# SHORT-TERM PROJECT ORGANIZATIONS FOR CORPORATE ENTREPRENEURSHIP: EVIDENCE FROM THE JAPANESE ANIMATION INDUSTRY (2000 – 2008)

by

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# TABLE OF CONTENTS

# LIST OF TABLES

# LIST OF FIGURES

# ABSTRACT

Corporate entrepreneurship has been and will continue to be the most important means of ensuring firm survival and prosperity. To cope with a dynamically competitive environment and overcome various limitations, firms form collaborative entrepreneurships. Evidence from the practice shows that short-term collaboration among firms has become valuable for corporate entrepreneurship projects. My dissertation is a study of short-term project organizations for corporate entrepreneurship. Specifically, I examined two important and interconnected issues concerning short-term project organizations — formation and acquisition of new capabilities.

Due to its complex nature, corporate entrepreneurship sits in the crosshairs of numerous theoretical lenses. I examined literature about corporate entrepreneurship, short-term organizations, and mobility. Using behavioral theory of the firm and organizational learning as guiding theoretical perspectives, I viewed corporate entrepreneurship as a series of problem-solving activities. Specifically, the nature of corporate entrepreneurship demanded non-local search activity beyond firm boundaries. With this understanding, I investigated the novelty of entrepreneurship projects and internal and external resource conditions as factors responsible for the formation of short-term project organizations. Then, I examined whether corporate entrepreneurship could contribute to the acquisition of new capabilities. I theorized that the mobility of external experts in and out of corporate

entrepreneurship projects, firms' own experience in entrepreneurship, and previous experience in capability acquisition could predict firms' chances of acquiring new capabilities. I systematically examined these claims by testing hypotheses with a sample of 645 Japanese TV animation programs produced by 83 unique animation studios and 288 directors between 2000 and 2008.

Results strongly supported theories of the formation of short-term project organizations by providing evidence that the Novelty of Project, External Resource Availability, and Internal Resource Constraints increased the likelihood of a corporate entrepreneurship project being carried out by short-term project organizations. The results also provided supporting evidence that mobility of external experts and previous experience in capability acquisition enhanced firms' chances to learn new capabilities.

My dissertation contributes to corporate entrepreneurship literature by examining the conditions that lead to the formation of short-term collaborative entrepreneurship activities. It contributes to organizational learning theory by providing evidence that short-term project organizations offer learning experiences to participating firms and people. It speaks to the growing audience of mobility studies by showing that different types of mobility have different values in corporate entrepreneurship. It also provides valuable insights to managers who seek sustainable competitiveness through corporate entrepreneurship by emphasizing the value of short-term project organizations.

# CHAPTER 1

# INTRODUCTION

Short-term project organizations are organizations designed to last for a limited period of time and solve novel and complex organizational problems. This study is concerned with short-term project organizations for corporate entrepreneurship. Its theoretical and empirical interests revolve around two very important but rather less explored research topics namely, the formation of short-term entrepreneurial project organizations and the acquisition of new capabilities through short-term entrepreneurial project organizations. Even if these two topics seem to be separate, the former becomes a necessary condition for the latter to take place. In this regard, investigating them together in one study makes the endeavor legitimate and potentially fruitful as a contribution to strategic management and organization theories.

Research interest in short-term or temporary organizations is fairly recent. In fact, general attitudes towards anything short term in management decision making has been at best neutral, or strictly speaking, negative. This is mostly due to managers' myopic orientation or tendency to prefer gaining short-term profit while sacrificing long-term stability or growth (Levinthal & March, 1993). However, recent studies about short-term project organizations have shed new light on how the short-term existence in business activities should be understood and treated (Davis-Blake & Uzzi, 1993; Kunda, Barley et al., 2002; Barley & Kunda,

2004; Bechky, 2006). These studies share the view that effective management of short-term activities is a cornerstone of firm competitive advantage and prosperity. This view becomes more persuasive and appropriate because aggregation of effective short-term management is more likely to lead to a unique and sustainable long-term competitive position. This view is even more relevant for corporate venturing activities where many strategically critical problem-solving decisions are made and complex actions are concurrently taken in a very short period of time.

Even before researchers began paying renewed attention to phenomena revolving around short-term project organizations, firms had begun to extensively use short-term project organizations for solving problems such as business domain expansion, new product development, and business relationship cultivation. For example, short-term project organizations have become a dominant form in content creating industries such as film, animation, and the performing arts. Furthermore, whenever and wherever dynamic combinations of resources and capabilities are required, firms collectively pool their expertise and create short-term project organizations. In fact, this way of organizing assets has become popular in industries such as construction, engineering, design, and consulting. This booming use of short-term project organizations is quite understandable because dynamically changing environments and the ever-increasing demand for novel solutions to problems have made choosing short-term project organizations almost a natural course of action. Particularly for corporate venturing activities, problems that firms try to solve often require more than what a single firm can provide and short-term

project organizations tend to become vehicles that can pool and coordinate resources and capabilities residing in different firms, thereby enabling firms to cross organizational boundaries. By drawing resources and capabilities from the network (Gulati, 1999, 2007), firms can achieve a collective problem solving capacity that can be used to solve unfamiliar problems (Miles et al., 2005).

Existing studies about short-term project organizations tend to accept the presence of this particular form of organization, paying more attention to what determines the performance of short-term project organizations but less to what causes this particular organizational form to emerge. This rather unbalanced distribution of attention to performance is understandable given the fact that the existing body of literature, particularly that of strategic alliances and social networks, has already made predictions and accumulated extensive evidence about the formation of inter-firm linkages (Gulati, 1995, 1998; Gulati & Gargiulo, 1999; Gulati, Nohria et al., 2000). It is also difficult to deny that mechanisms discussed in existing strategic management literature may predict the formation of short-term project organizations for corporate venturing. However, as mentioned in preceding studies about short-term organizations, further investigation is needed to understand the factors that are responsible for the formation of short-term project organizations for firm entrepreneurial activities.

To examine and understand short-term project organizations in corporate entrepreneurship behavior, it is critical to have a guiding theoretical lens. A recent development in organizational learning theory promises great potential for

deepening our understanding of short-term project organizations for corporate venturing. Though organizational learning has not been used to explain entrepreneurial activities as frequently as other theoretical perspectives have been, a theory of organizational learning can be an appropriate and salient lens because organizational learning and entrepreneurship behavior share one critical commonality that makes the synthesis of these research streams complementary while offering insightful implications. Both theories have placed great emphasis on problem solving behavior (Levitt & March, 1988; Postrel, 2002; Greve, 2003; Nickerson & Zenger, 2004; Hsieh, Nickerson et al., 2007). Organizational learning research has viewed the search for solutions to problems as an important starting point of learning (Levitt & March, 1988). Entrepreneurship research understands entrepreneurial activities as a series of problem-solving behaviors (Stevenson & Jarillo, 1990; Amit, Glosten et al., 1993). Specifically, a majority of critical entrepreneurial activities is based on a search for solutions to novel problems (Wiklund & Shepherd, 2003).

Depending on the level of novelty in problems, two broadly defined search patterns have emerged namely, local or non-local search activities (Levitt & March, 1988). For problems with a low degree of novelty, firms tend to search for solutions without leaving their previous task domains. But when a high degree of novelty is involved, firms are forced to engage in non-local searches. Similarly, availability of solutions can influence a firm's problem- solving strategies. If few solutions are available, firms need to either internally develop or externally acquire

solutions. If more solutions are available, firms can either redeploy or recombine existing solutions. When these two dimensions are combined, the following patterns of search strategies emerge:

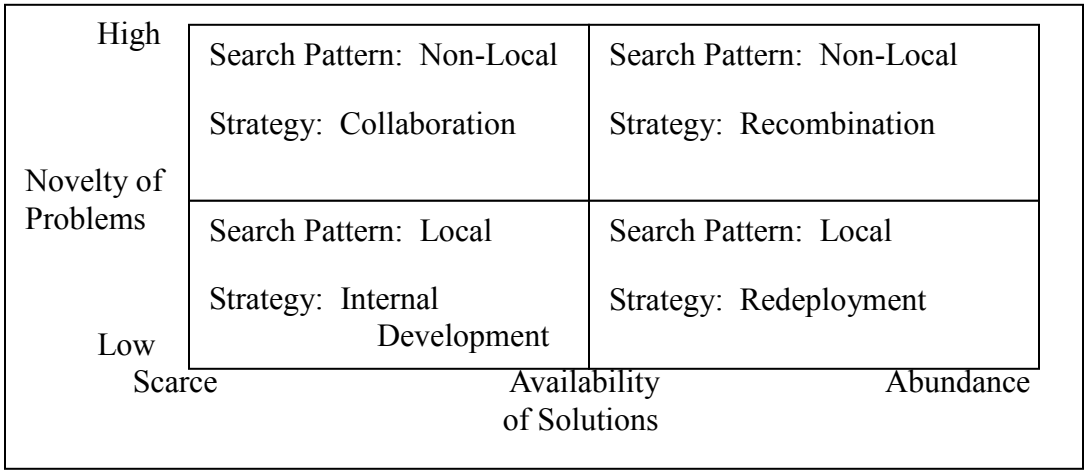



Figure 1: Search Strategies by Novelty of Problems and Availability of Solutions

Firms are likely to encounter unfamiliar problems that make existing solutions within firms either ineffective or obsolete (Ahuja & Lampert, 2001). Therefore, firms need to engage in non-local search activities that involve collaboration with other firms or recombination of existing solutions (Galunic & Rodan, 1998).

Non-local search activities are limited by firm boundaries if search activities are pursued by a single firm. Since corporate venture projects often require creative recombination of existing solutions and the creation of new solutions, a single firm's non-local search activities may not generate effective

solutions. Few studies have recently addressed this theoretical gap (Podolny, Stuart et al., 1996; Rosenkopf & Nerkar, 2001; Rosenkopf & Almeida, 2003). Rosenkopf and Almeida (2001) in particular, proposed alliances and hiring people as mechanisms through which firms could overcome limitations of firm level local searches. From the dynamic capability perspective, Capron and Mitchell (2009) argued that external sourcing such as alliances and joint ventures narrowed capability gaps. Except for these studies, little attention has been paid to the topic of forming short-term project organizations as a solution for expanding non-local searches beyond firm boundaries. Furthermore, no prior study has placed a theoretical foundation on organizational learning to understand short-term project organizations for corporate entrepreneurship behavior.

As an alternative, non-local searches can be achieved by hiring people who can bring in new ideas and skills (Cyert & March, 1963; March, 1991). Compared to collaborative non-local search activities, hiring people is a way to access agents with non-local search experience. In practice, firms hire people from other companies to acquire new technologies, enter into new business domains, and access new relationships. Studies on mobility have made important contributions to strategic management by emphasizing the mobility of human resources as a source of knowledge transfer (Almeida & Kogut, 1999; Wezel, 2006). Existing mobility studies assume that people belong to firms as resources, moving only from one firm to the other (Madsen et al., 2003; Rosenkopf & Almeida, 2003). In practice, more and more people maintain a flexible relationship with firms,

considering it part of a network within an industry rather than a permanent part of a firm. Maintaining a network membership rather than a firm membership tends to make the movement of human agents easier and more frequent, making the duration of the relationship between external experts and firms more short-term. This trend has becomes more conspicuous in industries where knowledge and skills of individuals are highly valued (Wezel, Cattani et al., 2006; Fang, Wade et al., 2007; Corredoira & Rosenkopf, 2010; Dokko & Rosenkopf, 2010). Flexible relationships between firms and human resources have been gaining in popularity in short-term project organizations where complex and unfamiliar problems are solved. Thus, expanding the scope of mobility to more network-oriented organizations can complement the current understanding of the mobility of human resources as inter-firm movement.

Organizational learning theory has great potential in explaining how the mobility of human resources residing in the industry-wide network can contribute to firms' expanding non-local searches beyond firm boundaries due to mushrooming interests in mobility and because these human resources allow firms to directly access skills and know-how required for particular activities in the industry value chain (Luo & Deng, 2007; Luo, 2008). Resources with network mobility, as they move across organizational boundaries, can play a critical role in dynamic reconfiguration of resources and capabilities (Gulati, 2007). Also, organizational learning theory can explain the mobility of human agents as a

mechanism through which firms transfer learning experience from network level to firm level (Almeida & Kogut, 1999; Carlile, 2004).

The topic of a firm's ability to create new products and services has been valued in strategic management research. To create something new, a firm needs to have either a unique set of knowledge, resources, capabilities, or assets, or a unique way of mixing them (Peteraf, 1993; Galunic & Rodan, 1998). A general agreement about how firms achieve such abilities suggests that they are either cultivated through internal development or acquired through external relationships. Different bodies of literature have compiled evidence about the relationship between firms' ownership of, or access to, these special assets and various indicators of firm performance. In entrepreneurship studies, creative destruction has been considered the primary driver of value creation (Schumpeter, 1934; Cheah, 1990; Galunic & Rodan, 1998). Corporate entrepreneurship literature in particular treats an access to special assets as the elixir of firm rejuvenation or renewal (Mezias & Glynn, 1993; Agarwal & Helfat, 2009). In sum, identifying mechanisms for how firms gain access to knowledge or assets that can be the source of innovation is an important task for strategy researchers. In this regard, examining the role of short-term project organizations in firms acquiring new resources and capabilities is an important research objective.

Corporate entrepreneurship has been positioned as the vehicle for acquiring new capabilities, i.e., "strategic renewal" (Mezias & Glynn, 1993; Rajagopalan &

Spreitzer, 1997).[1] Research on dynamic capability suggests that revitalizing strategically important resources and capabilities is critical for firm performance and survival (Helfat, 1997; Zollo & Winter, 2002). As firms collectively pursue reconfiguration and creation of capabilities in short-term project organizations (Szulanski, 1996; Galunic & Rodan, 1998; Katila, 2002; Katila & Ahuja, 2002), firms may be able to learn how to change capabilities and use this knowledge for subsequent projects (Cohen & Levinthal, 1990). Organizational learning theory suggests that experience has learning value for enhancing performance (Darr, Argote et al., 1995; Baum & Ingram, 1998; Hayward, 2002; Haleblian, Ji-Yub et al., 2006) or changing behavior (Greve, 1998, 2002, 2003). However, except for studies based on vicarious learning arguments (Lant & Mezias, 1990; Haunschild & Beckman, 1998; Beckman & Haunschild, 2002; Kim et al., 2009), little attention has been paid to the topic of transferring learning experience across levels, from short-term project organizations to firms. In fact, studies of vicarious learning are based on inferential learning arguments and not on the direct transfer of learning experience across different forms of organizations. When firms acquire skills and know-how through networked non-local searches, such knowledge may be transferred and applied to subsequent firm level activities. In addition, many studies have examined dynamically changing capabilities (Helfat, 1997; Zollo & Winter, 2002; Rothaermel & Deeds, 2006; Kale & Singh, 2007; Teece, 2007;

[1] Strategic renewal is defined very broadly to accommodate a wide range of changes in firm resources and capabilities. Instead of capitalizing on the flexible conceptualization of strategic renewal, this study focuses on acquisition of new capabilities.

Capron & Mitchell, 2009), but few have questioned whether collaborative entrepreneurship influenced the changing of firm capabilities for future entrepreneurial activities and innovation.

Drawing from and expanding on research in organizational learning, entrepreneurship, temporary organizations, mobility, and resource-based views of the firm, this study investigates the formation of short-term project organizations for corporate venturing activities and its influence on the acquisition of new knowledge as an asset.

The above discussions about the motivation for this study lead to the following research questions:

1. What factors influence the formation of short-term project organizations for corporate entrepreneurship?
    a. Does novelty sought in corporate entrepreneurial projects predict the formation of short-term project organizations?
    b. Does external availability of resources predict the formation of short-term project organizations?
    c. Do internal constraints of resources predict the formation of short-term project organizations?
2. What is the relationship between previous experience from short-term project organizations and the acquisition of new capabilities?

a. Will firms that have carried out their entrepreneurial projects with short-term project organizations be more likely to acquire new capabilities?

b. Will people who have participated in short-term entrepreneurial projects enable firms to acquire new capabilities?

c. Will repeated collaboration between people and firms make the acquisition of new capabilities more likely?

These research questions will be investigated using data from the Japanese TV animation industry between 2000 and 2008.

This study found evidence of theoretical predictions from the Japanese animation industry. Like other contents industries, animation industry has been built upon a strong sense of entrepreneurial spirit for creating something new. Furthermore, this industry has thrived on the creative talents from both individual and animation studios. Increasing demand for original animation that does not borrow ideas from existing contents makes cooperation within the industry even more necessary. To meet this demand, a new form of animation production called production committee emerged during the late 1990s. A phenomenon did not take effect until the early 2000. Through this new way of producing animation, Japanese animation industry was able to pool talents and resources more effectively. Presently, more and more production committee-based animation shows are made.

The emergence of production committee has also shaped the production relationship in the Japanese animation industry to take a different direction. As more animation shows are made through production committees, both the collaboration between animation studios and the collaboration between animation studios and key production crews have become more flexible. Particularly, key production crews such as directors, animators, script writers, character designers, etc., are recognized as valuable assets and they have gained more freedom in choosing their next projects, allowing them to move from one project to another. These creative people tend to remain outside of animation studios and become involved in animation production where their skills are being used to the fullest.

In sum, this study was about the antecedents and consequence of short-term project organizations. Building upon prior literature that could provide insights on the formation of short-term project organizations, this study effectively focused on conditions that were directly relevant to collaborative entrepreneurial activities by incumbent firms and external experts. This study was guided by a perspective shared by researchers of entrepreneurship studies, which viewed entrepreneurship as a sequence of activities that required strategic decision making for unique set of problems that were not frequently encountered by the majority of established firms. This study focused on entrepreneurial decision making by firms that were constantly facing creative challenges. This narrowly defined subject matter directed the attention to factors that has were directly relevant to answering the question of why exiting firms form short-term project organizations to carry out

their entrepreneurial activities. Furthermore, an approach based on narrowly defined scope effectively eliminated the chances of theory being strayed by other equally important issue of entrepreneurship, particularly opportunity identification.

For the antecedents, this study was concerned with the boundary conditions that could either predict or influence the formation of short-term project organizations in industry. This study identified the characteristics of entrepreneurial project and internal and external resource conditions at the time of the choice of organizational form. Thus, this study was interested in understanding the factors influencing the choice of organizational structure of their collaborative entrepreneurial projects.

As the antecedents determined the formation of short-term project organizations, they also shaped the structural characteristics of collaborative entrepreneurial activities by firm that have a lasting effect on the experience of organization and people in it. Among many possible consequences of participating short-term project organizations, this study examined the acquisition of new capabilities. Short-term project organizations as a vehicle that carried out cooperative entrepreneurship became an environment for organizations and external experts to explore new possibilities and put their creative ideas to test. They had unique experiences that became the valuable addition to their subsequent entrepreneurial projects that may require new capabilities. Thus, the second half of this study discussed the capability acquisition as the consequence of short-term project organizations.

In conclusion, this study followed a natural flow of logic concerning the short-term project organizations. The first half of this study examined the determining conditions as antecedents of the formation of short-term project organization, and the second half was concerned in learning new capabilities as the consequence. Connecting antecedents and consequences together as a interrelated process, studying them could contribute to our detailed and complete understanding about this emerging form of entrepreneurial activities.

# CHAPTER 2

# THEORY AND HYPOTHESES

## Literature Review

This dissertation is situated at the crossroads of several different streams of research about short-term project organizations, entrepreneurship, and mobility. This section provides an overview of literature from each field.

### Overview of Short-term Project Organization Studies

Short-term project organizations are considered mavericks compared to conventional forms of organizations because short-term organizations are based more on relational values than on hierarchical authorities (Powell, 1990; Bechky, 2006). Research on short-term project organizations can be traced back to the 1970s (Goodman & Goodman, 1972, 1976). Later, evidence from other contexts confirmed that short-term project organizations had become popular ways to organize talents, skills, and resources (Jones, 1996; Bechky, 2006).

Existing studies of short-term project organizations have followed two broad paths. One focused on short-term employment relationships, including team-based organizations (Barker, 1993; Davis-Blake & Uzzi, 1993; Smith, 1997; Barley & Kunda, 2004). This line of study argued that changes in labor relations altered organizational structure, making conventional organizations move away from formal hierarchical coordination to more flexible engagement. The other stream of

research emphasized the role of network relationships in organizations, paying more attention to how these organizations were governed (Powell, 1990; Jones, Hesterly et al., 1997). More recently studies about the social dynamics of film industry workers argued that coordination within short-term project organizations was more long-term based and was reinforced by institutional support. Even when their origins were different, these studies mainly emphasized how coordination was achieved in short-term project organizations (Bechky, 2006).

Similar to other topics in strategic management, research on short-term project organizations began several decades ago (Goodman & Goodman, 1972, 1976). However, this line of research has gained renewed interest only recently and almost no attention has been paid to understanding the conditions under which these organizations are formed. Particularly, existing studies assume that these organizations are already present and focus on managing internal dynamics. A critical and important missing block is the boundary conditions around the formation of the organizations because the organizations are imprinted with conditions when they are founded (Stinchcombe, 1965; Jacobides & Winter, 2007; Beckman & Burton, 2008). Knowledge of the formation of short-term project organizations will bring additional insights into how such organizations coordinate to maintain flexibility and cope with uncertainty.

Still another area for improvement can be found through understanding that these organizations are the embodiment of learning and knowledge required to solve problems that betray the use of existing solutions. For example, Ordanini,

Rubera, and Sala (2008) studied how EMI Music used a project based structure to develop new products while effectively solving problems such as creating, retaining, and transferring knowledge. With an inductive study of two product development cases, Miner, Bassoff, and Moornan (2001) conceptualized short-term project organizations as a result of organizational improvisation that promoted real-time short-term learning. When studies by Ordanini et al. (2008) and Miner et al. (2001) are considered together, it can be argued that firms with previous experience in using short-term organizations for their corporate venture projects not only learned better from their entrepreneurial experience but also developed capabilities to retain and transfer knowledge for subsequent entrepreneurial opportunities.

**Overview of Entrepreneurship Studies**

According to an Academy of Management Journal editorial (Ireland, Reutzel et al., 2005), out of 50 papers that were classified as entrepreneurship related, 37 were published after 1994, and among these 37, 25 were published after 2000. This information clearly shows that entrepreneurship research has been attracting significant attention. Review of major journals in strategic management reveals that the current development in entrepreneurship studies has firmly connected to other theoretical perspectives.

Entrepreneurship scholars have struggled to establish sound theoretical foundations for entrepreneurship research and have constantly asked philosophical questions about the identity of entrepreneurship theory within the strategic

management field (Gartner, 1990; Stevenson & Jarillo, 1990; Langlois, 2007; Zott & Amit, 2007). For example, Amit, Glosten, and Muller (1993) emphasized the uniqueness of entrepreneurial phenomena and argued that entrepreneurship research could benefit from integrating various theoretical perspectives. As mentioned in Amit et al. (1993), entrepreneurship research embraces fairly diversified research questions and anchors itself to various theoretical perspectives. This section provides overviews of preceding studies in entrepreneurship research that are directly relevant to the current study.[2]

Corporate entrepreneurship has been an important branch of entrepreneurship research. Compared with studies that focus on decisions and actions of individual entrepreneurs, corporate entrepreneurship targets the entrepreneurial activities of established firms. This particular setting poses interesting challenges. Many prior studies examined how firms could contain the tension between administrative and entrepreneurial capabilities and create a positive synergy between them (Kanter, 1985). Additionally, the spontaneous and opportunistic nature of corporate venture tends to disrupt existing organizational routines that are fixed with more stable and long-term operations (Kanter & Richardson, 1991; Kanter, Quinn et al., 1992). On the contrary, Galbraith and De Noble (1992), taking a more proactive stance, argued that corporate venture projects were important because they enable firms to maintain flexibility. The

[2] Some topics such as entrepreneurial strategy, institutional entrepreneurship, IPOs, and stakeholder relationships are excluded in the review. But this study acknowledges the significance of these topics.

effects of maintaining flexibility by accessing new resources and capabilities is critical for strategic renewal that often mentioned an important objective of corporate entrepreneurship (Mezias & Glynn, 1993; Agarwal & Helfat, 2009; Capron & Mitchell, 2009; Makri, Hitt et al., 2009). Other scholars viewed corporate entrepreneurship as firms' attempts to keep up with changes in the environment. Zahra (1993), studying the influence of environment on corporate entrepreneurship, argued that environmental hostility and dynamism were positively associated with corporate venture initiatives.

Another stream of research investigated the relationship between corporate entrepreneurship and innovation. This line of research was based on Schumpeterian entrepreneurship that emphasizes value creation through creative destruction (Schumpeter, 1934). The majority of attention was given to examining what it took to create such disequilibrium in competition (Cheah, 1990; Ward, 2004). Different research streams in strategic management contributed to innovation-oriented corporate entrepreneurship studies. First, a group of researchers relied on a resource-based view of the firm to explain whether corporate entrepreneurship could produce innovative outcomes (Miller & Camp, 1985; Sykes, 1986; Miller, Spann et al., 1991). Second, those who emphasized the value of knowledge argued that access to knowledge, a combination of different knowledge (Ward, 2004), and an accumulation of special knowledge (Junkunc, 2007) enabled firms to create novel solutions to their entrepreneurial projects. Third, more behaviorally-oriented researchers argued that learning about how to

allocate resources to exploration increased the chances for innovation (MacMillan, Block et al., 1986; Desarbo, MacMillan et al., 1987; Ravasi & Turati, 2005). Lastly, network theory scholars believed innovation was a consequence of filling the gap between network core and periphery (Cattani, Ferriani et al., 2008).

Opportunities for corporate entrepreneurship can be found both inside and outside of firm boundaries (Shane, 2001). When opportunities are identified, having a necessary set of resources and capabilities is essential to launching a corporate venture project. Confirming this logic, many researchers studied how resources and capabilities firms have influenced the performance of corporate ventures. First, scholars were interested in where resources and capabilities were located. Some scholars, following the logic of a resource-based view of the firm, argued that internal resources were critical to the success of corporate entrepreneurship (Brush & Chaganti, 1999; Thakur, 1999). In particular, CEO ability was considered critical for venture success (Baum, Locke et al., 2001). Others, emphasizing the value of resources from the environment, studied firms' abilities to access external resources (Jarillo, 1989; Van De Ven, 1993; Tsai & Wang, 2008). Still others took a more eclectic view of resources and capabilities that firms used to carry out corporate venture projects, proposing that resources and capabilities mobilized from both inside and outside of organizational boundaries mattered (Miller & Camp, 1985; Miller, Spann et al., 1991; Lee et al., 2001). Second, acknowledging the importance of resources and capabilities, some studies focused on how firms organized critical assets to support entrepreneurial projects

(Beckman & Burton, 2008). Mosakwoski (1998) proposed that entrepreneurial projects requiring the talents and skills of a group of people rather than an individual took a team-based organizational form. Wiklund and Sheperd (2003) called for more studies to examine how firms organized resources to funnel resources and capabilities required for corporate entrepreneurship.

Recently, more researchers have been drawn to entrepreneurship, relying on inter-firm relationships. Two prominent topics in this line of research are associated with strategic alliances and networks. Several benefits of crossing firm boundaries to carry out entrepreneurial projects have been identified (Shepherd, 1991). First, alliances and networks can create vastly different task environments than those of entrepreneurial projects with organizational boundaries of a single firm. As revealed in the dilemma faced by firms pursuing entrepreneurial opportunities, creating hospitable environments for creative activities is an important task (Lipparini & Sobrero, 1994). Alliances and networks promote more horizontally oriented relationships between participating firms which facilitate the sharing of knowledge and facilitate making people more tolerant of different ideas (Larson, 1991; Yanagida, 1992).

Second, previous studies showed that corporate entrepreneurial projects based on inter-firm relationships enabled firms to maintain flexibility (Niederkofler, 1991) and access valuable resources without developing them internally (Lorenzoni & Ornati, 1988; Ostgaard & Birley, 1994; Dickson, Weaver et al., 2006). Often, internal venture projects required exploration, and diversity of

resources and capabilities was associated positively with the success of discovering novel solutions from exploration. Studying small firm networks, Hara and Kanai (1994) argued that networks could provide different resources that could be valuably redeployed to entrepreneurial projects.

Third, social capital residing in relationships with other organizations functions as a conduit of tangible and intangible resources for entrepreneurial projects (Batjargal & Liu, 2004; Stam & Elfring, 2008). Because social capital is embedded in human relationships, structural characteristics of networks where firms are located are considered critical to the performance of entrepreneurial organizations (Ramachandran & Ramnarayan, 1993; Maurer & Ebers, 2006). Thus, groups of researchers investigated the mechanisms through which structural properties of networks influenced the success of entrepreneurial firms. Similarly, Koka and Prescott (2008) studied the structural design of networks for entrepreneurial firms and found that entrepreneurial firms could benefit from brokerage and diversity of resource access. For example, studying entrepreneurial firms' propensity to form alliances, Eisenhardt and Schoonhoven (1996) argued that firms with strong social positions were more likely to form inter-firm linkages. Furthermore, Kalnins and Chung (2006) and Mezias and Kuperman (2001) identified community as a reservoir of social capital.

With the above-mentioned benefits of corporate entrepreneurship relying on inter-firm relationships, some studies also identified the potential hazards of creating too much dependence on these forms of corporate venturing. For example,

Deeds and Hill (1996) proposed a non-linear relationship between the number of strategic alliances an entrepreneurial firm entered and the rate of new product development. Rothaermel and Deeds (2006) suggested that negative influences from over exploiting inter-firm relationships could be mitigated by cultivating alliance capabilities required for different types of alliances. Similarly, Lechner, Dowling, and Welpe (2006) confirmed the differential influences of reputational network and technological network on entrepreneurial firms.

Finally, researchers have shown great interest in understanding the effects of corporate entrepreneurship on firms' long-term sustainability. They have understood corporate entrepreneurship as an important engine for organizational evolution. A consensus from the previous studies on this issue was that firms could achieve strategic renewal through acquiring new assets from corporate entrepreneurial projects (Keil, McGrath et al., 2009). Kanter and colleagues (1990, 1991, 1992) argued that corporate ventures were the means from which firms could launch new streams of projects while maintaining their existing lines of businesses. Galunic and Rodan (1998) focused on the mechanism for rejuvenating firm resources through entrepreneurial activities and argued that corporate entrepreneurship enriched firms' resource portfolios by offering chances to recombine existing resources and capabilities. Firms facing trouble when navigating hostile environments could transform themselves while pursuing entrepreneurial projects, shedding past behaviors and migrating to organizational routines that could foster innovation (Stopford & Baden-Fuller, 1994). Recently,

Agarwal and Helfat (2009), with a nice overview about strategic renewal, reported that IBM achieved strategic renewal from electromechanical to electronic business machines through a series of corporate entrepreneurial projects for new product development.

**Overview of Mobility Studies**

Mobility of human resources is another interesting topic in strategic management that has received increasing attention from researchers (Madsen, Mosakowski et al., 2003; Corredoira & Rosenkopf, 2010; Dokko & Rosenkopf, 2010). Though further accumulation of research effort is needed, the topic of mobility has solid connections to existing studies about resource-based views of the firm (Wiklund & Shepherd, 2003; Fang, Wade et al., 2007), knowledge transfer (Rosenkopf & Almeida, 2003; Corredoira & Rosenkopf, 2010), and social capital (Dokko & Rosenkopf, 2010). Human capital is in itself a valuable resource, but what makes it more valuable, especially in mobility studies, is its transformation into an agent of tangible and intangible assets that can change firms' competitiveness. Thus, mobility studies typically ask a key question: "Does the mobility of key people influence competitive dynamics?" Aime, Johnson, Ridge, and Hill (2010) showed that firms tended to lose competitiveness when competing firms stole key employees. Adding movement of teams to existing mobility literature, Wezel, Cattani, and Pennings (2006) found that collective migration of people tended to cause dissolution of firms and undermined the source firms'

competitiveness by draining key resources to target firms. Similarly, Zott and Amit (2007) showed that movement of social capital laden human resources out of start-up ventures was harmful to performance.

Though not as frequently used as other theoretical lenses, organizational learning theory can provide an overarching framework for mobility studies. For example, March (1991), in his seminal article on exploration and exploitation, mentioned that inflow of human capital to organizations could bring different learning experience. Providing an alternative mechanism for overcoming the restrictions of local search, Rosenkopf and Almeida (2003) reported that mobility of inventors was associated with inter-firm flow of knowledge. Linking mobility with search behavior is particularly relevant to this study because firm entrepreneurial activity involves active searches for solutions that may span beyond firm boundaries.

With only a dozen mobility studies appearing in major strategic management journals since 2000, mobility studies have already created interesting future research opportunities. First, human resources that can move across firm boundaries are not exactly compatible with a traditional understanding of resources that the fundamental conceptualization of a resource-based view of the firm has been firmly based on (Barney, 1986; Dierick & