

# Theory of Creation of Japanese-Style Spin-off Startups

—An Empirical Case-Based Study of New industrial clusters  
and communities of practice—

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**【Abstract】**This study presents the concepts from Theory of Creation of Japanese-Style Spinoff Startups: An Empirical Case-Based Study of New industrial clusters and communities of practice, which received the Japan Academy of Business Administration Award in 2012.

## 1. Introduction

My book Theory of Creation of Japanese-Style Spin-off Startups: An Empirical Case-Based Study of New industrial clusters and communities of practice (Doyukan, February 2012, A4-format, p.443) received the Japan Academy of Business Administration Award in 2012 in the Monograph Category. The award ceremony was held at the general meeting of the 87th Conference (Kansai Gakuin University), where the chairperson of the screening committee explained the screening process and presented the reasons for the award. The report described the extended and diligent review process conducted by many professors in the screening committee. One can surmise their great efforts. I would like to once again express my gratitude to the scholars in the screening committee, particularly its chairperson Takahide Kosaka.

Furthermore, I was blessed with the opportunity to deliver a lecture on my winning monograph at the “Society Memorial Symposium” held at the 87th Conference. Below, I present the concepts of the book based on the memorial lecture.

## 2. Overview of the book

### 2-1. Organization

The book is organized as follows.

Preface: Toward a Japan-based theoretical and empirical study of the formation of new industrial clusters and creation of spin-off startups

Section I. Review of prior research

Chapter 1. Review of prior research concerning new industrial clusters and spin-off ventures

Chapter 2. Review of prior research concerning spin-off entrepreneur learning communities

Section II. Case Studies

Chapter 3. About the case studies

Chapter 4. Software clusters and spin-off chains in the Hamamatsu area  
Chapter 5. Software clusters and spin-off chains in the Sapporo area  
Chapter 6. Optronics clusters and spin-off chains in the Hamamatsu area  
Appendix 1. Ripple effects of software and optronics clusters as seen in industrial-related tables of Hamamatsu City  
Appendix 2. Software clusters and spin-off chains in the Beijing, China Zhongguancun area  
Section III. Analysis Results  
Chapter 7. Comparative analysis of three cases  
Chapter 8. Summary and implications of facts discovered  
Conclusion. Challenges remaining in this study and future outlook

**2-2. Preface and Section I (framing of the problem addressed in this study)**

The preface and Section I frame the problem to be addressed in this study based on a review of prior research. This study reviews case studies on the process of forming new industrial clusters in the fields of software and optronics. Specifically, this study focuses on the learning communities of spin-off entrepreneurs before and after establishing a startup, aiming at deriving a theory of Japanese-style spin-off startup creation based on empirical research.

**2-2-1. Framing of the research problem (new industrial clusters and spin-off startups)**

The concept of new industrial clusters here is in contrast to existing industrial clusters based on manufacturing, such as textiles or metal working. The existing theory of industrial clusters, as it applies to the industrial era, focuses on production cost reductions stemming from economies of scale based on the economics of clustering (benefit of location). However, optimizing the procurement of management resources worldwide has become easier with advances in globalization and information technology, weakening the significance of legacy industrial clusters as a way to reduce production costs such as transportation and labor expenses. New industrial clusters in fields with rapidly changing markets and technologies as well as high uncertainty have locational advantages in competition among firms co-located in the cluster, leading to the creation of product innovation (development of new products and services) via such competition. In particular, in the post-industrial/knowledge economy era beginning in the 1990s, high-tech-style “new industrial clusters,” the source of creating product innovation, are attracting an increasing attention. The “Silicon Valley model” (Saxenian, 1994) is often cited as the archetype of new industrial clusters. The process of its formation can be described as a “spin-off chain” with Fairchild Semiconductor as the mother organization. While arguments in traditional industrial cluster theory presume clustering, this study considers case studies of spin-off chains as the process of formation of clusters, the stage prior to clustering.

