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Challenges of Managing a Network Business

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Abstract – This study aims at identifying and analysing the key challenges in managing a network business. The starting point of the paper is the alleged need for new kinds of theoretical frameworks which take into account value creation situations businesses face today. Hence, this paper introduces the value co-production framework as an alternative perspective to the existing approaches built in the industrial era (i.e., value chain thinking). This framework elevates knowledge and relationships in the locus of business and argues for reconfiguration of roles, actions, and interactions among the networked actors.

Based on our study on a network-like, two years old joint venture firm, we demonstrate how the value co-production framework functions in practice. Moreover, we suggest that the future management competence lies in company's ability to manage interactions, not individuals or individual companies. Thus, studying different kinds of network approaches in relation to proposed framework would give a deeper understanding of the ways by which networks and relationships drive value co-production.

Keywords –innovation-based business, value co-production, relationships, knowledge

I. INTRODUCTION

Transformation from manufacturing to service economy, globalization of business, business opportunities brought up by ICT, and a need to partner with companies across industry sectors set new demands for business competence. The frameworks for understanding and managing business built in the industrial era are not anymore applicable to the majority of value creation situations businesses face today [1]. In demand, particularly, are theoretical frameworks that help to better understand the networked nature of value creation in business. Networks support growth and provide innovative capacity [2]. New competence emerges and develops into business opportunities through network relations between organisation's members and non-members, and with the help of their knowledge and competence [3]. Thus, the business opportunities arising from innovations should not only be scrutinised through the traditional and single-minded approaches (e.g., value-chain thinking) [4] but rather through more diverse approaches to business (re)framing. Examining the innovation process with a framework of value co-production [1] [5] [6] or capability

co-creation [3] allows for a deeper understanding of the dynamics of networked business.

The purpose of the paper is to identify and analyze the key challenges in managing a network business. Thus, the research question can be formulated as: “*What are the key challenges in managing a networked business?*” The study aims at generating empirical knowledge for understanding the networked nature of value creation in innovation-based business. The study joins in the line of argument by Normann and Ramirez who call for research on the ways by which economic actors design new offerings, join in innovative co-productive relationships and reconfigure the roles of each co-producer in the process of co-producing value [1].

We present our arguments in four steps. First, we shortly introduce the conceptual framework of value co-production. Second, we describe the research setting and the methodology. Third, we present results of the analysis of the case firm Alfa. We go through seven critical business decisions with a discussion of their related factors. Finally, we conclude by presenting some remarks on the subject matter.

II. INNOVATION-BASED BUSINESS AS CO-PRODUCTION OF VALUE

The industrial view treats innovation activity as a question of linear value production i.e., value chain thinking. It is thought that the actors continuously increase the value by working in the assemblage of sequential operations till the products or services reach the customers [4]. Innovation activity as a process of value co-production highlights the value creation as a synchronic and interactive, not linear and transitive [6]. Thus, the value co-production framework allows for reconsidering the roles, actions, and interactions among economic actors [1].

The framework of co-production does not regard customers as consumers destroying value created by the producers. Instead, customers mutually co-create or co-invent value over time both with their suppliers and their own customers. [1] [7]

The value co-production framework allows for treating the role of customer as a partner in co-production similarly to the role of a supplier or other network partner.

Thirdly, the new logic of value co-production elevates the individual knowledge/competence and relationships between the actors in the locus of business. The dynamic properties of

knowledge/competence needed to bring forth new innovative solutions to the market invites more actors inside as well as outside the organization to be engaged in the co-productive processes. [1] [3]

Figure 1 illustrates Sveiby's idea of value co-production and capability co-creation emerging through the interactions between organization's external relationships, internal relationships, and individual knowledge/competence. In the figure, individual actors use their competence to create value by transferring and converting knowledge externally and internally to the organization they belong to. The external relationships comprise the ongoing and dynamic interactions between the members non-members of an organization. Correspondingly, the internal relationships refer to the internal actions the members take, the way they work and communicate with each other, and the beliefs, values, and stories they share with each other. [3]

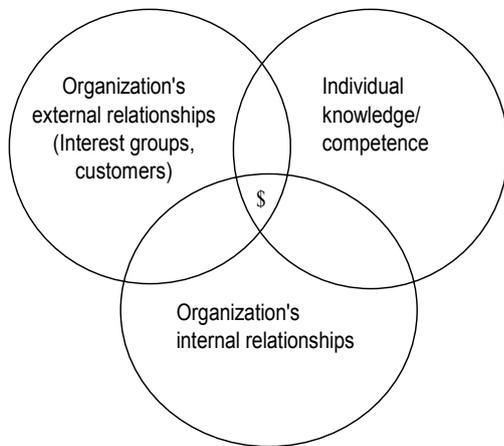


FIGURE 1
CO-PRODUCING VALUE THROUGH RELATIONSHIPS AND
KNOWLEDGE/COMPETENCE [3] (Modified.)

