviews of five survey subjects related to Karari. The semi-unstructured interview concerns determining the questions in advance and questions are added according to the specific situation and the progress of the interview. Because this process causes the same questions to be asked of all survey subjects, the advantage is that the answers are structured to some extent and data analysis is easy to carry out. The results obtained from the interviews are categorized and the influence of ICT and social capital are analyzed.

3.2. Data Collection

This research primarily collected data from interviews and related documents, such as newspapers and magazines. Eisenhardt (1989) suggested that research on theoretical construction can combine multiple data sources. Lincoln and Guba (1985) showed that *credibility*, *transferability*, *dependability*, and *confirmability* existed in the evaluation standards of qualitative research. In this research, credibility involves spending adequate time observing various perspectives, speaking with a range of people and developing relationships. Transferability is an attempt to accurately grasp the business model through detailed descriptions. Dependability provides the opportunity to have a researcher not involved in the research process examine both the process and the results of the research. Confirmability means using multiple analysts to review the findings.

To accurately grasp the case, this research prepared multiple interviewees in different positions who are familiar with each task. As shown in Table 1, the interview subjects included the following: a chief executive officer (CEO) who is familiar with the company's overall operations and influences its strategic direction and the adoption of new technology; and a chief technology officer (CTO) who is familiar with the entire system related to ICT and plays an important role in the introduction/development of new systems. The official who works for the Uchiko town office

has been involved since the initiation of Karari, the third sector, and grasps all the circumstances from the establishment. Three producers are members who participate in Karari and live in Uchiko town, shipping agricultural products to Karari using the ICT system.

Sample	Sex	Age	Position
A	Male	Sixty	CEO
B	Male	Fifty	CTO
C	Male	Fifty	Official
D	Female	Fifty	Producer
E	Female	Sixty	Producer

Table 1. Sample Characteristics

The main interview items were in accordance with the research questions and the results of the interviews were audio recorded (using a digital voice recorder) and subsequently phonetically transcribed. The collected data were analyzed using an appropriate procedure.

3.3. Analysis Procedures

In this research, coding and categorization were used as data analysis procedures. Esterberg (2002) defined coding as a process of identifying data intercepts and labeling each section to find themes, patterns and concepts. First, all data are read and a temporary code is provided when searching for a theme. Second, the code is summarized and examined for categorization. Third, the code is given when paying attention to the emerging theme. Finally, the code is categorized into groups of concepts with similar characteristics. In this research, the research questions are examined by grasping an overview of the case in accordance with this procedure.

4. Case Study

4.1. A Case of Karari

In this research, the case of Karari, a local road station of Uchiko town in Ehime prefecture, is developed. Uchiko town is a typical hilled rural area, with 76% of the total area occupied by forests, and the villages concentrated in the middle at an altitude of 200 m. The proportion of elderly individuals aged 65 years or older is 33%, and the average age of the agricultural workers is 66 years. In addition, the production of leaf tobacco is the main industry, and the 1983 annual production amount reached approximately 2.5 billion yen, then decreasing to approximately 150 million yen in 2012 from an increase in imported goods. As a result, agricultural workers are decreasing annually, and in 2005, were less than half of what they were 1998. Under these circumstances, Uchiko town had a social problem and promoting agriculture as an alternative to leaf tobacco production became necessary. To solve these social problems, Karari was established in 1997 as a third sector with an investment by Uchiko town. For the third sector, investments by organizations related to government offices are common; however, Uchiko town residents invested in Karari. In other words, Uchiko town invested 50% and its residents invested the

remaining 50%. Karari organized a council that creates rules among producers and controls product quality, and the producers voluntarily operate Karari. In addition, several committees are on the council, and the producers belong and are involved in management. Figure 2 shows the organization chart of Karari.

