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VALUE CO-CREATION THROUGH TECHNICAL INTERN TRAINEES IN JAPANESE HEALTHCARE

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Abstract

A long-term care insurance system in Japan was established in 2000 to specifically care for the elderly, but due to the declining birthrate, the working population is decreasing and there is a shortage of long-term care workers. In 2016, the Japanese government established the Asia Health and Wellbeing Initiative (AHWIN) to address this shortage of long-term care workers, aiming to build a sustainable healthcare system throughout the Asian region. In one such measure people from Viet Nam can learn Japanese-style long-term care skills as technical interns in Japan. The APS (Aijinkai, Pegasus, Seichokai) Consortium comprising three healthcare business groups based in Japan, has been actively implementing AHWIN initiatives. A case study of one such initiative examined based on the concept of value, and the co-creation of value between technical interns from Viet Nam and the Japanese healthcare system, with explanation of the long-term care environment. First, we summarize the origins of the healthcare system in Japan and clarify that the issue from the perspective of value. Next, we examine the shift to value creation through value co-creation between service providers and users, rather than unilateral process-oriented value creation, by utilizing the healthcare ecosystem based on the service ecosystem in service-dominant logic. The mega-level and macro-level value co-creation in the healthcare ecosystem was also found to affect the meso-level and micro-level value co-creation.

Keywords: Healthcare, Aging Society, Value Co-Creation, Healthcare Ecosystem

1. Introduction

The public health insurance system in Japan began in 1961 when all citizens were enrolled in a public health insurance scheme in order to build a welfare state after the Second World War. This gave citizens across the country the freedom to use the hospital of their choice. Furthermore, the public health insurance system was reformed in 1973 so that the 30% of the costs typically covered by patients were now covered by the public funds for people aged 70 and over, effectively making their healthcare free. This led to a 20-fold increase in hospital admissions for the elderly,

with acute care hospitals taking the place of institutions for the elderly. Elderly patients were mostly hospitalized for chronic diseases without needing treatment for acute diseases. Acute care hospitals were then unable to obtain sufficient reimbursement, and "commercialism" brought by healthcare services, such as excessive testing and drug prescriptions, became widespread and a major factor in the increase in healthcare costs. The Act of Assurance of Medical Care for Elderly People established geriatric healthcare facilities in 1984, and from 1990, inpatient healthcare management fees were introduced, put a limit to the cost of drugs and tests. The financial resources of the healthcare insurance system were nonetheless still too limited to support the growing number of elderly people receiving medical treatment, and the elderly population increasingly required healthcare support. A system dedicated to the care of the elderly was legislated as the Long-Term Care Insurance Act, which came into force in 2000. In addition to residential services, elderly people aged 65 and over with difficulty in their daily lives at home can now receive various public services under the long-term care insurance system (Ikegami, 2017; Shimazaki, 2020).

The ever-increasing cost of healthcare benefits has become a social problem, contributing to the financial deterioration of Japan's overall social security benefits. As a measures to control the ever-increasing cost of health care, the Japanese government has tried to reduce benefits by adjusting healthcare fees and shortening hospital stays. This unilateral reform of the healthcare system is based on the values of those who provide services, and not necessarily of patients. As shown in the case of the National Health Service in the United Kingdom, which has been said to have failed to achieve cost efficiency by strongly focusing on the value to the service provider (Young and Tomlin, 2008), it is necessary to understand the value of both service providers and service users in order to achieve systematic reform. Understanding the values of both sides is necessary to achieve this.