Following Inagaki (2003), this study defines a spin-off chain as “the phenomenon of repeated emergence of many spin-off startups in the form of a tree, originating from a single mother organization.” The term “spin-off startup,” the main topic of this study, is a neologism combining the terms “startup” and “spin-off.” Similar to previous studies, this study views startups as entities where risk-taking entrepreneurs bring innovation to reality. Moreover, this study presents a narrow definition of innovation while using the term “startup” for “R&D-based small and medium-sized companies engaged in product innovation.” The high-tech startups that were examined here are synonymous with those called “high-technology firms” or “new technology-based firms.” By “high-tech areas,” this study specifically refers to software, biotechnology, and mechatronics/optronics. The supposition is also that the risk-taking entrepreneurs are “technologists.” This study refers to these founder/executives of spin-off ventures as “spin-off entrepreneurs.” Let us therefore view the founding of a spin-off as a risk-taking spin-off entrepreneur (technologist) spontaneously leaving a

mother organization and establishing a startup.

Spin-off startups face unique challenges in two areas, in addition to those normally associated with establishing a new company such as funding, hiring, and marketing. The first challenge is creating sustained product innovation in a high-tech field coupled with the learning issue of how the spin-off entrepreneur can acquire the product development capabilities from which the innovation springs. The second is the nature of the relation between the spin-off entrepreneur and the mother organization. In Japan, the mother organization in most cases is a large enterprise that closely adheres to an employment system based on a long-term perspective. Therefore, large Japanese enterprises find it difficult to take a tolerant attitude toward spin-offs that involve the withdrawal of members of the organization (especially the departure of talented technologists). It is therefore most common in Japan to see “spin-outs,” where there is no support from the mother organization and the establishment is completely unrelated (Spin-off Study Group, 2003). The sustained creation of spin-off startups in Japan requires building amicable relations with the large enterprises serving as mother organizations. The approach used in this study thus revolves around the nature of the relation between the large mother enterprise and the spin-off entrepreneur while preceding and following the establishment of the spin-off startup. In addition, this study conducts empirical research on case studies of spin-off chains, as a process of forming new industrial clusters, to identify the conditions for a sustained, chained creation of spin-off ventures in particular regions of Japan.

Maeda (2002) states that “in the lost decade after the collapse of the bubble (the 1990s), a new wave brought forth R&D-style startups from Japan’s large enterprises, a spin-off revolution.” A quantitative understanding of spin-off startups is difficult due to the dearth of statistics; however, one report notes that in the 1990s, “we definitely saw the founding of R&D-style startups, with most of the founders being technologists spinning off from large companies” (National Institute of Science and Technology Policy, 1999). However, from 1990 through the present, business shutdown rates exceeded new business opening rates, which are still lagging. In Japan, still lacking in entrepreneurship, the system of large enterprises with vertically integrated models is considered to be dominant. In fact, 80% of researchers belong to large companies and consider that spin-off startups are still rare (Research Industries Association, 2002). Importantly, we must consider the conditions for creating Japanese spin-off startups on the premise of Japan’s institutional constraints, including employment practices that take a long-term perspective and the knowledge worker market with its low mobility. The issues, in other words, are the institutional conditions at large Japanese enterprises that would permit technologists and entrepreneurs to develop the ability to create products as well as paths that are available to take advantage of the product development capabilities inside and outside the mother organization.

## **2–2–2. Key concepts of this study: Communities of practice, knowledge typologies in human capital theory, and three research questions**

Looking back, large Japanese companies established competitive advantage through organizational knowledge creation models in the 1970s and 1980s (Nonaka & Takeuchi, 1995) based on Japanese-style management systems (Hayashi, 1998). The organizational knowledge creation model is characterized by knowledge creation in cross-functional groups based on information sharing within the company. In automotive product development, this yielded the advantage of innovating in complex architectures combining many different component technologies. The 1990s, with the Internet and other ICT innovations, saw the advent of a true knowledge economy society. With this, the organizational knowledge creation model of Japanese companies could not be fully adapted while western-style knowledge creation, as typified by the Silicon Valley model, increased its competitive superiority. Western-style knowledge creation features component technologies driven by individual employees (technologists) with their own established identity. This is advantageous in

product development in markets and technologies with high levels of innovation and rapid rates of change, such as biomedical devices and software. The preconditions here were high mobility in the knowledge labor market as well as the diversity of individual entrepreneurs (technologists) across organization boundaries and entrepreneurship.

Nonaka & Takeuchi (1995) indicate that contemporary Japan must transcend the dichotomies of “organization vs. individual” and “Japanese-style knowledge creation vs. Western-style knowledge creation.” More importantly, an “evolution of the organizational knowledge creation model is required,” moving toward the interaction between organization and individual, rather than dependence on facile imports of the open innovation model (Chesbrough, 2003), the next stage in the evolution of the Silicon Valley model. The structural weakness of the organizational knowledge creation model was that it was biased toward information from people inside the company and failed to incorporate the variety of information from outside the organization adequately. Therefore, large companies in Japan that continued to use the organizational knowledge creation model were unable to address the multifaceted needs of potential customers in advanced fields of the knowledge economy era and became mired in “The Innovator’s Dilemma” (Christensen, 1997). Japan must shift toward an evolved open organizational knowledge creation model based on a win-win relation with spin-off entrepreneurs to succeed in product innovation in advanced fields in the 21st century.

Based on these historical aspects of Japan and considering the era in which we live, this study outlines the criteria for spin-off chains as a process of formation of new industrial clusters and identifies the conditions for sustained, chained creation of spin-off startups in particular geographical regions. In addition, it incorporates the issue of the relation between the acquisition of product development capabilities by the spin-off entrepreneur (technologist) and the mother organization (large enterprise), assuming low mobility in the knowledge worker market and institutional constraints. Furthermore, this study introduces the notion of communities of practice proposed by Wenger (1998) and Wenger et al. (2002) concerning the learning process by the spin-off entrepreneur before and after the establishment of spin-offs.

The reason for introducing the notion of communities of practice is to enable us to view the process of starting a business as one of a learning cycle by the spin-off entrepreneur, in other words, a process of forming or reforming his or her identity. Overall, the concept of communities of practice is the key to depict the “third way” in which the two sides of the dynamic dichotomies of Japanese style management system vs. knowledge creation management, Japanese-style organizational knowledge creation vs. Western-style knowledge creation, and organization vs. individual can interact with each other. Conceptually, communities of practice are constructed internally by the learners themselves; the term does not refer to externally defined “organizations.” The boundaries of communities of practice are unclear as in the case of organizations; they are ambiguous. Some are completely contained within a business unit, some cross department lines, and some even transcend corporate boundaries. In other words, communities of practice surpass the existential dimension of the individuals, groups, organizations, and relations between organizations as described by organizational knowledge creation theory. They can emerge and can be developed easily.

“Communities” have an intrinsic duality of external openness and internal collaboration. In this sense, the concept of communities of practice satisfies the point of the interaction between individual and organization and can potentially suggest a model for rearchitecting the Japanese management system. The “collectives” seen in the history of workplace learning and vocational training in Japan are craft, workplace, and societal collectives. The notion of communities of practice transcends these historical notions to paint a newly architected model for new communities of practice in the era of the knowledge economy. Adopting the notion of communities of practice as “perceptual gains” would enable mutual learning by the technologist of spin-off entrepreneur at each dimension: individual,

group, organizational, and inter-organizational, in the context of the learning process, before and after the establishment of spin-offs.

Although this study considers the learning of the spin-off entrepreneur considering the notion of communities of practice, directly linking this to a Japanese-style theory of spin-off startup creation is difficult. Both the theory of organizational knowledge creation and that of communities of practice are about the creation of knowledge by mutual learning in collective groups, deeming the essence of knowledge to be something internalized by individual experience. The theory of communities of practice assumes individual identity. Regarding the theory of organization knowledge creation, the scenario is that the results of knowledge creation from group learning accrue internally to the corporate organization as well. In other words, the theory of communities of practice does not go so far as to envision a story of individual employees acquiring knowledge applicable externally and going independent and founding spin-offs.

Nakamura (2008) probes the reasons for few Japanese spin-off startups, applying knowledge typology from the human capital theory (Becker, 1975) and national comparative institutional analysis. This is a comparative review of the Silicon knowledge worker, based on the knowledge worker market of a liberal market economic system, and the Japanese knowledge worker, based on a labor market retaining systems of lifetime employment and seniority. The Silicon Valley knowledge worker aims to strengthen his general knowledge of some specialized area, rather than specialized knowledge internal to the company, emphasizing the formation of networks that transcend the corporate organization. In contrast, the Japanese knowledge worker is content to exchange information within the company, which increases his or her specialized knowledge internal to the company, but reduces his ability to develop creative new products or create new knowledge involving essential concepts and applicable to other firms. The hypothesis is that this reluctance to seek knowledge outside the large corporation is the reason why few Japanese knowledge workers spin-off and for the creation of few R&D-style startups. Based on this hypothesis, this study applies knowledge typology from the human capital theory to what is learned in communities of practice (or learning environments), in other words, the reality of knowledge constituting product development abilities. The use of knowledge typology from human capital theory as an intermediary will lead us from the “theory of communities of practice” to the “theory of founding of Japanese-style spin-off startups.”

Human capital theory and intellectual competence theory (Koike, 1991) have deemed this to be a polar opposition between generic knowledge that is beneficial outside the company in question and has high portability, with training costs borne by the employee, and specialized internal knowledge that is beneficial only to the company in question and has low portability, with training costs borne by the company. However, if the product development skills of spin-off entrepreneurs are viewed as career formation, then it is essential to revisit this type of static knowledge typology, transcending the dichotomy between generic knowledge and specialized internal knowledge, as well as the trichotomy resulting from adding in specialized industry knowledge (Hall & Soskice, 2001), and examine the interrelationships between each type of knowledge.

If product development skills are deemed to be technologists' pre-spin-off career formation, those skills are specialized internal knowledge that can be applied within the group inside the large parent enterprise to which they belong to. On the other hand, given that the product development skills these technologists learn is directly connected to success in production innovation after founding the spin-off startup, they could also be considered as highly portable general knowledge. From this point, the product development skills acquired by spin-off entrepreneurs can be considered to be interactive hierarchically integrated knowledge composed of general knowledge, specialized knowledge internal to the industry, and specialized knowledge internal to the firm. The most appropriate learning

environments for spin-off entrepreneurs to acquire product development skills are communities of practice that allow interaction between knowledge at schools and experience at workplaces. The concept of communities of practice, by intermediating with the knowledge typologies of human capital theory, not only provide learning environments for spin-off entrepreneurs but also enable the examination of the things learned. Communities of practice are a key concept for skillful analysis in the theory of the creation of Japanese-style spin-off startups.

Based on the above considerations, this study poses three questions: (1) prior to the establishment of a spin-off startup, how do technologists acquire the product development skills necessary to found the startup in the context of communities of practice inside the large Japanese-style enterprise (mother organization)? (2) after the establishment of a spin-off startup, how are communities of practice crossing the boundaries of the spin-off startup and what type of learning are entrepreneurs involved in? Furthermore, through what mechanisms do spin-off chains emerge as a process of forming industrial clusters? (3) as large enterprises face the dilemma of simultaneously running their company according to Japanese-style management system and knowledge creation management oriented toward product innovation, communities of practice are formed under which conditions based on win-win relations between the large enterprise and the spin-off entrepreneur and what is the model for sustained creation of Japanese-style spin-off startups?

### **2-3. Section II (case studies) and Section III (analysis results)**

To address these three questions through empirical research, this study considers three case studies: (1) software clusters in the Hamamatsu area (a spin-off chain with Yamaha Motor as the mother organization); (2) software clusters in the Sapporo area (a spin-off chain with BUG and Davysoft as the mother organization); and (3) an optronics cluster in the Hamamatsu area (a spin-off chain with Hamamatsu Photonics as the mother organization). The spin-off chain diagram is newly drawn from interviews by the author and is one of the factual discoveries from this research.

The fact-finding survey in this study examined industrial clusters and spin-off startups from four perspectives: (1) a regional sociocultural and institutional perspective; (2) an industrial perspective; (3) the perspective of the mother organization; and (4) the perspective of the entrepreneur. This study conducted a fact-finding survey focusing on the perspectives of the mother organization and entrepreneur, particularly considering the communities of practice where organizations and individuals interact. The book explores the cases of the spin-off startups that are the protagonists rather than just drawing a superficial spin-off chain diagram. In particular, the book includes in-depth interviews with the spin-off entrepreneurs about their life stories to understand the reality of learning communities prior to and subsequent to the establishment of the spin-off startup.

This enabled us to understand the learning environments of spin-off entrepreneurs as a three-stage development of communities of practice, namely (1) communities of technologists within large enterprises in the 1970s and 1980s; (2) communities of entrepreneurs crossing the organization boundaries of spin-off startups in the 1990s; and (3) regional communities of entrepreneurs based on a win-win relation between the mother organization (large enterprise) and the spin-off entrepreneur in 2000 through the present. As a result of analyzing the case studies of these three communities of practice, we discovered the following about the three research questions.