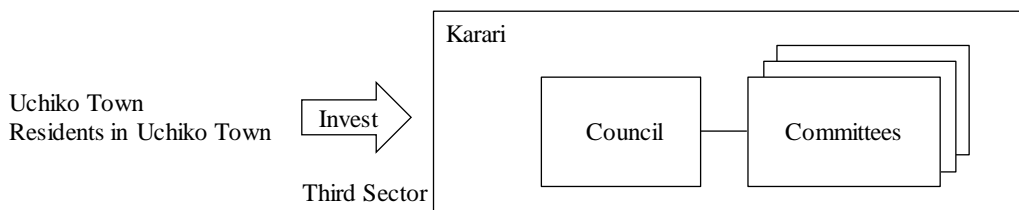


Figure 2. Karari Organization Chart

Karari is a complex facility that integrates a direct sales store, a restaurant, an agricultural processing plant, a park, and others; however, ICT is introduced only in the direct sales store—in this research, the direct sales store is addressed. Approximately 380 producers ship to this direct sales store, and visitors can purchase fresh agricultural products produced in Uchiko town. As many as 800,000 people visit Karari every year from outside the town, 70% of whom are repeat visitors. Such a high number of visitors are a phenomenal figure for a commercial facility in a mountainous area where transportation is not well-developed. Karari is successful because the introduction of ICT-enabled harvesting and shipping according to the sales situation and improved freshness. Furthermore, Karari brands were established by improving safety through the introduction of traceability. Karari has a social mission because it is addressing the social problems of promoting agriculture, aging, and developing successors in Uchiko town. Additionally, Karari’s sales amounted to approximately 13% of the total agricultural output value of Uchiko town, 2015 sales reached approximately 400 million yen, and income and expenditures are at a surplus. Therefore, it can be said that business feasibility exists. Furthermore, Karari is innovative because it introduced ICT and food safety, which are different methods from those used by other road stations. Therefore, Karari can be regarded a social business.

4.2. Food Safety

Karari actively engages in food safety and promotes an environmental conservation type of agriculture. This approach to food security is a major factor for Karari’s social business success. Traceability has been introduced that can thoroughly manage the use of agricultural chemicals and record the cultivation history of all agricultural products to be shipped. The traceability system records the production and distribution processes—and other processes—until food reaches consumers. Karari has established its own strict criteria to reduce chemical synthetic pesticides and chemical fertilizers by more than either 50% or 30%. Recording cultivation history as traceability information is required. Approximately 200 items per year undergo a surprise inspection to ensure the reliability of the traceability information. All agricultural products sold at Karari are barcoded, and when the barcode is read using a barcode reader within Karari or by a dedicated smartphone application, the producer information and the examination results of the

used pesticide, fertilizer, and residual pesticide can be confirmed as traceability information. Given this mechanism, Karari has succeeded in branding safe agricultural products, and many repeaters visit from outside the town to purchase these products. For this reason, safe agricultural products are at the core of Karari's direct sales business.

4.3. Introduction of ICT

ICT has been used in Karari's direct sales store for a long time as a point of sales system (POS) system called "Karari net," which connects producers, Karari and consumers. The POS system has a sales information storage function, a sales status transmission function, a traceability information browsing function, and a sales settlement function. The sales information storage function is a function that accumulates sales information at a direct sales store. By analyzing the storage sales information, the producer can grasp the selling product and can independently create an efficient cultivation plan and a shipping plan. The sales status transmission function automatically sends by e-mail to the producer of the sales situation at Karari in 30-minute intervals, making it possible to improve the freshness of agricultural products, allowing them to be harvested and shipped according to these sales situations. In other words, this function can increase a product's turnover rate as merchandize in the entire supply chain and prevents the loss of sales opportunities because of missing items. The traceability information browsing function makes it possible to browse the cultivation history and the residual agricultural chemical information by reading barcodes using a Karari barcode reader or smartphone application. Additionally, accessing producer information and the agricultural chemicals and fertilizers being used is possible. The sales settlement function automates the process of settling accounts receivables to producers. Given the effect of this POS system on marketing, the improvement in the freshness of agricultural products, the prevention of sales opportunity losses, and traceability, the Karari brand has been established and enables sales expansion. In this research, a sales status transmission function and a traceability information browsing function are the focus.