Previous studies have mainly described value co-creation at the micro level and have only discussed the overall structure. Therefore, in order to clarify the relevance of each level in the healthcare ecosystem, this paper examines the relevance of each level of the hierarchical structure (micro-level, meso-level, macro-level, and mega-level) in the case of the APS Consortium's acceptance of technical interns. As a result of the initiatives of case, 11 technical intern trainees have completed the program, 7 have been selected to work at nursing care facilities in Japan, and 2 will work at Skill Lab in Viet Nam to train Japanese style nursing care workers. When considered from the perspective of the healthcare ecosystem, the initiatives of the APS consortium (meso-level) at each nursing facilities (micro-level) have contributed to the employment of nursing care workers in Japan (macro-level), and have also led to technology transfer beyond national borders (mega-level). By doing so, it was shown to be one contribution to the problem of the shortage of nursing care workers in Japan, and furthermore the purpose of paper is to contribute to a framework for value co-creation in healthcare.

The rest of the paper is structured as follows: First, literature review is presented in Section 2. Then we describe the practices that have been undertaken as examples of value co-creation, and then organize the examples into the levels of the healthcare ecosystem. Next, the sustainability process of long-term care will be clarified from the perspective of the value creation process by using strategy maps. Finally, we conclude the relevance of the healthcare ecosystem based on the evaluation of the value created.

2. Literature review

The concept of the value to service providers and users has been studied as "value co-creation" in recent years. For example, Prahalad and Ramaswamy (2004) describes value co-creation using the relationship between a cardiac pacemaker and a patient as a case study. Porter and Teisberg (2006) also argue for the importance of focusing on value for the patient, not just cost, in the United States healthcare system. Furthermore, there have been proposals of concepts such as service-dominant logic (SDL, Vargo and Lusch, 2004) service logic (SL, Grönroos, 2006) and public service logic (PSL). PSL concept points out that years of adherence to a system focused product dominant as a service has led to inefficiency of the service (Osborne, 2021), which is consistent with the process that has led to Japan's "commercialism" service delivery in healthcare.

In Japan, the value of healthcare has been a one-sided product of the service provider for many years, since the establishment of public health insurance, with the idea of investing large amounts of resources and calculating reimbursement according to the value of the process. In the midst of tight finances, however, it is necessary to steer in the direction of greater efficiency by more limited investment of resources as needed. With the establishment of the long-term care insurance system in 2000, the aim was to create a "comprehensive community care system" (Hatano *et al.* 2017). Housing, medical care, long-term care, prevention, and life support are provided in an integrated manner through collaboration between hospitals, long-term care providers, community organizations, and local governments, so that patients can continue their own lifestyles to the end of their lives in the areas familiar to them. Under the traditional healthcare system, the value of healthcare has been provided by healthcare providers to patients. In the comprehensive community care system, however, the value of healthcare is co-created by patients and healthcare providers. Value co-creation by patients and healthcare providers at institutional and community levels can be reasonably said to determine the success or failure of Japan's health sector reform.

Palumbo (2017) argues that patient empowerment is important for value co-creation in healthcare that value co-creation is facilitated by the correct exercise of patient empowerment, which is ideally guided by organizational literacy. SDL describes value co-creation as a service ecosystem that consists of micro, meso, and macro-levels (Lusch and Vargo, 2014). Frow *et al*. (2016) applied this service ecosystem concept to healthcare and proposed a four-layered "healthcare ecosystem" by adding a ‘mega’-level to the hierarchy. Value co-creation between patients and healthcare service providers is described as micro and meso-levels in hospital organizations, macro-level in state health authorities, and mega-level in government agencies. Since then, there have been sporadic studies on ecosystems in healthcare. Palumbo (2017) explains that patient empowerment promotes micro-level value co-creation, and that meso-level (organizational level) literacy has an impact on patient empowerment.

3. Methodology

In this paper, 11 technical intern trainees from Viet Nam learned long-term care skills in Japan, 7 trainees were employed at Japanese nursing care facilities, and 2 trainees were assigned to work in their home country of Viet Nam to pass on Japanese long-term care skills. This case study of this initiative is considered to have contributed to the problem of the shortage of long-term care workers at each of the APS Consortium's nursing care facilities and increased business continuity because value co-creation was implemented in a variety of settings. To explain this, the process leading to business continuity is conceptualized using a strategy map. Next, based on the healthcare ecosystem, which is a previous study, we will organize at which level value co-creation was implemented and how it related to other levels, using specific examples, and discuss the relevance and value dimensions in the hierarchical structure of the healthcare ecosystem.