The first research question asked regarding the learning of technologists in the mother organization prior to spin-off to know more about the learning environment and what was learned. It was discovered that in large enterprises under the Japanese-style management system, technologists, particularly those belonging to R&D-type units, formed communities of practice, and the technologists participating in those communities of practice learned product development skills and

established their identity. In addition, the book revealed that when technologists acquire product development skills, they acquired interacting, hierarchical integrated knowledge composed of general knowledge, specialized industry knowledge, and specialized corporate knowledge (including both implicit knowledge and formalized knowledge within a particular firm).

When engaging in product development in cutting-edge fields where the market and technology move quickly and there is a high degree of uncertainty, the creation of general knowledge in the field of specialty is required rather than information sharing about specialized internal knowledge, which is emphasized under the Japanese-style management system. This is because the creation of general knowledge is more directly conducive to product development in cutting-edge fields. Therefore, a technologist must possess in-depth generic knowledge, such as the principles, laws, theories, and structures of the specialty area. The technologists who drive new product development in cutting-edge fields are aware of the challenges in the product development theme (specialized internal knowledge, as seen by the large enterprise) and learn the generic knowledge that serves as its basis. The technologists also learn general knowledge from each other and spontaneously create learning environments (communities of practice) to create new general knowledge. In large enterprises that support a Japanese-style management system, there are exceptions in which the identity of the individual technologist is recognized when developing new products in cutting-edge fields, the learning of general knowledge useful outside the company and the existence of communities of practice where technologists can learn together has come to be accepted. In the 1970s and 1980s, large enterprises endured technologists' communities of practice, enabling them to effectively tackle the dilemma between Japanese-style management system and knowledge creation management without much effort.

The second question concerned mutual learning by entrepreneurs after the spin-off. We discovered that communities of practice transcending the organizational boundaries of spin-off startups had been reformed. In these communities of practice, early spin-off entrepreneurs and later spin-off entrepreneurs (including entrepreneurs-in-waiting) became participants, the former learning knowledge related to product development skills to deal with outdated skills while the latter learning entrepreneurial skills related to the general challenges of founding a company. One senses diversity in the participating spin-off entrepreneurs, due to the fact that their roots lie in the communities of practice in the mother organization (large enterprise), while product development skills in cutting-edge fields were enhanced by the heterogeneity of each spin-off startup.

Furthermore, the fact-finding survey indicated that a key point in the emergence of the spin-off chains seen in particular regions in the 1990s was the formation, disappearance, and reformation of communities of practice as well as the diversity and expansion of those communities of practice. Specifically, the conditions for the emergence of spin-off chains were (1) the diversity of communities of practice within the first mother organization (large enterprise) and the number of second mother organizations (spin-off startups); (2) the emergence of spin-off entrepreneurs who serve as coordinators and the reformation of communities of practice, which leads to interaction (mutual learning and mutual support) between the early and later entrepreneurs; (3) the expansion and reformation of communities of practice by later spin-off entrepreneurs and the clustering of communities of practice in particular regions along with the accompanying emergence of economies of promotion of new startups (new locational advantages). Therefore, if the movement in the 1990s called the "spin-off revolution" ends, and the growth in spin-off chains and startups ends, a plausible reason is that the reformation of communities of practice stalled.

The third question concerned the conditions for sustained creation of Japanese-type spin-off Startups, assuming Japanese institutional constraints such as an employment system based on long-term prospects and a low-mobility knowledge worker market. The book discusses the two

findings: the evolution of the large enterprise open organizational knowledge creation model in Japan since 2000 (expansion of the spin-off system) and a model of reformation of regional communities of practice based on the win-win relation between large enterprise and spin-off entrepreneur. The expansion of the spin-off system by large enterprises refers to the reassessment of technologists' communities of practice formed as an exception and spontaneously in R&D-style organizations under the Japanese-style management system of the 1970s and 1980s. In addition, large enterprises that have expanded the spin-off system are engaged in building communities of practice internally that cross the boundaries of the startup organization created by the spin-off entrepreneur as seen in the 1990s.

As can be seen from the case study of Hamamatsu Photonics, starting in 2000, large enterprises, which extended the historical "internal startup" system and streamlined and expanded their spin-off systems, are consciously creating learning environments for talented technologists in cutting-edge fields as well as those lagging behind the latest trends. For example, for the former, they are introducing systems where employees can return to the workplace even after spinning off; for the latter, they are introducing retraining systems allowing employees to acquire product development skills, anticipating productization and commercialization. Large enterprises that have streamlined and expanded their spin-off systems in this fashion can overcome the dilemma of product innovation in cutting-edge fields while continuing to maintain their long-term employment and Japanese-style management systems. Furthermore, they can avoid the problem of unanticipated departure of technologists and simultaneously, significantly enhance the internal worker market with its low mobility. On the other hand, from the perspective of technologists who belong to large companies (spin-off entrepreneurs), this makes it easier for them to advance their career with a long-term outlook and establish their own identity as technologists to acquire the product development skills mandatory for founding a startup. They can also hope for tangible and intangible support when founding a spin-off startup from the large enterprise, or mother organization, which mitigates the general risks accompanying the founding of a startup. This is truly a win-win relation between mother organization and the spin-off entrepreneur. The book shows that constructing this relation in a well-balanced manner will create the conditions for sustained creation of spin-off startups in Japan.

### **3. Assessment of this book and future prospects**

Several reviews of this book have already appeared.

For example, Watanabe (2012) writes, "The distinguishing feature of this book is how while it acknowledges the effectiveness of the creation of startups in Silicon Valley, it indicates that this became possible in a particular environment and presents a discussion based on the awareness that in Japan with support policies based on perfunctory imitation, the formation of industrial clusters and the recreation of a Silicon Valley-like existence is impossible. In addition, it takes up three case studies of cutting-edge startups springing up in Japan and industrial clusters being newly formed, pursuing a theory of cluster formation based on fact-finding surveys. Going beyond mere presentation of facts, it pursues the theory behind them, theorizing about cluster formation in a consistently logical way around the notion of communities of practice. The explanation of the current situation in Japan based on the case studies convincingly leverages the notion of communities of practice. The author has clearly delineated in a way not seen in previous Japanese startup theories an empirical theory of startup growth in the original sense and a theory of startup formation in cutting-edge industries in Japan, taking into account the environment in Japan for founding new companies."

According to Seki (2012), "The great contribution of this volume that it not only describes

specifically, using case studies, the process for formation of industrial clusters by spin-off startups but also explains the relation between learning and capability building and communities of practice. In other words, the book untangles a problem framed based on actually occurring phenomena by means of case study information gathered through in-depth interviews while maintaining consistency with debates in related areas, constructing the author's own analysis framework. In this sense, the book brings order to the variety of finely sliced arguments, including startup theory, entrepreneurship learning theory, industrial cluster theory, spin-off chain theory, open innovation theory, and organizational knowledge creation theory, and can be assessed as supporting one wing of research into constructing theories about building frameworks from case studies."

Onishi (2013) says, "This book makes an important theoretical contribution to the study of Japanese-style spin-off startup creation. Introducing the notion of communities of practice, it succeeds in analyzing theoretically and empirically the process of Japanese-style spin-off startup creation, the behavior of spin-off entrepreneurs before and after founding, and the process of formation of industrial clusters." Teraoka (2013) opines, "The theory of Japanese-style spin-off startup foundation (the spin-off entrepreneur learning cycle model), asks whether, in a three-stage development of communities of practice, the learner can move among communities of practice and whether the technologist can step up to being an entrepreneur. Nagayama organizes these problems into an easily understandable model. I find this highly applicable."

Although, as can be seen from the above, the reviews were largely favorable, others commented that there were constraints on the claims made from the suitability of the selection of the case studies, or the particularities of the case studies. I, as the author of the book, am well aware of these points as topics left unanswered by this study. In particular, regarding the third research question, my analysis approached dealing with global competition in innovation as a cutting-edge trend for firms living in the era of the knowledge economy, with Hamamatsu Photonics going as far as to establish the Graduate School for the Formation of New Photonics Industries, but I did not adequately demonstrate similar behavior on the part of other Japanese firms. Furthermore, even in Japanese firms that have been oriented toward a closed management system under the institutional structures of the Japanese economy, it has become an unstoppable tide to introduce knowledge creation management predicated on spin-offs as a way to deal with this era of competition in innovation. I attempted to show this fact through empirical research, as well as the fact that the door to the "story of the new age for entrepreneurship" is opening, due to the win-win relation model between the large enterprise and the spin-off entrepreneur.

After this book was published, the author conducted a fact-finding survey of eight large electronics companies and spin-off entrepreneurs, as an ongoing preparation for answering remaining research issues. At the moment, I have investigated the life story of 30 spin-off entrepreneurs from large electronics companies such as Sony and Fujitsu, the conclusions from which are almost identical to those in the book. In addition, new discoveries have been made, which I will focus on in the next book.

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