4.4. Elements of Social Capital

Several associations have been established in Uchiko town that allows producers to participate and hold discussions. An "intellectual rural school" established in 1986 is a cram school for producers in Uchiko town to learn how to manage small-scale agriculture. Lectures, workshops and so on were carried out regularly at this school, which became a place for producers' continuous learning activities and a catalyst to build a network among producers. "Uchinoko market," established in 1994, is an experimental facility where shipping, collections and liquidation methods required for direct sales store management are learned. This "Uchinoko market" plays an important role as a place for not only human resource development, but also for creating the unity power of producers. These organizations are composed primarily of women, and they act as places where homogeneous connections among individuals are developed, along with people, trust, cooperation, and unity. In other words, this process can be viewed as the accumulation of social capital. In addition, self-governing councils exist as producer organizations, and producers voluntarily developed the rules for Karari and quality control of goods. Several committees, such as for quality audits, store layouts, and event planning were

established and producers belong to some committee and are in charge of role sharing and Karari management. The quality audit committee regularly visits the storefront, inspects commodities, reviews monthly claims processes, and recommends notices to producers. The store layout committee plays the role of devising a display such that products are noticed and checked for violating the rules. The event planning committee and public relations committee develop strategies to attract customers to the direct sales store. Because the council is a self-governing organization of producers and acts voluntarily, diverse and continuous efforts are possible. This council realizes the self-governing of Karari through the social capital accumulated to date.

4.5. Business Model

Before the introduction of ICT and the general road stations business model, Karari was a horizontal division with consumers, road stations, and producers, each of them isolated. This resulted in a disconnected supply chain that lacked cooperation among the players; for example, shortages occurred, goods were not replenished, and sales opportunities were lost. Additionally, because promoting consumers was not possible, appealing to the characteristics of the road stations and differentiation points was not possible. In contrast, by linking each player in the POS system with Karari, executing the optimal sales strategy that connects the supply chain in which each player cooperates was possible. In other words, Karari realized a vertically integrated business model. Karari acts as a platform and provides the producer and consumer with the necessary information. Every 30 minutes, Karari provides sales information accumulated in the POS system for producers, enabling them to grasp the sales situation and making it possible to supplement additional products at accurate timings. Therefore, the POS system allows Karari to arrange fresh agricultural products in stores avoid missing items and prevent loss of sales opportunities. Consumers distribute cultivation information on agricultural products accumulated in the POS system as traceability information, enabling them to visually confirm the safety of the agricultural products. These efforts have established a brand and repeat customers. Figure 3 shows a comparison between horizontal division type and vertical integration type business divisions.