The value co-production framework best describes organizations which, in addition to their own knowledge/competence, utilise the knowledge/competences of the external actors. It is also applicable to organizations which have a vision-based network and a capability to combine resources and competences of different actors into a new and functioning value (co-)production systems. These organizations need to focus on utilising aggregates of different resources and competences on an expanding scale [5]. Therefore, value creation means building a better and better fit between relationships and knowledge [6].

III. RESEARCH SETTING

Research methodology

In this study, we follow the basic ideology of case research [8]. In broader terms, our approach is qualitative [9], focusing on description and analysis of processes taking place in a case company. Thus, our study is an empirical study examining a phenomenon in its real environment.

We adopted a qualitative, case research design [10]. The research material was analysed with a content analysis method. Researcher triangulation was implemented in order to enrich and deepen the analysis of the material [11].

Data collection

Our primary contact during the data collection process was the founder member of the firm called Alfa. All interviewees (total of six persons) were chosen according to his recommendations. The interview data was collected by three different researchers in two separate points of time, spring 2004 and between late autumn 2005 and early spring 2006. All interviews were conducted in Finnish, and they were recorded and transcribed.

Four persons were interviewed both in 2004 and 2006, and two only in 2006. The four persons interviewed twice are the key persons who had been working in the project even before the establishment of Alfa. Also the two persons whom we interviewed only once had been with the company from the beginning. The purpose of repeating interviews among the four key persons was to include also a temporal scope in this study.

The interviews lasted between three quarters and two hours. The interviews focused on the processes of organising, developing, and conducting the company as well as on the challenges it faced during the period of the study. The interviews were conducted as open-ended to bring forth actors' own interpretations of the situation [11].

Data analysis

Interviews were recorded and transcribed word for word. Only those little words such as "um" and "you know" were left untyped. The research material comprises approximately 170 pages of transcript.

The method of content analysis was used [12]-[13]. The analysis proceeded through six phases [14]:

First, we decided that the unit of data analysis would be a statement, which could be a word, a sentence, part of a sentence, or a thought comprising of many words and/or sentences.

Second, we got acquainted with the interview material by reading the typed material through many times and by listening to the tapes before starting to analyse them. This phase took quite long time, because all researchers did not participate in the actual interviews but received only transcribed material afterwards.

Third, we simplified the data by coding those arguments and enunciations that were related to our research problem. Then, all similar codes were grouped together into a same category.

After that, we continued merging categories with the same contents. Interpretation was used in all the phases described above.

Finally, we used researcher triangulation also by assessing the creditability of the data analysis. In other words, two of the researchers analysed the empirical material together and one of the researchers did analysis of the same data independently. Then all researchers discussed and compared the interpretations.

IV. CO-PRODUCTION OF VALUE THROUGH NETWORKS – CASE ALFA

The case firm Alfa was established to bring a technological innovation to the market. The innovation combines know-how from two industries and thus could be described as a hybrid media. Innovation process dates back to 1997, when a product development manager of a company was assigned to study the future scenarios of the industry. The manager worked with researchers from MIT who studied how to operationalise the interaction between people and smart environments, "things that think" [15]. These discussions inspired the product development manager to work the ideas into the possibilities of combining different technologies.

In the next paragraphs, we will present results from our analysis on the interconnectedness of critical decisions in the process of bringing innovation to the market. These decisions and the underlying factors behind them try to demonstrate how value within an innovation-based business is actually co-produced. Table 1 summarises the business decisions and their related factors.

Owning-partners selected based on capabilities

At first, the parent company intended to build a new product line based on the innovation. However, other business reorganization was done at the same time, and also, the parent company did not acquire the knowledge needed for mastering the new product line. Thus, a decision was made to invest in a spin-off with two other partners from two different industries. Moreover, this decision can be seen as giving the grounds for other critical business decisions described in later paragraphs.

Funding actors participate in value-creation

Besides the funding from the three owners, the National Technological Funding Agency played a critical role in financing the setting up the business operations of the new company. Later on new capital investments were negotiated. Through sharing the ownership the parent company was able to do risk-sharing and to bring more financing know-how into setting up a new business.

TABLE 1
THE CRITICAL BUSINESS DECISIONS MADE IN ALFA

Decision	Related Factors
Owning-partners	<ul style="list-style-type: none"> • Broader set of skills
Funding from partners	<ul style="list-style-type: none"> • Risk management • Broader financing know-how
Production through partners	<ul style="list-style-type: none"> • Unwillingness to invest in own manufacturing equipment
Customers as co-producers	<ul style="list-style-type: none"> • Developed technologies attract the large-volume market • Global customers have resources to invest in technology development • Global customers have power to "induce" others to use new technologies • Diffusion of technology inside and through the global customers
Gradual development of technologies	<ul style="list-style-type: none"> • Competitors offer ready-use-solutions
Network of specialists	<ul style="list-style-type: none"> • Need for highly skilled specialists • Important to be close to the partners and customers
Value co-production through network relations	<ul style="list-style-type: none"> • Flexibility, dynamics, and agility of activities • Cost savings through avoiding large investments • Outsourced resources • Focusing on own areas of expertise • Good preparedness to expand business activities • Business concept demands such a broad expertise that cannot be handled within one company

Production through partnering

The first product was launched in 2006, two years after the start-up. The decision was made early in the innovation process not to invest in own manufacturing equipment but to build production through partnering and subcontracting. The product development manager knew actors in the printing industry.

Customers as co-producers

At the time, when the company was set up, it was not clear what exactly will be offered and to which customers. The decision process on whom to target as the main customers was not easy and it took almost a year to determine who the customers are and who they should be. In a network business, there is a fear that profits dissolve into the vast network of partners and subcontractors. Thus, the company paid close attention in determining its position in the network.

After the long internal discussions and negotiations, the company decided to target the globally known customers, i.e., global brand owners. These actors were seen as having the

potential resources to either use the technology in their own operations or develop it further with Alfa. As industry leaders, these actors have also the power to seduce other customers to use it. Moreover, the brand owners were seen as a means to reach brand owners' own customers (i.e., customers-customers) and other important players in the market field.

The challenge with the global brand owners was that they were not, after all, interested in participating in the process of product development. Rather, they wanted ready-to-use solutions. Also, finding the right partners to negotiate with has not been easy, because the brand owners have organised themselves not as hierarchical organisations but as bundles of networking contracts. Thus, connecting to the right networks to bring the innovation forward has not been easy task for the company.

Gradual development of technology

The company sees competitive advantage in engaging its customers in the final phases of the product development. Hence, the company approaches the customer with an unfinished idea of the final solution, and then develops it with the customer. The reason for this has been the fact that the company's competitors are offering ready-to-use solutions to the customers. However, the risk in this approach lies in determining correctly the time to commercialise and more specifically launch the product to the market. The solution must not be too incomplete and yet not too complete for the customer.

In product development, the company has several partners and acts sometimes as a mediator between them. These partners are universities, other public research sites, autonomous firms and customers.

The company is a network of specialists

At first, in 2004, nine people worked in the company. At the end of 2006, there are about twenty people working. The hiring policy has been to recruit highly skilled specialists, no matter where they want to stay. It is thought that not necessary everyone wants to move to the city where the headquarters are. Thus, the organisation itself has become a networked organization. The personnel are located in five cities in Finland and one in Central Europe. Specialists travel frequently to customers as customers participate heavily in the final phases of product development, and they contact frequently their partners for getting more experiments and testing underway.

Value is co-produced through network relations

During its existence, the company has been operating through its network relations. The network comprises both company's internal members (i.e., personnel) and external members (e.g., owners, research centres, consultants, customers, partners and subcontractors). Some relations have been built before the establishment of the company and their existence as well as continuity has been dependant on specific personal contributions. All in all, internal and external members are interacting with each other frequently and there is a drive to deepen the most potential relationships further.

From the start, the company has seen the network as an enabler for running the future business effectively: company needs such a broad expertise that cannot be handled within one company but within the range of multiple actors participating in the technology development as well as in the production and marketing of the products. This, in turn, helps the company to maintain and develop its own superior expertise. Moreover, networking with partners and customers are seen as offering possibilities to expand the business activities further, to stay out of costly investments and to remain its capability to change courses of actions quickly if something unexpected emerges.

However, the challenge the company has recently faced is its ever-increasing internal and external dispersiveness. As the network relations become wider and wider, it is impossible to control the internal (and external) actors and consider whether the connections are utilised properly or not. Networking decisions include decisions on whether wider connections are yet needed or should the company focus on a certain amount of relations and deepen them further.

V. DISCUSSION

This paper has studied key challenges of managing a network business. The aim of this paper was to generate empirical knowledge for understanding the networked nature of value creation in innovation-based business by demonstrating how value co-production occurs in practice. The study is based on ten interviews conducted between 2004 and 2006. The interview material was analysed using a method of content analysis.

The identified seven critical business decisions focuses on traditionally held areas of business such as ownership, investment, production, customers, competitive advantage, organising, and managing network relations [4]. The primary organising principle and driving force of Alfa's activities and operations are internal and external networking. Thus, value co-production occurs in and through several network relations synchronically and interactively [1] [3] [5] [6].

First of all, customers participate in the production of value [1] [6] [7], and thus, customer relations themselves become valuable, as they become close and long-term relations. Moreover, scattered internal and external network connections between members inside the company and between the company and its suppliers as well as between the company and its partners not only enable the role shifts and overlaps between the

actors but also blur the efforts to control the aggregates of different actors [1]. Therefore, the success of management of the company relies on the ability to manage interactions, not individuals or individual companies.

Knowledge capital is argued to be one of the crucial elements and prerequisites for surviving in today's innovation-based business [5] [6]. It is generated and maintained through the aggregates of dispersed individual expertise [3] and renewed through external relationships. The company tries to keep its highly skilled specialists by letting them to be loosely tied to company's apron. Thus, both the empowerment of specialists and their self-guidance seem to play important roles.

Financial capital is secured through professional financing organizations. The company gains cost savings through networking because it does not have the heavy load of investment to cover. Moreover, as the company develops its product with the customers, it can acquire some cash flow even before launching the product. However, the company has difficulties in pricing the knowledge/competence based products. The value co-production framework highlights knowledge as the most critical asset of the firm [6], but deciding the market value of knowledge based products and services is a true challenge in the everyday business. Thus, research on the combining of the value co-production framework and the dynamics of appreciation/pricing knowledge seem to be yet needed.

In terms of social capital, the company is able to utilize the specialists' long term relations in the printing, paper and electronics industries. Through strong networking know-how the company can better focus on its' own core competences. However, the value co-production framework seems to ignore how differently networks and relationships between individuals and firms can be conceptualised. Thus, it would be valuable to further analyse the different networks with network research approaches, such as social networks, business networks and entrepreneurial networks. Through such analysis, a deeper understanding of which networks and relationships are actually those that drive the value co-production between the economic actors will be sought for.

As to conclude, this study is part of a larger research programme on networks which focus on actors' interdependences and knowledge formation processes in order to identify, describe, and analyse the emerging business premises and features as well as business models with regard to framing and managing innovation-based business in a network context. This study has cast a light on showing the importance for understanding the value creation situations businesses today face and the need to study it further.

REFERENCES

- [1] R. Ramirez, "Value Co-Production: Intellectual origins and implications for practice and research" *Strategic Management Journal*, vol. 20, no. 1, 1999. pp. 49-65
- [2] T. Pietiläinen, H. Lehtimäki & H. Keso, *Liiketoimintaosaamisen lähtökohdat – innovatiivinen ja verkostomainen yrittäjyys* ["The Networked Business Concept of Actor-Oriented Innovation Process"], Teknologia katsaus 175, 2005, Helsinki: Tekes
- [3] K-E. Sveiby, "A Knowledge-Based Theory of the Firm to Guide in Strategy Formulation", *Journal of Intellectual Capital*, vol. 2, issue 4, 2001. pp. 344-358
- [4] M. E. Porter, *Competitive Advantage: Creating and Sustaining Superior Performance*. New York: Free Press.
- [5] R. Normann, *Reframing Business. When the Map Changes the Landscape*, 2001, London: John Wiley & Sons Ltd
- [6] R. Normann & R. Ramirez, "Designing interactive strategy: From value chain to value constellation" *Harvard Business Review*, vol. 71, issue 4, 1993. pp. 65-77
- [7] R. Normann, *Service Management: Strategy and Leadership in Service Business*, second edition, 1991, Chichester: John Wiley & Sons Ltd
- [8] R. K. Yin, *Case Study Research, Design and Methods*, third edition, 2002, Newbury Park: SAGE Publications Ltd
- [9] D. Silverman (ed.), *Qualitative Research: Theory, Method, and Practice*, 1007, London: SAGE Publications Ltd
- [10] J. Van Maanen (ed.), *Qualitative Methodology*, third printing, 1984, Beverly Hills: SAGE Publications Ltd
- [11] Silverman, D., *Interpreting Qualitative Data: Methods for Analysing Talk, Text, and Interaction*, 1993, London: SAGE Publications
- [12] K. Krippendorff, *Content Analysis: An Introduction to Its Methodology*, second edition, 2004, Thousand oaks: SAGE publications
- [13] J. Tuomi, *Laadullinen tutkimus ja sisällön analyysi*, 2002, Helsinki: Tammi
- [14] E. Latvala & L. Vanhanen-Nuutinen, "Laadullisen hoitotieteen tutkimuksen perusprosessi: Sisällönanalyysi" In S. Janhonen & M. Nikkonen (eds.), *Laadulliset tutkimusmenetelmät hoitotieteessä*, 2. uudistettu painos, 2003, Juva: WS Bookwell Oy
- [15] "Things that think", <http://ttt.media.mit.edu/index.html>