4. Value co-creation practices and results

The Japanese government established the Promotion Council on the AHWIN in 2016, with government ministries and agencies involved transversally connected. AHWIN aims to promote bilateral and regional cooperation that fosters sustainable and self-reliant health care systems in the Asian region (AHWIN, 2022a). In 2017, the Private-Sector Consortium of AHWIN was launched as a gathering of healthcare-related organizations and private-sector business operators to initially address four goals in cooperation with the Government’s Promotion Council on AHWIN (AHWIN, 2022b). These four goals are:

i. Organizing Japanese-style long-term care worth introducing into Asia
ii. Organizing the exchange of human resources and education related matters
iii. Support for entry into overseas markets of long-term care service providers
iv. Dissemination of information and dialogue

We, Aijinkai Healthcare Corporation (AHC) had a long history as a domestic long-term care provider and planned to participate in the Private-Sector Consortium of AHWIN in 2018 with the aim of carrying out the first two of the above goals.

A survey on long-term care practices reported significant differences in methods and techniques of long-term care among organizations, facilities, and individual long-term care workers (Japan Association of Certified Care Workers, 2015). To realize the above goals 1, it was necessary to establish a model of standardized long-term care worthy of the name of the Japanese-style long-term care and a system for educating foreign people about this model. We considered collaboration with other healthcare corporations essential to develop such a model and a system. Therefore, we formed a consortium, named APS consortium, with Seichokai Healthcare Corporation and Pegasus Healthcare Corporation, each of which has a long history as a domestic long-term care provider and have a system in place to provide high-quality long-term care education. As the APS Consortium we collectively joined the Private-Sector Consortium of AHWIN.

The Japanese government put the Act on Proper Technical Intern Training and Protection of Technical Intern Trainees into force in 2017 and the Technical Intern Training Program (TITP) was implemented. TITP is an initiative that transfers technical skills, technology, and knowledge to technical intern trainees from developing countries so that they will be able to contribute to economic development in their respective countries (Tokyo Labor Consultation Center, 2021). To achieve the above mentioned goals 2, we planned a modified TITP with additional pre-educational content that provides foreign people with long-term care skills as well as Japanese language education specializing in long-term care in their home countries prior to entering Japan. The Viet Nam Committee of the Private-Sector Consortium of AHWIN was particularly active in supporting technical intern trainees in the long-term care sector from Viet Nam. We therefore implemented our modified TITP for Vietnamese and opened a school, the APS Consortium Long-term Care Skill Lab (hereinafter, ‘Skill Lab’), in Hanoi to provide pre-education on Japanese-style long-term care.

Our modified TITP consists of three phases (Figure 1). In Phase1, which is usually half a year, a Japanese language school in Hanoi provides general Japanese language education to technical intern trainees of our modified TITP. Meanwhile, we continuously dispatch active certified care workers to the Skill Lab and provides education on Japanese language specializing in long-term care and training in the fundamental caregiving skills required for involvement in the long-term care services in Japan. To provide this education and training in Viet Nam, the APS Consortium Core Member Committee was established to formulate a curriculum and to select instructors. In Phase 2, which is three to five years, these trainees come to Japan and receive on-the-job training (OJT) at a long-term care facility that belongs to one of the three healthcare corporations that constitute the APS Consortium. The APS Consortium Core Member Committee created an original “Technical Intern Trainees Acceptance Manual” for standardization of OJT. The Core Member Committee is also responsible for evaluating achievement by pre-education, monitoring achievement of OJT, and providing feedback to the Skill Lab about the education methods in Phase 1. In Phase 3, the long-term care technical intern trainees who have improved their practical caregiving skills in the OJT in Japan in Phase 2 return to Viet Nam. We create job opportunities for these graduated trainees in Viet Nam by supporting employment of long-term care facilities, hiring them as instructors at the Skill Lab, and supporting for opening facilities that provide Japanese-style long-term care.