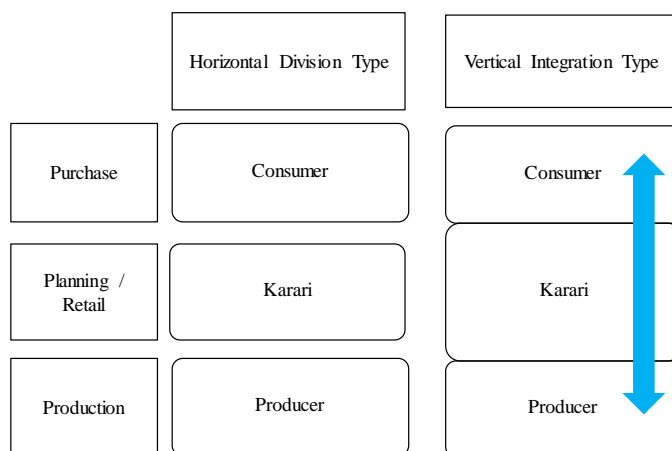


Figure 3. Comparison of Business Models

4.6. Resolving Social Problems

That the business of Karari leads to solutions for the social problems of Uchiko town was verified. Karari's sales at its opening in 1994 was 41 million yen and reached approximately 400 million yen in 2015—much higher than the annual average road station sales of approximately 200 million yen (Ministry of Land, Infrastructure and Transport, 2015). In addition, 60 employees in Uchiko town work to prevent the youth from leaving. In addition, because the town has been picked up by the media and has attracted attention, 10 new producers and eight successors recently appeared. During 2007–2015, 115 people migrated outside the town and engaged in the production of agricultural products and dairy farming. To a certain extent, they seemed to have solved some of the problems faced by Uchiko town in the areas of agriculture promotion, aging and development of successors.

5. Discussion

5.1. Roles of ICT

In Karari's business, ICT's role in bringing social innovation is clarified. First, by paying attention to the flow of data between Karari and producers, products sales situation data are provided from Karari to producers. This flow makes it possible to harvest and ship according to the sales situation and fresh agricultural products can always be arranged at the storefront. Additionally, even when goods are about to sell out, they are replenished immediately, eliminating sales opportunity losses. That is, ICT improves the product turnover rate through the immediacy of ICT, which synchronizes production and sales. These improvements occur because a mechanism to address demand fluctuations is being built according to ICT characteristics, which controls the flow of information and realizes the real-time synchronization of production and sales. Next, with respect to the flow of data between Karari and consumers, traceability information on agricultural products is provided to consumers. Traceability information can be viewed by reading the barcode attached to the item using the Karari smartphone application, making it possible to distribute safety agricultural product cultivation information to consumers and strengthen its brand power by differentiating it in terms of highly safe agricultural products. Because consumers can access this traceability information from anywhere and at any time, the characteristics of ICT enable the removal of temporal and spatial constraints and allow free access to information. Therefore, it is possible to consider that a consistent supply chain is being established among the producer, Karari and the consumer. In other words, before introducing the ICT, Karari was a horizontal division business model that divided the producers, Karari and consumers. As a result of introducing ICT, producers, Karari, and consumers became a vertically integrated business. Karari's business model can be said to have changed. With this vertically integrated business model, information collected in a physical space, such as sales and production information, is analyzed and processed in the cyber space of the POS system. This information is delivered to producers and consumers in an appropriate form to achieve complete optimization. The role of ICT for Karari is analyzed to create an analogy that infers an unknown situation using a known similar situation. For the analogous target area, Specialty Store Retailers of Private Label Apparel (SPA) enterprises are similar because they follow a vertically integrated type of business model.

In general, the SPA mechanism, which enhances competitiveness, is a production and distribution system based on the postponement-speculation principle. The mechanism enables coordination and effectiveness among each division by vertically managing processes, such as planning, manufacturing, and retailing, in the apparel industry.

Features of the apparel industry include: (1) difficulties in consistently controlling the supply chain because of a multi-step production and distribution process, (2) difficulties in reading market changes because of a short product life, (3) low entry barriers, (4) retail stores (mainly department stores) returning to manufacturers when sold out on consignment sales, and so on. Because direct sales businesses have similar characteristics, similarity is considered high. Figure 4 shows a comparison between horizontal division and vertical integration business models of the apparel industry. Supposedly, enhancing product turnover rate and brand power through a vertically integrated production and distribution system is possible. Improvement in the commodity turnover rate is realized by accurately predicting demand using POS data, producing large quantities of items for sale and selling them in a short period. Strengthening brand power is also realized by creating differentiating elements in each process and appealing brands at retail stores. As a mechanism to support SPA, a quick response enables rapid supply of additional items by sharing information throughout the supply chain as facilitated by using IT. The SPA analogy implies that the role of ICT in Karari is to realize a vertically integrated business model.

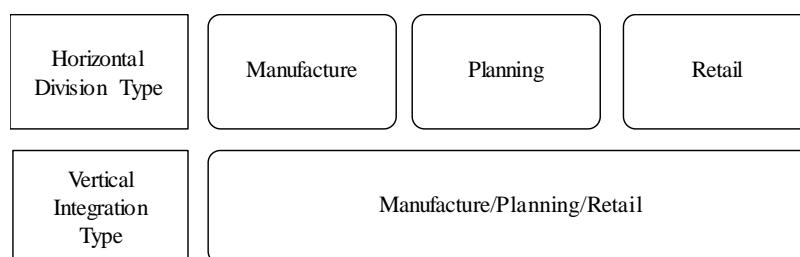


Figure 4. Business Model Comparison between Horizontal Division and SPA

5.2. Roles of Social Capital

In general, the same community is maintained in inter-mountainous areas, and vertical networks based on hierarchical relationships are likely to be constructed. Additionally, men often make the decisions and women rarely actively participate in their own initiatives. Meanwhile, Karari has continuously developed places where producers can talk with one another. At the council in which producers currently participate, the proportion of female members is very high, at approximately 70%. The first president was female and other female presidents were elected. Therefore, almost no hierarchical relationship exists and a flat organization management is developing. The council is divided into several committees, and producers voluntarily participate in some committees and are involved in the management of Karari. Each committee holds a discussion approximately once a week and active discussions are conducted primarily by women. The third sector, Karari, and the council have opportunities to talk with each other on an equal basis, and at the time of each committee meeting, a system exists for Karari staff members to attend and engage in discussions with members of the council. Karari always has places where producers hold talks and solve

operational problems through these discussions. Therefore, strong trust is believed to have been created among producers. Given social norms and obligations, producers themselves make rules by voluntarily creating committees. Furthermore, because women are the center of the operation, a horizontal network is established between producers and Karari. Social capital seems to have been created and accumulated because the three elements of social capital exist—trust, social norms and obligations, and social networks. Social capital creates mutually homogeneous ties and brings trust, cooperation, and unity, encouraging cooperative action toward solving social problems. Karari has been promoting an environmental conservation type of agriculture since 2005 and has introduced traceability. It established a brand known for safe agricultural products, which became a major turning point for the success of its social business. Producers were obliged to record the cultivation history, and the use of pesticides and chemical fertilizers was strictly restricted. Generally, such efforts are difficult for the producer to put into practice, as opposed to considerable operational burden and cost increases. However, Karari is smoothly introducing an environmental conservation type of agriculture. Moreover, the ICT introduced in 2004 aimed to convert business models and enhance competitiveness. If many elderly individuals lack high IT literacy, learning about ICT and gaining an understanding of new operational methods are difficult at the time of introduction, but smooth introductions are accomplished. These introductions can be thought of as a “norms of reciprocity” worked by Karari’s social capital accumulated to date in expectations of a future equilibrium and without asking for a return. In particular, Putnam (1993) emphasized reciprocity norms. Karari can be viewed as having changed strategy by taking cooperative action that aimed to increase future profits, even given a temporary cost increase attributable to the accumulation of social capital to date.

5.3. Mechanism of Social Innovation

In the case of Karari, this section clarifies the social innovation mechanism. After the role of ICT was introduced in 2004, a consistent supply chain was established among producers, Karari, and consumers through the POS system, and the business model was converted from a horizontal division type to a vertically integrated type.

As a result, always arranging fresh vegetables at stores became possible by improving the product turnover rate. In addition, effectively distributing traceability information that certified safe agricultural products to consumers became possible, and brand power was strengthened. The role of social capital is to smoothly introduce traceability to reduce the use of agricultural chemicals and chemical fertilizers and to record the cultivation history; moreover, ICT resulted in a business model transformation through the norms of reciprocity accumulated in Karari. Carrying out innovative efforts and differentiating Karari from other road stations and stores through branding that emphasizes fresh, no shortages, and safe became possible.

As a result, Karari can be differentiated from other road stations and stores, and the store sees 800,000 visitors annually—many people have purchased brand-name and safe agricultural products. In addition, the safety of 60 jobs in Uchiko town enabled 10 new producers, eight successors, and 115 migrants from outside the town (2007–2015) to migrate, thus promoting agriculture. To some extent, the operation is viewed as a social mission that can solve the problems of aging and developing successors. In 2001—before the introduction of ICT—sales were 340 million yen; in 2004, after the introduction of ICT, sales increased to 450 million yen. Because

sales increased after introducing ICT, business feasibility also exists. Furthermore, innovation is said to exist because it has been transformed from a horizontal division business model to a vertically integrated business model by the introduction of ICT. Therefore, calling innovation a social innovation is possible if it satisfies the three requirements of a social business. Therefore, social innovation can be considered to be created and succeeded as a social business through the influence of accumulated social capital and ICT on the social problem that Uchiko town faced. The mechanism of creating social innovation is shown in Figure 5.

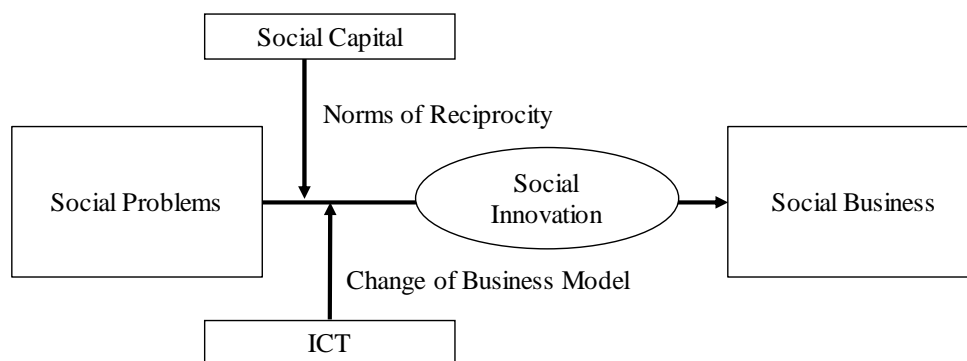


Figure 5. Mechanism of Social Innovation

6. Conclusion

Many studies on the social innovation mechanism exist, but they have focused on interactions between people and entrepreneurship. In this research, the focus and analysis is on ICT as something other than “a person” and social capital to develop a theoretical discussion that influences the creation of social innovation. As a result of the analysis, the significance of this research is represented by the following three points: first, social innovation has been clarified as being created not only from human interaction, but also from business model change through ICT. A comparison and examination of the business models before and after the introduction of ICT shows that the models changed from horizontal division to vertically integrated, and a consistent supply chain was established among the producers, Karari, and the consumers. Furthermore, sales expanded from improved freshness resulting from a more efficient product turnover rate using a sales status transmission function, and from a strong brand that resulted from effective distribution of traceability information to consumers using a traceability information browsing function. These results indicate that to make a social business successful in geographically disadvantaged mountainous areas, total vertical optimization using ICT is needed among the players involved in the business to ensure a competitive production system. Second, this research revealed the existence of social capital as an influence on social innovation. Until now, social capital has not received much attention in studies on social innovation. This research shows that a strategy of food safety and introducing ICT—the core of the Karari business—results in a short-term increase in costs and smooth running operations through the norms of reciprocity of accumulated social capital. Third, as a social innovation mechanism, social innovation was clarified as playing the role of accumulated social capital and ICT for social problems. Without the accumulation of social capital, the introduction of ICT is not promoted; therefore, each on its own cannot create social

innovation.

In other words, social capital and ICT are in a relationship similar to that of wheels. The novelty of this research is that it modeled this relationship. A social problem that was not previously established as a business may become a business when creating social innovation. Therefore, social entrepreneurs working on social problems in the future will face social innovation from the viewpoint of how to accumulate social capital and how to co-invent with ICT. In particular, revealing that social capital influences social innovation has become a new approach in social innovation research. Additionally, because this research focused on a single case in which ICT was introduced in a social business, future studies should expand such analysis to other contexts to deepen the understanding of social innovation.

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