

# An Exploration of the Conceptual Linkages among Entrepreneurial Leadership, Intellectual Capital, Effectuation and Triple Loop Learning in Japanese High Technology Start-ups

David T. Methé

*Kwansei Gakuin University, Japan*

## Abstract

This paper is concerned with how managers, either operating as independent entrepreneurs or as intrapreneurs in an established company, view the risks involved in starting up a new project in a high technology industry. It presents the findings of interviews that were conducted over a two-year period. This study focuses on the perception of risk. Sources of risk are seen as primarily related to factors that can cause the project or business to fail or go bankrupt. It further examines the linkage between intellectual capital, effectuation and learning in organizations.

**Keywords:** *Entrepreneurs, risk, leadership, intellectual capital, effectuation, triple loop learning*

## INTRODUCTION

Our study presents a first examination of linking together several conceptual frameworks related to entrepreneurial activity. We do this with the hope of providing insight into building a business ecology that facilitates entrepreneurial activities in Japan. We address this issue in our conclusion. First, we look at entrepreneurial leadership and perceptions of risk in Japan and how these related to intellectual capital as a stock of resources and how and whether this stock of intellectual capital is processed through the effectuation framework to cope with the perceived risk. We begin by looking at two aspects of entrepreneurial leadership consisting of both envisioning the venture, called scenario enactment and assembling the resources, called cast enactment

(Gupta et al., 2004).

We assert that envisioning the venture is a process of the entrepreneur articulating the goals and the risks associated with achieving those goals. We then examine how entrepreneurs perceive the sources of risk. This empirical understanding is important for in spite of March and Shapria (1987) call for more empirical work on how managers actually perceive risk, little empirical work has been done. This is especially the case in Japan, where outside of our study no work on this issue exists in the English language literature. In terms of understanding how cast enactment takes place, we link the entrepreneurial leadership concept to the intellectual capital framework in order to gain insight into the resources that are available for entrepreneurs to use.

While research on intellectual capital provides insight into what resources are available, few studies have examined the processes or how the resources are utilized. We are the first to propose a link between the intellectual capital literature and an emerging area of study within the field of entrepreneurship; that is, effectuation. We assess the usefulness of the effectuation framework to examine how entrepreneurs use the resources available to them to cope with risk. We then discuss the implications of these processes at both the firm level and societal level in terms of learning and the building of a business ecology that supports and fosters entrepreneurship in Japan.

#### **SAMPLE AND METHODS IN A MULTIPLE CASE STUDY**

The empirical element of our research project was conducted over a three-year period from 2005 to 2007. An open-ended questionnaire was developed in 2005 drawing on previous research in the area of risk perception, (see for example, Sitkin and Pablo, 1992; Weber et al., 1998; March and Shapria, 1987; Xu and Ruef, 2004). The final version of the questionnaire in English and Japanese was used to conduct semi-structured interviews that ranged from one and a half hours to three hours in length. Twenty-one interviews were conducted over a two-year period from 2006 to 2007.<sup>1)</sup>

The empirical study we present in this paper is a descriptive multiple case study (Yin, 2003; Baxter and Jack, 2008), in which we examined multiple sites using our questionnaire in order to describe how managers viewed risk and how they coped with that risk. We use the data collected through interviews to examine the utility of several conceptual frameworks in understanding how entrepreneurs manage risk. In this, we ask follow on question and answer these through those frameworks. Our motivation in doing so is not to test those frameworks, but to present an initial exploration of their potential to generate more refined research questions that may be examined with more rigorous empirical analysis.

The focus of our study is on the individual manager as the unit of analysis concerning risk perceptions and risk management. It is useful, however, to

understand the company sites that each of our entrepreneurial managers is connected. The sites for our study included eight venture businesses (VB), seven small/medium sized established companies (SME/EC) engaged in product launches involving new technology, two foreign subsidiaries of non-Japanese venture businesses (FS) and four venture angel companies (VA) which were also newly established ventures in their own right. Since the focus of the study was on managerial perceptions of risk in entrepreneurial/intrapreneurial business activities, balance between start-up and SME established enterprises was deemed essential.

All these companies were involved in the semiconductor industry, an industry characterized by successive waves of technological innovation in both products and processes (Méthé, 2006; Méthé, 1992; Méthé, 1991). The inclusion of the two foreign subsidiaries was deemed useful for the study for two reasons. First, both were entrepreneurial start-ups in the semiconductor industry in their respective countries. Second, Japanese country managers managed both these companies. These companies fit the overall profile for inclusion, and added additional insight into the perceptions of risk through the cross-cultural element of their management. The Venture Angel companies were not originally included in the profile, but grew out of the recognition that the ecology of entrepreneurial environment is still nascent, and the emergence of angel investors is an important part of that ecology. Since these organizations were also start-ups, and were involved with funding semiconductor start-ups, there inclusion was a logical extension.

Each of the managers interviewed had considerable business experience that ranged from about 10 years to about 30 years. Most of the managers acquired their business experience as engineers and managers in Japan's large established companies. This study uses the qualitative data collected during the interviews, supplemented where possible with data collected from other archival sources.

#### **ENTREPRENEURIAL LEADERSHIP**

Entrepreneurial leadership is a central element of managing start-ups (Gupta, MacMillan, Surie, 2004). As noted our study has the individual entre-

preneur as its unit of analysis. Previous research has indicated that even when a team exists, there is often a “lead entrepreneur” who has a profound influence upon the team, centering the character and direction of the venture upon that individual (Ensley, Carland, Carland, 2000). In our sample the prominence of the “lead entrepreneur” was evident as represented in the following:

Although the market share of our product has risen to about 70% in Japan and now is the main source of profit for our company, this business was a decision with high risk at first. Mr.ABC, the president, took strong initiative as a leader. Without his leadership this business would not have succeeded. Tough times for this business lasted quite along time, and in this period many objections were raised, since the business was making deficits. It was Mr. ABC’s strong consistency and support for the business that enable it to be where it is today.

Studies of entrepreneurial leadership indicate that the challenge confronted by entrepreneurial leaders is two fold; consisting of both envisioning the venture, called scenario enactment and assembling the resources, called cast enactment (Gupta et al., 2004). We first look at how the lead entrepreneur envisioned the venture in terms of the goals and prospects of returns form their activities. We then turn our attention to the perception of risks associated with achieving those goals.

#### **ENTREPRENEURIAL LEADERSHIP AS SCENARIO ENACTMENT: RETURNS AND GOALS**

Our findings indicate that these managers were concerned about the returns that they would receive from successfully carrying out their new business development activities. Their primary goal for starting their business was the development of new products based on new technologies. As such, they usually phrased their ideas about returns either in technological or in market share terms, and only occasionally in terms of profits or returns on investment. These following comments were typical of

many discussed during the interviews.

I really have to stress the potential of this technology. In 10–20 years this will be make up 60 percent of the market. As stated by a founder of a venture business (VB).

Products based on our technology have become the standard in the industry. As stated by the general manager of a foreign subsidiary of a venture business.

We are pioneering a new materials technology and are the only company in Japan actively working on commercializing this technology. As stated by a founder of a (VB).

This company is a high-risk high return business. There is risk, but return is if you can make the products you can make billions so it is also high return. As stated by a founder of a (VB).

Surprisingly the primary concern of the entrepreneurs was in achieving the goal of commercializing a new technology through new products/processes. They often talked in terms of becoming the standard or dominant in market share terms. Of lesser concern was making high returns in terms of profits. This indicates that Japanese entrepreneurs appear to be more of the “artisan” type as opposed to the “traditional” type of entrepreneur (Stanworth and Curran, 1976).

Whether the ultimate goal of these entrepreneurs was to develop a new technology or make money, all these managers indicated that their venture activities were new to them and the process of starting up a new venture (especially a start up, but also launching new products based on new technologies) shared many of the characteristics of a transformative event (Jackson, 1986; Paul 2015).<sup>2)</sup> Inherent in any transformative event is a high degree of uncertainty. Part of understanding the envisioning process for an entrepreneur is to examine how they perceive risk.

## ENTREPRENEURIAL LEADERSHIP AS SCENARIO ENACTMENT: GOALS AND RETURNS

The ability to deal with the ambiguities and challenges of high-risk decisions and projects, were often seen as the key element in the success or failure of the project (Gimmon and Levie, 2010). The comments from the managers in our study indicated that the type of “risk” they confronted in beginning their new ventures appeared to share characteristics closer to “ambiguity” and “uncertainty” (Knight, 1921; Mosakowski, 1997; Meyer and Shi, 1995; Murmann and Sardana, 2013). As an integral part of scenario enactment, we turn our attention to how these entrepreneurs perceived risk.

Many of the comments were as follows:

Risk is not having enough money to cover your costs and going bankrupt.

Another entrepreneur commented as follows:

Real risk is not at the starting point, but gradually risk gets higher and higher. In the seed phase if bankruptcy occurs there is very little money and people involved, but as we grow the level of risk increases. The level of risk is now higher than at founding.

Further, we have this comment from another entrepreneur:

Generally people say investing in ventures holds high risk, but I do not think so. I think the risk is not as high as that, rather there might be only a little risk. The reason is the scale for the investment is not that big since we invest in venture companies at a very early stage. Even if they fail, the loss does not damage us badly.

Finally we have these two comments, each from different entrepreneurs:

The image of risk is different. In Japan you lose everything if the business fails. You lose the business and you also lose your personal assets if the business fails.

In terms of the perception of failure, in the US the idea is that if you fail you should learn from it and become a better business person...In Japan, the failure stays with you as a negative and it is hard to get the money to start up another business. One failure basically stops you from doing anything else.

In these comments the concept of risk as being related to bankruptcy or failure is evident. This perception was common among the respondents in this study. Unlike the classical definition of risk in decision theory, where risk is concerned with the variance of the probabilities of various gains and losses generated from an alternative (Pratt, 1964; Arrow, 1971), in our study, the entrepreneurs and managers defined risk as the chance of loss. Our study updates and enhances the finding from other studies that have noted that managers involved in new business activity tend to consider the negative consequences of the activities as risk (March and Shapira, 1987). Our study indicates that practicing entrepreneurs do not perceive ‘risk’ as a measure for the distribution of possible outcomes from a choice but ‘risk’ as a problem or hazard that must be overcome to achieve their goal.

Second these comments highlight how managers consider the chance or uncertainties that are an important part of how managers define risk changing over time (Conrath, 1967; Miller, 2009). In essence, risk can be adjusted, but it can only be done by influences placed upon a variety of processes that in turn generate some saleable product and develop some kind of reputation for the company, which then make it easier to acquire the resources needed to prevent going bankrupt. Again, our study indicates that entrepreneurs perceive risk as not reducible to some simple formula, let alone a single quantifiable concept and the entrepreneurs saw risk more as Knight (1921) referred to uncertainty; something that was not necessarily predictable but could be influenced through their actions.

Third these comments also hold that as the size of the investment, both in terms of people and money increases, the level of risk is seen as increasing. Comments like this were quite common among our sample of entrepreneurs and managers. Again, this is consistent with other research that has found

that the amount at stake often has a greater impact on the decision, than simply the probabilities related to the loss. This has been called loss aversion (Tversky and Kahneman 1991) or regret aversion (Bell, 1983). What is new from our study and critical here is the recognition by the entrepreneur that as the investment grows it becomes more readily visible to the business and financial communities and the society as a whole. The increasing visibility is associated with increasing the risk.

The impact of public visibility is seen in the final two comments. The consequence of business failure through the impact on personal assets and the manager's status in Japanese society is quite evident from these comments. Both the loss of face, and with it your reputation as a businessperson and the loss of personal assets is severe. The magnitude of the consequences of failure, for those involved in starting a venture business in the institutional context of Japan is important in understanding the comparatively low level of entrepreneurial start-up initiation (JSBRI, 2005). We will explore these consequences and their implications in later sections and especially our final section. For now it is important to note that once you fail publicly as an entrepreneur it is an all or nothing situation and you do not get a second chance.

A key finding from our study is that there is a bifurcation between the source of risk and the source of returns. Thus, the entrepreneurs intuitively differentiate between the domain of loss and the domain of gain. The domain of gain appears to the product or technology to conquer the market. Our study found that entrepreneur's perceive that any technical problems could be overcome, and hence was not a real source of risk. Risk related to whether the entrepreneur could prevent the business from failing. The business, in essence is the means for overcoming the technical challenges. Our study indicates that entrepreneurs bifurcate between the domain of loss/risk and the domain of gain/return. Returns flow from the technology and this flow is not directly connected to the sources of risk. The entrepreneurs made a distinction between the goal and the means to achieving the goal. They saw risk as related to the potential failure of the business as a means rather than a goal. These risks could be minimized, if one can know what are the

sources of risk.

#### **ENTREPRENEURIAL LEADERSHIP AS SCENARIO ENACTMENT: PERCEPTIONS OF WHAT ARE THE SOURCES OF RISK?**

These entrepreneurs identified a number of sources for risk. As one founder of a VB that had been in business for about fifteen years put it succinctly:

I have three major problems to contend with, especially at the initial founding stage. The first was money. The second was customer relationships and the third was hiring good engineers. All three are important and the third one is very important now, because this is a high technology business.

This comment was echoed by most of the participants in the study and is consistent with other studies that have cited the acquisition of business resources as a major source of risk for managers involved in new business development activities (Alvarez and Busenitz, 2001). This raises the question of what are the resources available for the entrepreneur to counter the sources of risk?

#### **ENTREPRENEURIAL LEADERSHIP AS CAST ENACTMENT: INTELLECTUAL CAPITAL**

Intellectual capital plays an important role in venturing activities of firms, whether start ups (Gately and Cuningham, 2014) or in established firms attempting to gain competitive advantages through knowledge management (Nonaka and Takeuchi, 1995; Hendriks and Sousa, 2012). Intellectual capital has been variously defined (Hayton, 2005; Gonzalez-Loureiro and Dorrego, 2012) and while it is beyond the scope of this study to review the intricacies of the concept, we need to examine its main concepts in order to understand what resources are potentially available to entrepreneurs.

Several comprehensive reviews of the intellectual capital literature have been done (Inkinen, 2015; Serenko and Bontis, 2013). There seems to be general agreement that intellectual capital, or the knowledge available to the firm to carry out its activities and accomplish its goals, is made up of three



dimensions. These were human capital, organizational capital and relational/social capital (Inkinen, 2015). Each of these will be briefly discussed.

Human capital encompasses all the abilities, knowledge, skills, motivation and attitudes of the people in the firm (see for example, Bontis, 1998; Hormiga, Batista-Cannino, Sanchez-Medina, 2011b; f-Jardon and Marto, 2009). Organizational capital was found to be composed of all the structural and systems related elements of organizations that support the employees of the firm as they use their human capital to accomplish tasks (see for example, Bollen, Vergauwen, Schnieders, 2005; Delgado-Verde, Navas-Lopez, Cruz-Gonzalez, and Amores-Salvado, 2011). Relational/social capital was determined to be the knowledge embedded in the relations that the firm and people in the firm have with external individual and networks (Hsu and Fang, 2009; Huang and Hsueh, 2007). One of the key conclusions from this research is that the knowledge embedded in human and relational/social and the management of those knowledge components is critical in the development of a firm's organizational capital.

One of the conundrums confronting an entrepreneurial start-up is that these organizations are often made up of very few people, generally a founder and one or two others and if any structure exists it would be considered organic. As such, organizational capital is very limited or non-existent in a venture company. Organizational capital can only be developed as a result of the movement of knowledge, through the idiosyncratic learning of the individuals in a start-up to systems and structures that are independent of the individuals and yet are always dependent on the individuals in the organization to refresh and rejuvenate the organizational capital (Rowley, 2000). We ask then, what are the resources and how are these utilized in order for a venture start-up to grow into an established firm?

We assert that the critical elements of intellectual capital available to a venture firm are found in the individual founder of the venture, its entrepreneurial leader. As such these relate to human capital, in the form of the personal characteristics of the individual entrepreneur, that entrepreneur's experience and knowledge and the network of relation-

ships of the individual entrepreneurs (Hayton, 2005; Debrulle, Maes, Sels, 2013). A particularly important element of entrepreneurial leadership, then is managing human and social capital (Hitt and Ireland, 2002).

The intellectual capital framework is useful for understanding what resources an entrepreneur can utilize, since it is concerned with the stock of capital. The intellectual capital framework is less useful for understanding the flow of these capital stocks; that is, how those resources are acquired and utilized. Specifically, how does an entrepreneur turn the intellectual capital stock into resource flows that can be used to cope with the sources of risk?

#### **ENTREPRENEURIAL LEADERSHIP, INTELLECTUAL CAPITAL AND EFFECTUATIONS: HOW DO ENTREPRENEURS COPE WITH THE SOURCES OF RISK?**

In order to examine this question, we explore the applicability of the emerging conceptual framework of effectuation (Sarasvathy, 2001; Sarasvathy and Dew, 2005). Although effectuation is a recent<sup>3)</sup> (Sarasvathy, 2001) and rising in importance (Read, Song, Smit, 2009; Perry, Chandler, Markova, 2011; Fisher, 2012) conceptual framework for understanding the entrepreneurial process of confronting uncertainty, it has not been connected to the intellectual capital literature. Our study is the first to link these two important frameworks together.

Although there are few empirical studies (Perry, Chandler, Markova, 2011) and there are many questions being raised about the framework (Arend, Sarooghi, Burkemper, 2015) there has been conceptual and cased based studies (Sarasvathy, 2001, 2003; Fisher, 2012; Perry, Chandler, Markova, 2011; Gabrielsson and Politis, 2011) that agree that the effectuation framework is composed of five basic elements that differentiate it from other approaches.<sup>4)</sup> We turn our attention to those five elements.

First, in the effectuation approach rather than beginning with a set of ends/goals an entrepreneur begins with a set of idiosyncratic means involving who they are or their character and personality, what they know or their experience and knowledge

and who they know or their network of contacts. Second, rather than making decisions around an unpredictable set of potential returns, entrepreneurs focus on affordable loss; that is, what they believe they can lose and still keep the venture solvent. Third, entrepreneurs form alliances with various stakeholders, such as venture capitalist or others who can provide funding, customers, and people or organizations who can supply essential employees. Fourth, while developing the venture, entrepreneurs look for or are open to contingencies to exploit and tend to be open and flexible to opportunities that arise through experimentation. Finally, entrepreneurs tend not to rely on attempting to predict an uncertain and unknowable future, but instead through their actions, attempt to control it (Sarasvathy, 2001, 2003; Perry, et al., 2011, Fisher 2012.)

We will explore the extent to which the effectuation conceptual framework can link between the individual entrepreneur and intellectual capital. We have found already that our entrepreneurs begin with goals, and as such this would seem to invalidate the effectuation framework and lend weight to the causal alternative. However, our study also showed that entrepreneurs made a distinction between the goal, which was to commercial a technology and means to that goal, which was to establish a business that required the acquisition of people, money and customers. The acquisition of those resources was the perceived sources of risk. As such we argue that it is important to look at whether the effectuation framework can assist our understanding of how entrepreneurs as leaders use their human and social capital to minimize risk. In doing so we turn to the means based questions in the effectuation framework.

#### ***Who they are: The entrepreneur as leader***

When asked what did the Angel capital managers look for in the entrepreneurs who were running the venture businesses, the following comment was typical:

The character of the entrepreneur is important. Having a positive outlook and clear thinking and having a “hot atmosphere” are critical. After that the person’s specialty and

human network. So in evaluating a venture we look to see if they have a good idea, the entrepreneur has a good character and good support. Those are the keys to success.

Our finding of a “hot atmosphere” is supported in studies that indicate that entrepreneurs who have hope, optimism and resiliency are better able to generate intellectual capital (Peterson, et al, 2009), but adds an important element in that it indicates this is a universal characteristic of entrepreneurs, since these earlier studies were conducted in Western institutional environments. This Angel capital manager went on to say that he would try to make adjustments if any of the above were lacking from the entrepreneur running the venture business. He noted that:

If the idea is good but the entrepreneur’s character is not good then we try to replace him with someone who has a good character; that is, someone who has a positive outlook and an outgoing personality and good management and personal skills and the person with the good ideas should be put into another area, say research and development. Ideally we like if we have a pair of people, one who is outgoing and one with technical creativity.

Again, our study indicates that in terms of “who they are” component of human capital, there is universality in terms of character. This part of the effectuation framework appears to link into the intellectual capital framework through the personality part of human capital and is an area that will need further research concerning its universality.

#### ***What they know: Institutional context as related to Entrepreneurial Leadership***

The training and experiences that were encountered in an established company for which these entrepreneurs often worked from between 10 to 30 years before exiting to start their own companies prepared these managers for handling some of the strategic elements of their jobs as entrepreneurs, such as developing a business plan, and for some of the elements of human resource management,

however most noted that they felt ill-prepared for issues related to finding and recruiting people to work for their start-up or for finding venture money. As one Angel capitalist noted:

Especially in the high technology companies the managers are engineers and have no sense of finance and other business matters and often fail.

As one venture business manager with many years of experience in a large established electronics company put it:

Through my experiences at the company I feel I learned a lot and that gave me the initial confidence that I could manage a start-up business. In addition to my engineering experiences I spent one and half years in the Strategic Planning department of the company and learned about the importance of the developing business strategy. However, I did not anticipate that there would be so many problems in getting the company going and I almost went bankrupt. I am in the red now, at least in terms of my personal financial return, but since my children are grown and my wife is OK with my taking this venture, I am sure it will work out.

The last part of the above comment is particularly telling with respect to the loss avoidance aspect of effectuation. Most of the entrepreneurs were in their late 40s or 50s and some had taken early retirement from the large established companies they had worked at during their careers. This also meant that the personal lives of these entrepreneurs had moved to a place where they had minimized any personal loss.

Our study indicates that in terms of the “what they know” component of human capital, there are strong institutional forces at work, both in terms of the knowledge and the sense of loss. This area of linkage between the effectuation and intellectual capital frameworks appears to be moderated by institutional factors. Our study indicates that further research into this moderating effect is necessary.

### *Whom they know: Finding Good People and Engineers*

We have discussed the “who they are” and “what they know” means of human capital in entrepreneurial leadership and their links to intellectual capital. We now turn our attention to the third critical means of effectuation, “who they know” or relational/social capital. Having access to a network of people who understand the technology, and can interact with customers is critical for the survival of the company (Anderson, Park, Jack, 2007; Maurer and Ebers, 2006). Again our study indicates that the institutional context plays a moderating role. Being able to hire the right people from that network for the company is difficult, particularly in Japan. As one founder noted:

Other things vary, but human resources are important all the way through.

Another founder noted that:

Ten years ago when I graduated from university, people did not really think being in a venture business was good. It was better to enter an established big company. People do not respect the entrepreneur and do not see the importance of ventures. The United States has a different view that puts more value on entrepreneurs and ventures. Parents, families, friends, will support and give money to a venture business in the United States, but to do this in Japan is very difficult. You need to change these cultural beliefs and norms.

Part of the reason for the institutional lack of support for venture businesses comes from the uncertainty about their ultimate fate. Given the harshness of bankruptcy, failure reflects on all who work for the company, not just the leader of the company. Success is more assured in an established company and noting that your graduates work for such a company reflects well on the university and the particular professor. He went on to indicate that:

Also in the university with the professors at the labs and such, the professor knows about how many students get into big name companies, but not how many start their own



business. So the prestige and reputation of working in a big company is evident and supported and the feeling is that the not so smart students cannot get in and start their own business. This ends up being a self-fulfilling prophecy because smart students are encouraged to go into big name company and the not so smart ones go into venture businesses so the failure rate of ventures is high. This has to change and professors have to support smart people going into venture businesses.

These comments can be understood in terms of the concept of learning, especially at the organizational but more importantly at the societal level (Wang and Ahmed, 2003; Keith and Allen, 2006; Armitage, Marschke Plummer, 2008). This societal learning includes not just the replacing of incentives and relationships between entrepreneurs and universities. It also includes the replacing of norms and values embedded deeply in the culture and affecting societal structures as fundamental as the family. There are limits to what individual entrepreneurs can accomplish in this regard and most do not try. Consequently, the entrepreneurs had to experiment with different approaches to attracting potential employees that were more directly within their decision-making control. For example, leadership decisions concerning what at first glance would appear to be a financial resources decision were actually undertaken for the impact these decisions would have on the company's ability to attract new personnel. The CEO of one company that had been listed on one of the regional stock exchanges, decided to go through the effort to get listed on the Tokyo Stock Exchange, explained as follows:

The most important advantage we think is to acquire good quality human resources. We think that human resources support a company, so we need good quality ones.

From this entrepreneur's perspective, the key to attracting good personnel was enhanced when the reputation of the company was enhanced and being listed on the Tokyo Stock Exchange performed that reputational enhancing function. This reputational

aspect of relational/social capital has been noted as important for venture businesses in other studies (Hormiga, et al., 2011a), but mainly in financial resource acquisition. However our study indicates that what at first glance appears to be a financial decision is in reality a human resource decision in Japan. Hence, our study indicates that in terms of confronting contingencies in the social capital area an effectuation approach through experimentation is critical and that institutions may moderate this effect.

#### *Whom they know: Finding Customers*

The ability to develop a steady and stable source of sales revenue is also critical for moving the venture out of its earliest stage of development and into a stage where it can develop into a fully functioning company with organizational capital. Finding that first customer, especially if it is a large established company does a lot to legitimize the venture business and allows it to overcome its "liability of newness" (Aldridge and Fiol, 1994). Finding the first customer also plays a critical role in developing the pre-commitments that can evolve into commitments of resources that ultimately define the venture and market (Sarasvathy and Dew, 2005). Sometimes the first major customer is also a major investor. As one venture business president noted:

We visited many large companies asking for funding but could not get anything. Venture capitalists were also not putting money into our company. FJH company (a large established electronics company) originally came in as a co-research partner and then about six months later invested a lot of money in us. After that we could money easily because we had the chip and a strategic partner and we had gotten good press.

This strategy of using a major company as both a customer and an investor, however, has pitfalls, that can in turn increase risk for the venture business. This relates to another aspect of the effectuation framework, the contingent aspect of the pre-commitments and the need for flexibility and various stakeholders co-evolving the market and the firm by strengthening some relationships while

pruning others. As one venture business founder noted:

Our first partnership was with RST company. They were looking for technology our company was working on. The managing director of that company convinced his company to not only tie up with us as suppliers, but also to investing us through a capital tie up. We became a production subsidiary. This relationship lasted three years and lead to our finding MNO as a customer. We had to terminate the capital tie up with RST company because staying with them makes it difficult to develop other customers. At that time a venture capitalist offered us an investment that would allow us to buy out RST and become independent.

Venture business managers often noted that they would trade on their unique capabilities in high technology research, especially before their own product was launched. However, they noted that they had to be very careful in selecting research partners. As one venture business manager noted:

One of my main customers is STU company. I do not sell to MNO company even though they are in the same business. STU is not as comprehensive as MNO so it cannot or at least does not copy my technology, but MNO can.

Even when a customer is found, who is willing to take a chance on an unknown company selling a product that has not been tested for a long time in the market, using some novel technology, there are difficulties in the way large companies treat smaller companies in Japan. One venture business founder/CEO related how he had difficulty even after he had confirmed orders for his product, which was a specialized piece of semiconductor manufacturing equipment. After they had developed the prototype and had demonstrated it, they received an order for five units. He went on to note that:

We received an order for five sets from a large Japanese semiconductor materials

company. We had the factory building, but we did not have enough money to start production. Because we had the order we could get money from a venture capitalist and we began our production and sent the five completed sets to the company. But the custom in this business is to give an oral order for equipment, so nothing is written down. The big company did not pay us for the equipment we delivered.

Our study indicates that the entrepreneur's social capital is critical in the use of alliances and pre-commitments and the taking advantage of contingencies through flexibility and experimentation to co-evolve the firm in a market can be observed in the statements above. These elements of the effectuation approach also appear to interact with the intellectual capital aspects of social capital and are moderated by the institutional environment in that social capital may vary in its value based on the size and age of the enterprise.

#### *Whom they know: Funding, Cash Flow, Money*

It is obvious that getting funding for the venture business is a major element of ensuring the success of the venture. A fundamental question for a venture business founder is how do you cover the costs of developing a product when you do not have any revenue? This is why early stage funding in the United States and other market-based models of capitalism (Clausen, 2011) is through Angels and venture capitalists. The following comment from the founder/CEO of a venture business help to illustrate how difficult this is in Japan.

So the former president of this company wanted to get some money from venture capital companies, but I disagreed with him. I feel that venture capital companies in Japan do not use proper criteria for evaluating high technology venture businesses. They (the venture capital companies) only want to get profits from the venture business as soon as possible, even if only a small profit, so they do not really evaluate the technology potential. Venture capital companies in Japan have been destroying venture businesses, espe-

cially the high technology/high risk/high return types. Angel investors do evaluate the technology potential and are useful.

Now this contingency has generated the risk of getting money from venture capital companies that do not understand the new technology of the venture. In the US the flexible response would be to go to Angel investors who do understand the technology. However, in Japan there are further problems as noted by this same founder/CEO:

Funding risk in Japan is high because there are not many Angels.

This founder/CEO did have an experimental mechanism for dealing with the need for early stage funding that understood the technological potential of his venture business. This particular founder/CEO had been working in a large established Japanese electronics company for about 30 years before taking on his current new business development project of starting his company. As he stated:

I have my own network and I use it. They (the people he knows) understand technology. Even though they are still employed in established companies and do not want to start their own venture business, they have money that they would be willing to invest. I talk with them and get them to invest in my company.

These people, in my network, are technology pros and understand how to evaluate the potential of the technology. They are also risk tolerant because they have steady incomes from their jobs and can wait for the technology to develop.

In order to gain access to revenue, some of the managers of the venture businesses interviewed have experimented with contract research with larger companies as a form of pre-commitment. This strategy was used but more by venture businesses that were developing new technologies, which were still closer to their science knowledge base and less likely to immediately yield a commercial product. These relationships, did linger, however, even when products had been commercial-

ized. As one venture business founder noted:

About 20 percent to 30 percent of our revenue comes from co-research and development with large companies.

Again, our study finds a link between the intellectual capital framework and the effectuation framework in that the entrepreneur's social capital is critical in gaining monetary resources and reducing the risk of business failure, thus allowing the venture to work towards its goal of commercializing its new technology.

### CONCLUDING THOUGHTS AND CONSIDERATIONS ON TRIPLE LOOP LEARNING

The research presented above should be seen as a starting point for further research. We utilized qualitative data in the form of interviews to ask and develop preliminary answers to a number of research questions concerning the utility of several emerging conceptual frameworks. It is hoped that through this process we can stimulate more refined research in the future.

Our first contribution came in gaining more empirical insight into how practicing entrepreneurs and managers concerned with new business development perceived risk. Our study is the only representation in English of how Japanese entrepreneurs perceive risk that we are aware of in the research literature on entrepreneurship. We found that entrepreneurs make a strong distinction between the goals of commercializing new technologies through a new business project or venture and risk, which is seen as primarily related to factors that can cause the project or business to fail or go bankrupt. We also found that these entrepreneurs saw the key sources of risk as related to the acquisition of employees to work for the new venture, customers to purchase the new venture's products and funding for the new venture. This is the first time in the English research literature that this bifurcation between the goal and the risk has been explored in the context of Japanese entrepreneurs, especially in how it relates to entrepreneurial leadership, intellectual capital and effectuation.

For the effectuation framework, the indication is that entrepreneurs, in high technology start-ups in Japan, begin with the goal of commercializing a specific technology or product and not with a set of means or resources *per se*. This may indicate that one of the boundary conditions of the full framework may depend on the type of technology or product and the background of the entrepreneur.

In order to understand how the entrepreneurs in our study overcame the risk related to gaining resources we examined the usefulness of the intellectual capital framework. Another major finding of our study was in answering the following: when an entrepreneurial venture has no financial capital or existing revenue stream from paying customers, how can it develop these resources? What resources are at hand for the start-up to use in order to sustain it?

For a venture firm we found that the most vital resources were the human and relational/social capital of the entrepreneur. A further contribution comes from our finding that entrepreneurs exert leadership to leverage their human and relational/social capital to acquire financial capital, employees and customers. We pushed further into how this could be done by examining the utility of the effectuation framework in understanding the process by which the stocks of human and relational capital could be converted into flows of resources.

Our findings with respect to the effectuation framework are more mixed. As noted above, in terms of goal-oriented behavior, we found that the goal of developing a specific technology or product and making it commercially successful was quite strong, and that these goals provided an anchor for the entrepreneurs. They did not meander greatly from these goals. However we also found that in confronting the sources of risk in founding a business or initiating a project and utilizing their human and relational capital, they did adopt many of the effectual approaches.

First since entrepreneurs are working with their idiosyncratic human and relational capital, we found that one could use the three questions concerning who, what and whom as a way to link with the concepts of human and relational capital to the effectuation concepts. Second in terms of the processes of converting the knowledge resources to

something that can be utilized by the organization we found that the entrepreneurs in our study were concerned about minimizing loss in the acquisition of resources, they engaged in experiments and had to be flexible in moving towards their goals. Further, they did engage in pre-commitments form potential customers or others in developing their businesses. This co-evolving of the business with pre-commitment partners did lead to a meander as the needs for cash flow of the venture and the needs of the partners-customers waxed and waned in strength thus affecting the technology under immediate development, but in the end the entrepreneurs were motivated back to their original starting goals concerning the technology or product that was the initial launch point for the venture. Consequently, it appears that the effectuation approach channels the learning process into an organizational capital set that is tied to the entrepreneur's unique personal characteristics, knowledge and network.

A third contribution generated from our examination of the effectuation framework, is that we found that the "who" element may be universal in that entrepreneurs in Japan share many of the same personal characteristics of optimism, hope and resiliency, but for both the "what" and "whom" elements, the institutional environment had a strong influence. The mechanisms of this influence and their implications are discussed in previous work (Méthé, 2014). The implications of this finding that we wish to explore for this paper concern the process of learning, both at the organizational and societal levels. At the organizational level we are concerned with the conversion of human capital and relational/social capital into organizational capital, that is the structure and systems processes and procedures that form organizational routines and organizational memory for accomplishing tasks and achieving goals.

The entrepreneur as the first "legitimator" of the venture can begin the process by providing the necessary human and relational capital and through leadership guide the growth of the firm and thus may act as the first "teacher" in moving the knowledge from the individual entrepreneur to other individuals in the organization and by setting up systems within the firm to facilitate the process of

organizational learning. This type of knowledge management requires that both single and double loop learning be employed (Wang and Ahmed, 2003), especially in terms of an effectuation approach that emphasizes both experimentation and flexibility when confronting contingencies. The ability of an entrepreneur to act not only as a “legitimater” but also as a “teacher” or “mentor” may help explain why some ventures are started, succeed for a while and then fail.

To transfer the human and relational/social knowledge of the entrepreneur, single loop learning would be engaged, but as the venture confronts contingencies, and the entrepreneur must experiment and become flexible, then double loop learning must be engaged. It may be, however, that even double loop learning would be inadequate and a higher order, triple loop learning would be required (Blackman, Connelly and Henderson, 2004; Romme and van Witteloostuijn, 1999). There is still some confusion and debate as to what constitutes triple loop learning however, scholarly consensus indicates that it is clearly linked with some aspect of transformation, purpose and reflexivity (Tosey, Visser, Saunders, 2011) and consequently relate to changing deeply embedded norms and cultural values. This ability to engage in triple loop learning by an entrepreneur at the organizational level may be rare, but possible. In our study several entrepreneurs had to manage across country and cultural boundaries. While these activities were engaged in to generate revenue from sales, it is possible that through these activities transformations were occurring at a deeper level in the individual entrepreneur and in the organization. Whether conscious or not, the seeds of triple loop learning may have begun to germinate.

In order to generate sustainable entrepreneurial business ecology, however, these individual efforts are necessary but insufficient. It is less possible that the individual entrepreneurs by themselves would be able to generate triple loop learning at the societal level. This would take a concerted effort on the part of not only the Japanese government but also other organizations in Japan, such as the large established companies who make up much of the potential employee pool along with universities, to fundamentally change. Previous attempts to initiate

a self-sustaining entrepreneurial ecology, by the government of Japan appeared to be single or at best double loop learning oriented. Earlier attempts to stimulate an entrepreneurial ecology utilized government programs and the setting up of special geographic areas for high technology research and development, in the hope of fostering venture businesses. More resources were made available, but without altering the underlying governing variables.

This type of single loop learning has been supplemented by later attempts to foster ventures by engaging in double loop learning through the establishment of special capital markets, such as the Mothers and JASDAC. Coupled with changes in the regulatory regimen for launching a business and doing an initial public offering, the governing variables concerning the development of new ventures were changed. Even this type of double loop learning has met with limited success. However, there still does not exist a self-sustaining entrepreneurial ecology in Japan. It appears that double loop learning at the societal level may be necessary but not sufficient to generate such a self-sustaining environment.

Engaging in triple loop learning may at the societal level also have to be utilized, before such a self-sustaining environment would be generated. What would triple loop learning look like? We encountered some suggestion of it concerning the recruitment of potential employees, when the suggestion was made to change norms and values of parents to support their children entering venture businesses. Another example, of a triple loop attempt would have to address the subconscious as well as conscious mindset concerning business failure. Rather than viewing a business failure as some catastrophe that zeros out the reputation of the entrepreneur, each “failure” should be viewed as a learning opportunity for both the individual entrepreneur and for society as a whole. The learning effects would emanate not only from the direct effect of learning by doing, but also from vicarious learning (Denrell, 2003). Further, the network of entrepreneurs and venture angles would grow and be enriched if second and third chances were allowed. The learning community of entrepreneurs would benefit from those who “failed” as well as



those who “succeeded”. The current societal mindset and its devastating effect on the reputation of those who fail make that impossible now. A societal level mindset allowing for more trial and error would make it possible to provide an institutional environment that allows for second, third and fourth chances and encourages the entrepreneur, and especially those considering to enter as entrepreneurs to persist in their endeavors. Persistence is the “god parent” of venture businesses. Further research into the specifics of triple loop learning for generating a self-sustaining entrepreneurial business ecology should be encouraged as a first step.

#### ACKNOWLEDGEMENT

This paper is based on research conducted for a project on Risk Cognition, Technological innovation, Institutional and Managerial Environments: Entrepreneurs and Intrapreneurs in Japanese High-Tech Industries Grant-in Aid for Scientific Research (B) by the Society for the Promotion of Science, MEXT (Kaken Grant) (2005–2007).

#### NOTES

- 1) The data was collected several year ago and some may wonder if these data are somewhat dated. Recent articles and examinations of the Japanese institutional environment indicate that the elements that we study are still active and relevant. See for example; Singer, S., Amoros, J.E., Arreola, D.M., and Global Entrepreneurship Research Association (2014) *Global Entrepreneurship Monitor 2014 Global Report* London Business School, Regents Park, London, UK; Schuman, M. (October 31, 2016) “Is Japan too scared to succeed?” Bloomberg View, <https://www.bloomberg.com/view/articles/2016-10-31/japan-may-be-too-scared-of-failure-to-succeed>; Ranasinghe, D. and Holliday, K (April, 29, 2013) “What are Asian entrepreneurs afraid of?” CNBC, <http://www.cnbc.com/id/100682512>; Fifield, A., (June 22, 2016), “Japanese entrepreneurs face a special challenge: the ‘wife block’,” *The Washington Post*, [https://www.washingtonpost.com/world/asia\\_pacific/japanese-entre...ca-324c-11e6-ab9d-1da2b0f24f93\\_story.html](https://www.washingtonpost.com/world/asia_pacific/japanese-entre...ca-324c-11e6-ab9d-1da2b0f24f93_story.html)

utm\_term=.7076cd3f8140. The institutional environment for starting a business in Japan has been examined before and has been considered harsh (Methé and Bracker, 1994) and Japan is consistently rated low in entrepreneurial activity (Bosma and Harding, 2007; Kelly, Bosma and Amoros, 2011). Finally, it has often been observed that change in the Japanese business environment is neither straightforward nor evenly paced even when it occurs and has the pattern of maintaining continuity through change (Methé, 2005; Methé, 2006).

- 2) While there are many aspects to understanding a transformative event, a full exploration of these is beyond the scope of this study. Other researchers have examined these in greater detail (see, for example; Jackson, 1986; Paul 2015). For purposes of our study it is important to understand that a transformative event is one in which the participant cannot know what the post event situation will be like nor how they may respond to the exigencies that arise. No amount of study or preparation prior to the event can prepare the participant, since the event while sometimes experienced by many is unique to those who experience it and their reactions are idiosyncratic to their own personality and character. As such, a transformative event presents inherent uncertainty to the individual participant. An example in the personal arena of life would be getting married or the birth of a child. An example from the professional arena would be going to college, getting a job or starting a company.
- 3) Effectuation builds on a set of concepts in the area of strategic decision-making under uncertainty that have a long history (March and Simon, 1958; Lindblom, 1959; Burns and Stalker, 1961; Simon, 1991). These concepts and this extensive literature are reviewed elsewhere (Methé, Wilson, Perry, 2000; Augier and March, 2008) since it is beyond the scope of this paper to do so here.
- 4) Sarasvathy (2001, 2003) and others (see for example Gabrielsson and Politis, 2011) most often contrast effectuation with an approach that they term “causal”, which is characterized as goal oriented with a structured plan, return maxi-

mizing, competitor analytical, and aimed at predicting future events.

## REFERENCES

- Aldrich, H. and C. M. Fiol (1994). "Fools Rush In? The Institutional Context of Industry Creation", *Academy of Management Review*, 19/ 4: 645–670.
- Alvarez, S. A. and Busenitz, L.W. (2001). "The entrepreneurship of resource-based theory." *Journal of Management*, 27: 755–775.
- Arend, R. J., Sarooghi, H., Burkemper, A. (2015). "Effectuation as ineffectual? Applying the 3E theory-assessment framework to a proposed new theory of entrepreneurship." *Academy of Management Review*, 40/4: 630–652.
- Armitage, D., Marschke, M., Plummer, R. (2008). "Adaptive co-management and the paradox of learning" *Global Environmental Change*, 18: 86–98.
- Anderson, A., Park, J., Jack, S. (2007). "Entrepreneurial Social Capital: Conceptualizing Social Capital in New High-tech Firms." *International Small Business Journal*, 25/3: 245–272.
- Arrow, K.J. (1971). *Essays in the Theory of Risk Bearing*. Markham, Chicago.
- Augier, M., J.G. March (2008). "A retrospective look at A Behavioral Theory of the Firm." *Journal of Economic Behavior & Organization*, 66: 1–6.
- Blackman, D., Connelly, J., and Henderson, S. (2004). "Is Double Loop Learning A Reliable Knowledge Creation Process?" *The Learning Organization Journal*, Vol. 11, Iss. 1; pp. 11–27.
- Baxter, P. and Jack, S. (2008). "Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers." *The Qualitative Report*, 13/4: 544–559.
- Bell, D.E. (1983). "Risk Premiums for Decision Regret", *Management Science*, 29: 1156–1166.
- Bollen, L., Vergauwen, P. and Schneiders, S (2005). "Linking intellectual capital and intellectual property to company performance." *Management Decision*, 43/9: 1161–1185.
- Bontis, N. (1998). "Intellectual capital: and exploratory study that develops measures and models." *Management Decision*, 36/2: 63–76.
- Bosma, Neils and Rebecca Harding (2007). *Global Entrepreneurship: GEM 2006 Summary Results*. Babson College and London Business School. Available at <http://gemconsortium.org>
- Burns, T. and Stalker, G. M. (1961), *The Management of Innovation*, Tavistock, London.
- Clausen, T.H. (2011). "Comparing start-up activity across capitalist economies." *Acta Sociologica*, 54/2: 119–138.
- Conrath, D. W. (1967). "Organizational decision making behavior under varying conditions of uncertainty." *Management Science*, 13: B487–B500.
- Debrulle, J., Maes, J., Sels, L. (2013). "Start-up absorptive capacity: Does the owner's human and social capital matter?" *International Small Business Journal*, 32/7: 777–801.
- Delgado-Verde, M., Navas-Lopez, J.E., Cruz-Gonzales, J. and Amores-Salvado, J. (2011). "Radical innovation from relations-based knowledge: empirical evidence in Spanish technology-intensive firms." *Journal of Knowledge Management*, 14/1: 10–25.
- Denrell, Jerker (2003). "Vicarious Learning, Undersampling of Failure and the Myths of Management." *Organization Science*, 14/3: 227–243.
- Ensley, M.D., Carland, J.W. and Carland, J.C. (2000). "Investigating the existence of the lead entrepreneur", *Journal of Small Business Management*, 38/4: 59–77.
- f-Jardon, C.M. and Martos, M.S. (2009). "Intellectual capital and performance in wood industries of Argentina." *Journal of Intellectual Capital*, Vo. 10, No. 4:600–616.
- Fisher, G., (2012). "Effectuation, Causation, and Bricolage: A Behavioral Comparison of Emerging Theories in Entrepreneurship Research." *Entrepreneurship Theory and Practice* September: 1019–1051.
- Gabrielsson, J., and Politis, D. (2011). "Career motives and entrepreneurial decision-making: examining preferences for causal and effectual logics in the early stage of new ventures." *Small Business Economics*, 36/3: 281–298.
- Gately, C.G. and Cunningham, J.A. (2014). "Building intellectual capital in incubated technology firms." *Journal of Intellectual Capital*, 15/4: 516–536.
- Gimmon, E. and Levie, J. (2010). "Founder's human capital, external investment, and the survival of

- new high-technology ventures." *Research Policy*, 29: 1214–1226.
- Gonzalez-Loureiro, M, Dorrego, F. (2012). "Intellectual capital and system of innovation: what really matters at innovative SMEs." *Intangible Capital*, 8/2: 239–274.
- Gupta, V., MacMillan, I.C., Surie, G. (2004). "Entrepreneurial leadership: developing and measuring a cross-cultural construct." *Journal of Business Venturing*, 19: 241–260.
- Hayton, J. C. (2005). "Competing in the new economy: the effect of intellectual capital on corporate entrepreneurship in high-technology new ventures." *R&D Management*, 35/2: 137–155.
- Hendriks, P.H.J. and Sousa, C.A.A. (2012). "Rethinking the liaisons between Intellectual Capital Management and Knowledge Management." *Journal of Information Science*, 39/2: 270–285.
- Hitt, M.A. and R.D. Ireland (2002). "The Essence of Strategic Leadership: Managing Human and Social Capital." *The Journal of Leadership and Organizational Studies*, 9/1:3–14.
- Hsu, Y.H. and Fang W. (2009). "Intellectual capital and new product development performance: the mediating role of organizational learning capability." *Technological Forecasting and Social Change*, 76/5: 664–677.
- Hormiga, E, Batista-Canino, R., M. and Sanchez-Medina, A (2011a). "The Impact of relational capital on the success of new business start-ups." *Journal of Small Business Management*, 49/1: 617–638.
- Hormiga, E, Batista-Canino, R., M. and Sanchez-Medina, A (2011b). "The Impact of intellectual capital on the success of new business start-ups." *International Entrepreneurship and Management Journal*, 7/1: 71–92.
- Huang, C.F. and Wu, Y.C.J. (2010). "Intellectual capital and knowledge productivity: the Taiwan biotech industry." *Management Decision*, 48/4: 580–599.
- Inkinen, Henri (2015). "Review of Empirical Research on Intellectual Capital and Firm Performance." *Journal of Intellectual Capital*, 16/3: 518–565.
- Jackson, F. (1986). "What Mary Didn't Know." *The Journal of Philosophy*, 83/5: 291–295.
- JSBRI, (2005). *White Paper on Small and Medium Enterprises in Japan: Structural Changes in Japanese Society and the Dynamism of Small and Medium Enterprises*. Japan Small Business Research Institute, METI Tokyo Japan.
- Keith, T., Allen, S. (2006). "The learning organisation: a meta-analysis of themes in literature." *The Learning Organization*, 13/2: 123–139.
- Kelly, Donna J., Neils Bosma and Jose Ernesto Amoros (2011). *Global Entrepreneurship Monitor: 2010 Global Report*. Global Entrepreneurship Research Association. Available at <http://gem-consortium.org>
- Knight, F. H. (1921). *Risk, uncertainty and profit*. New York, Houghton Mifflin.
- Lindblom, C.E. (1959). "The science of muddling through." *Public Administration Review*, 19: 79–88.
- March, J.G. and Simon, H.A. (1958). *Organizations*, John Wiley, New York.
- March, J.C. and Shapira, Z. (1987). "Managerial Perspectives on Risk and Risk Taking", *Management Science*, 33/11: 1404–1418.
- Maurer, I. and Ebers, M. (2006). "Dynamics of Social Capital and their performance implications: lessons from Biotechnology Start-ups." *Administrative Science Quarterly*, 51: 262–292.
- Méthé, D. T. and Bracker, J. (1994). "A Cross-National Study of Perceptions of the Business Environment by U.S. and Japanese Entrepreneurs", *International Journal of Management*, 11/1: 599–603.
- Méthé, D.T. (1992). "The Influence of Technology and Demand Factors on Firm Size and Industrial Structure in the DRAM Market - 1973–1988", *Research Policy*, 21/1: 13–25.
- Méthé, D.T. (1991). *Technological Competition in Global Industries: Marketing and Planning Strategies for American Business*, Quorum Books, 1991.
- Méthé, David T., D. Wilson, J.L. Perry (2000). "A Review of Research on Incremental Approaches to Strategy." in Rabin, J., G.J. Miller, W. B. Hildreth (eds.) *Handbook of Strategic Management: Second Edition, Revised and Expanded*. Marcel Dekker, Inc, New York.
- Méthé, D. (2005). "Continuity Through Change in Japanese Management: Institutional and Strategic Influences", in Haak R. and M. Pudelko

- (eds.) *Japanese Management: The Search for a New Balance between Continuity and Change*. Palgrave Macmillan, New York.
- Méthé, David (2006). "Institutional, Technological and Strategic Factors in the Global Integrated-Circuit Industry: The Persistence of Organizational Forms." In Okada Yoshitaka (ed.) *Struggles for Survival: Institutional and Organizational Changes in Japan* High-Tech Industries. Springer-Verlag, New York.
- Méthé, D. T. (2014). "Risk perception, entrepreneurial leadership, institutions and effectuation in high technology start-ups: Japanese entrepreneurial voices." *Journal of Asian Business*, 25/2-3: 75-98.
- Meyer, Robert J. and Yong Shi (1995). "Sequential Choice under Ambiguity: Intuitive Solutions to the Armed-Bandit Problem." *Management Science*, Vol. 41, No. 5: 817-834.
- Miller, Kent D. (2009). "Organizational Risk after Modernization." *Organization Studies*, 30/2,3: 157-180.
- Mosakowski, Elaine (1997). "Strategy Making under Causal Ambiguity: Conceptual Issues and Empirical Evidence." *Organization Science*, 8/4: 414-442.
- Murmann, Johann Peter and Deepak Sardana (2013). "Successful entrepreneurs minimize risk." *Australian Journal of Management*, 38/1: 191-215.
- Nonaka, I. and Takeuchi, H. (1995). *The Knowledge-Creating Company*. Oxford University Press, New York, NY.
- Paul, L.A. (2015). "What you can't expect when you're expecting." *Forthcoming Res Philosophica*, 92/2: 1-23.
- Pratt, J.W. (1964). "Risk Aversion in the Small and in the Large", *Econometrica* 32, pp. 122-136.
- Perry, J.T., G.N. Chandler, G. Markova (2011). "Entrepreneurial Effectuation: A Review and Suggestions for Future Research." *Entrepreneurship Theory and Practice* July: 837-861.
- Peterson S., Walumbwa, F.O., Byron, K., Myrowitz, J. (2009). "CEO Positive Psychological traits, transformational leadership, and firm performance in high-technology start-ups and established firms." *Journal of Management* 35/2: 348-368.
- Read, S., M. Song, W. Smit (2009). "A meta-analytic review of effectuation and venture performance." *Journal of Business Venturing*, 24: 573-587.
- Romme, A.G., van Witteloostuijn A. (1999). "Circular organising and triple loop learning." *Journal of Organizational Change Management*, 12/5: 439-454.
- Rowley, J., (2000). "From learning organisation to knowledge entrepreneur." *Journal of Knowledge Management*, 4/1: 7-15.
- Sarasvathy, S.D. (2001). "Causation and Effectuation: Towards a Theoretical Shift from Economic Inevitability to Entrepreneurial Contingency." *Academy of Management Review*, 26/2: 243-263.
- Sarasvathy, S.D. and N. Dew (2005). "New market creation through transformation." *Journal of Evolutionary Economics*, 15: 533-565.
- Serenko, A. and Bontis, N (2013). "Investigating the current state and impact of the intellectual capital academic discipline." *Journal of Intellectual Capital*, 14/4: 475-500.
- Sitkin, Sim B., and Amy L. Pablo (1992). "Reconceptualizing the Determinants of Risk Behavior." *The Academy of Management Review*, 17/1: 9-38.
- Stanworth, M. John, and James Curran (1976). "Growth and the small firm-an alternative view." *Journal of Management Studies*, 13/2: 95-110.
- Tosey, P., Visser, M., Saunders, M.N.K. (2011). "The origins and conceptualizations of 'triple-loop' learning: A critical review." *Management Learning*, 43/3: 291-307.
- Tversky and D. Kahneman (1991). "Loss Aversion in Riskless choice: A reference-Dependent Model", *The Quarterly Journal of Economics*, 106/4 pp. 1039-1061.
- Wang, C.L. and Ahmed, P.K. (2003). "Organisational learning: a critical review." *The Learning Organization*, 10/1: 8-17.
- Weber, Elke U. and Christopher Hsee (1998). "Cross-Cultural Differences in Risk Perception, but Cross-Cultural Similarities in Attitudes towards Risk." *Management Science*, 44/9: 1205-1217.
- Xu, Hongwei and Martin Ruef (2004). "The myth of the risk-tolerant entrepreneur." *Strategic Organization*, 24/4: 331-355.

Yin, Richard K. (2003). *Case Study Research: Design and Methods* (3rd ed.), thousand Oaks, Ca. Sage.

Dr. David T. Methé is Professor of International and Technology Management at the Institute of Business and Accounting, Kwansei Gakuin University, Japan. dtmethe@kwansei.ac.jp