To date, 44 technical intern trainees have completed the pre-education at the Skill Lab and have come to Japan. To be a technical intern trainee (i) at a long-term care facility, he or she must fulfill the Japanese language ability requirement of passing the N4 Japanese-Language Proficiency Test, representing “the ability to understand basic Japanese” (Social Welfare and War Victims' Relief Bureau Ministry of Health, Labor and Welfare (MHLW), 2018). The Japanese proficiency of the 44 trainees at the time of entry was 1 for N2, “the ability to understand Japanese in everyday and various circumstances to a certain degree”, 27 for N3, “the ability to understand Japanese used in everyday situations to a certain extent”, and 16 for N4. Such results were higher than the entry requirement and indicated that the additional Japanese language pre-education conducted at the Skill Lab was successful. In addition, the APS Consortium established an

external evaluation system to objectively verify the effectiveness of the education. Interview surveys with 44 trainees immediately after they entered Japan were conducted by an associate professor of education as the external evaluator. They were found to fully understand that the long-term care provided in Japan is not just support for living, but support for the independence of elderly people (Kodaira, 2020). Although trainees were worried about living in Japan, they were very pleased to see the instructor who had been teaching them in Hanoi and had a relationship of trust with them (Kodaira, 2021). All of them were highly motivated to work in the long-term care facilities of the APS Consortium, and it was concluded that the pre-education for Japanese-style long-term care in the Skill Lab was sufficiently successful.

In Phase 2, the APS Consortium Core Member Committee monitored whether standardized OJT was being conducted in accordance with the Technical Intern Trainees Acceptance Manual at each of the APS Consortium facilities, and there was regular evaluation of each technical intern trainee's learning. Training for technical intern trainees went satisfactorily and all of them acquired N3 language level within a year for promotion to technical intern trainee (ii). An additional interview survey was conducted by the external evaluator around nine months after trainee entered Japan, and revealed that none of them had anxieties, worries, or troubles regarding their lives and work in Japan, except for complicated communication in Japanese such as seeing a dentist. Based on the interview results, they were assessed regarding relationships at the internship, motivation for work, workplace atmosphere, and dissatisfaction and discomfort at the internship. A friendly human relationship was shown to be established in which the technical intern trainees and the Japanese long-care staff recognized each other, and the work environment was such that the technical intern trainees could work in a lively fashion with autonomy. The external evaluators also conducted an interview survey of Japanese long-term care instructors. All the trainees were reported to be enthusiastically, earnestly, and sincerely engaged in their work. The instructors themselves were also found to be given the opportunity to learn, such as rethinking their own practice, re-learning about caregiving skills, and deepening their thoughts about long-term care. In particular, instructors who were involved in education at the Skill Lab in Hanoi were recognized for their remarkable personal growth through contact with different cultures.

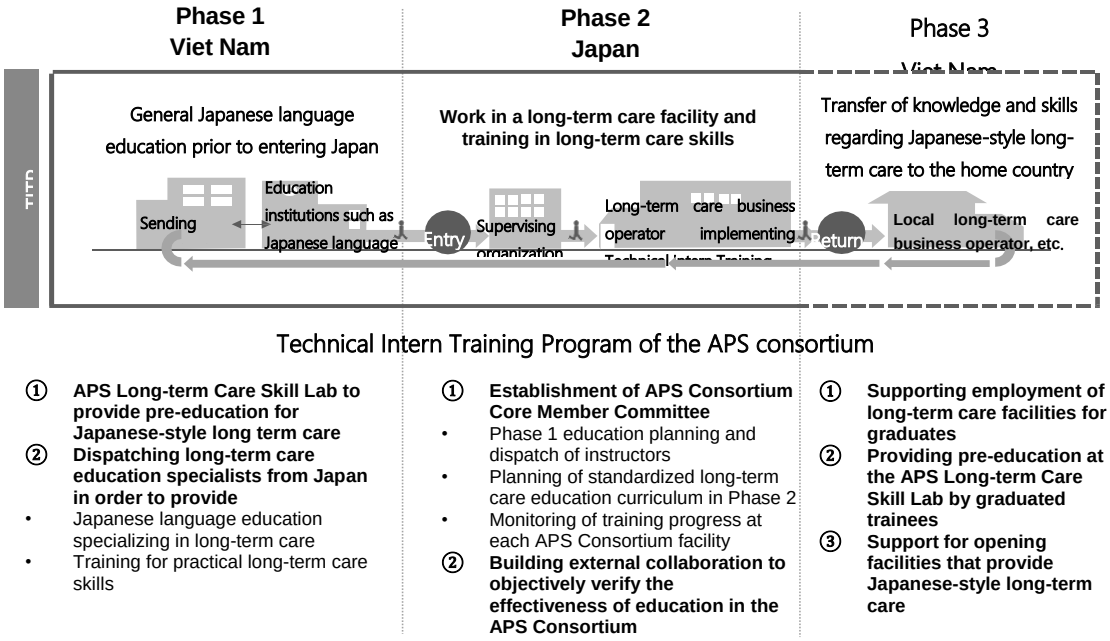

Figure 1. A conceptual diagram of the modified TITP implemented by the APS Consortium
Notes: APS Consortium: Aijinkai-Pegasus-Seichokai Consortium, TITP: Technical Intern Training Program
Source: Aijinkai Healthcare Corporation International Department

The progress of Phase 3 of our modified TITP has been significantly impeded by the effects of the COVID-19 pandemic. Of the 11 technical intern trainees who will complete the training as a technical intern trainee (ii) in March 2022, seven have been decided to work in Japanese nursing care facilities instead of returning to Viet Nam. Three of the remaining four trainees want to get medical and long-term medical care jobs after returning to Viet Nam, and one of them will be hired as an instructor at the Skill Lab in Hanoi and the other to be employed at our Skill Lab in Viet Nam. Due to the impact of COVID-19, the places of employment for the remaining one trainee have not yet been fixed. The last trainee is looking for another job because it is difficult for her to get a job at a long-term care facility after returning to her hometown in the countryside.

5. Discussion of healthcare ecosystem and value dimensions

According to Frow, *et al*. (2016), levels in the healthcare ecosystem are defined as shown in Figure 2. Considering this, our approach outlined in Section 3 can be explained as follows: From the meso-level to the macro-level, the formation of the APS Consortium has led to the co-creation of values among healthcare organizations at the meso level, highlighted issues of healthcare skills that differed among facilities, and it has created new value in the form of standardization of skills at the macro-level that transcends among organizations.

From the macro-level to the mega-level, using macro-level standardized skills as a source of value, the value as a solution to long-term care in Japan and the value of human resource development to help alleviate the problems of an aging society in Viet Nam in the future will be co-created, and it is expected that mega-level value co-creation will be achieved in the future.

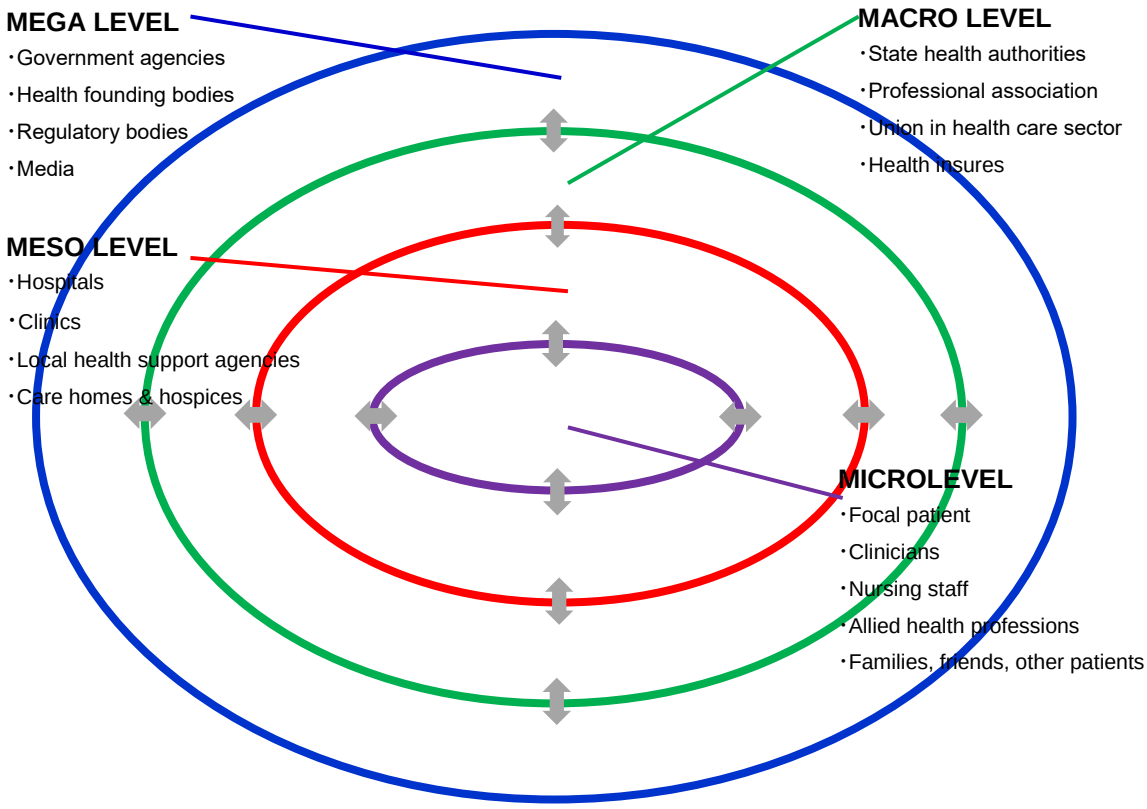

Figure 2. Health care ecosystem
Source: Frow *et al*. (2016)

The sources for the co-creation of value (sources of value) can be explained by intangibles or operant resources in SDL. Kaplan and Norton (2004) define the ultimate source of sustainable value creation as intangible assets, which include human capital, information capital and organizational capital. In addition, Lusch and Vargo (2014) state that value is always co-created by operant resources of actors who are co-creators of value. Operant resources are those manipulated by other resources to produce an effect, such as technology, knowledge, or information. In contrast to operant resources, resources that can be manipulated, such as machinery, equipment, raw materials, funds and people, are called operand resources. In other words, intangible assets and operant resources are very similar and the source of value is the intangible assets such as competence, skills, information, and expertise accumulated through learning and experience.

Our practice is to standardize the high-quality Japanese healthcare skills in the APS Consortium and to provide learning and experience accumulation for Vietnamese trainees as organizational capital, a source of value. At the same time, APS Consortium needs to accumulate Vietnamese customs and culture as learning and experience, as a means of further improving the technical internship program for the Vietnamese participants. The co-creation of the APS Consortium's healthcare skills, which are the source of value, with Vietnamese customs and culture will lead to value co-creation on a mega-level that goes beyond national borders.

Figure 3 shows a strategy map of the APS Consortium's practices. Long-term care in Japan is a major factor in determining the success or failure of business continuity in terms of the availability of highly skilled professionals. By accepting apprentices, the intangibles of skills, knowledge and diversity are fostered from the perspective of learning and growth, and the value of human capital is enhanced by the increased educational skills received by the care workers. From an internal process point of view, the sources of value fostered by the learning and growth perspective lead to an awareness of quality, compliance through the retention of human resources, the implementation of high-quality patient-centered medicine (Stewart *et al.* 1995), and clearer and more efficient information sharing between staff. From the patient's (customer's) point of view, the quality of the services provided is assured, and by extension, from a financial point of view, sustainable income is secured. In this way, the continuity of long-term care in the organizations participating in the APS Consortium will be ensured.

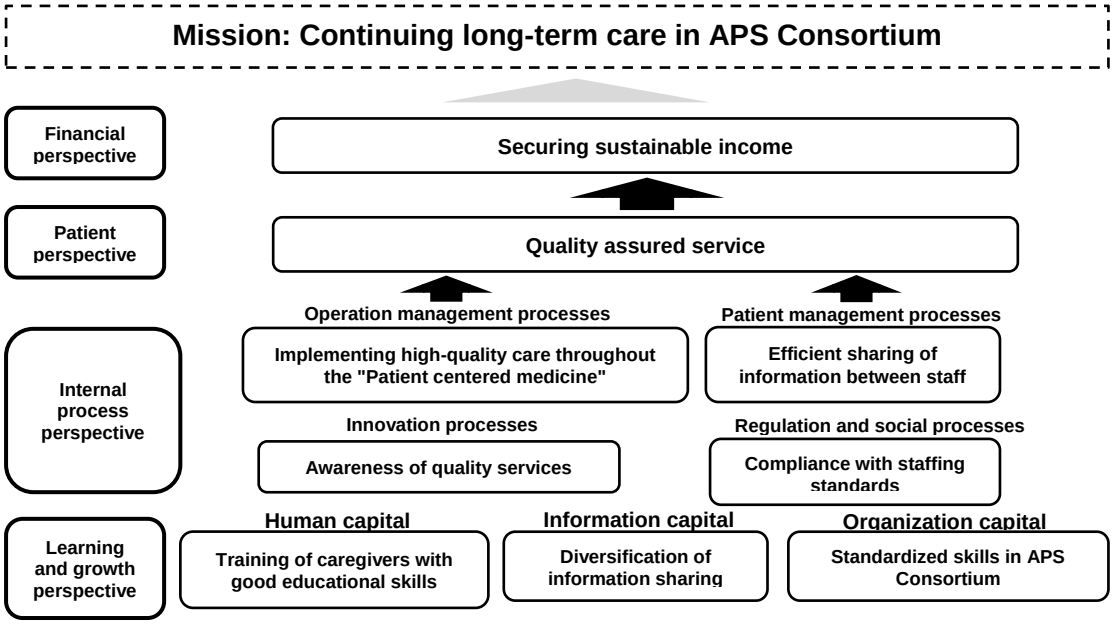

Figure 3. Strategy map for technical intern trainees in APS Consortium

Note: APS Consortium: Aijinkai- Pegasus-Seichokai Consortium

Source: Authors' own concept

Furthermore, for the case studies discussed in this paper, we will consider how value is expressed SDL, SL and PSL divide the concept of value into the following four dimensions (Grönroos, 2006; Lusch and Vargo, 2014; Osborne, 2021):

i. Value-in-exchange; value is indicated by price or consideration.
ii. Value-in-production; value is embedded in the goods provided by the service provider.
iii. Value-in-use; value is created through use.
iv. Value-in-context; value is individually determined by the beneficiary.

Table 1 summarizes the case study in this paper using these principles. Considering what is summarized in Table 1 in the case of this paper, Japan's process-oriented healthcare fee system can be explained by the dimension of value-in-exchange. The challenge is that the public health insurance system is under financial pressure and as a solution the Japanese government has implemented a healthcare reform that does not reflect the value of the "patient" as a user. This is a one-sided reform from the perspective of the service provider, the dimension of value-in-production. On the other hand, our approach can be summarized as value-in-use, value-in-context, which incorporates the perspective of service users. Value-in-exchange and value-in-production have left problems for the Japanese public healthcare insurance system as described above. However, it has the merit of being quantifiable and in showing value quantitatively. On the contrary, value-in-use, value-in-context is considered to be in line with the values of the user of the service, but quantifying the value is difficult. We, therefore, believe that it is necessary to consider the value in all four dimensions when putting a service into practice.

Table 1. Organization of the four dimensions of value in the case study of this paper

Dimension of Value	Case study	Limitations of the dimension
Value-in-exchange	The value of healthcare has been rewarded through the evaluation of processes.	It has created a "commercialism" service that has put pressure on public health insurance finances.
Value-in-production	Healthcare reform was implemented from the perspective of the service provider only.	The value of the 'patient' as a service user is not reflected in the reform.
Value-in-use	Technical interns and educators create value through their actual experience (use).	Value is created by experiencing (using) it, and contextual value is created when this is evaluated by the beneficiaries of the value. However, value cannot be quantitatively evaluated.
Value-in-context	The value is ultimately judged individually by the technical interns and educators.	

Source: Authors' own concept

In Section 5, we discussed macro-level and mega-level value co-creation, and in Section 5, we discuss how macro-level and mega-level value co-creation affects meso-level and micro-level value creation.

6. Conclusion

As mentioned in Section 5, Frow *et al*. (2016) define the "patient" as a micro-level. To explain the impact of value on the "patient", there needs to be a clarification of the relationship between the mega-level, macro-level, meso-level and micro-level. Lusch and Vargo (2014) explain the relevance of levels in the ecosystem as follows:

i. Micro-level system promotes the creation of the meso-level system, and the meso-level system promotes the creation of the macro-level system.
ii. Micro-level system facilitates the creation of the meso-level system, and the meso-level system facilitates the creation of the macro-level system, but there is also a filtering effect from the macro-level system to the meso-level system and then to the micro-level system, and this filtering effect influences the actors in the sub-systems.

iii. Once the macro-level system is established, it can influence the subordinate meso-level and micro-level systems.

In light of the above, we believe that the value co-creation of the APS Consortium formed at the meso-level has led to the standardization of skills to be taught to technical trainees and has facilitated value creation from the meso-level to the macro-level. In addition, the standardized skills were put into practice as a source of new value at the macro-level, and as a form of value co-creation at the mega-level between the nations, as shown in Section 3 of this paper. This initiative is also thought to have led to the continuation of long-term care at each of three healthcare corporation, which participated in the APS Consortium, and it can be explained that value co-creation was filtered from the macro-level to the meso-level. Furthermore, as mentioned in Section 3, a survey we conducted on Vietnamese technical trainees suggested that good relationships were established through careful follow-up by Japanese healthcare professionals. The survey also showed that the Japanese healthcare staff who were instructing the trainees had also grown significantly because it gave them an opportunity to review their own skills and knowledge. In other words, it can be explained that micro-level value co-creation was achieved by the intangibles (operant resources) of the Japanese healthcare staff and the Vietnamese technical interns in each healthcare organization. In this way, the mega-level and macro-level value co-creation has been filtered through to the meso-level and micro-level value co-creation.

Outside of the health care field, there are scattered problems between technical interns and their employers (Nihon Keizai Shimbun, 16 August 2016). This is co-destruction of value. To avoid and prevent this, it is important to consider value in all four concepts of "value-in-exchange," "value-in-production," "value-in-use," and "value-in-contextual," and in particular to realize value co-creation at the micro-level.

In this paper, based on the concept of the healthcare ecosystem, the APS Consortium's initiatives are examined with a focus on value co-creation at the macro and mega levels. In our training system value co-creation at the macro and mega levels penetrated value co-creation at the micro and meso levels. However, this paper is only one case study, and we believe that the sustainability of long-term care in Asia will be enhanced by the accumulation of many such initiatives. As the population ages not only in Asia but also around the world, further research is needed on the sustainability of long-term care in aging societies.

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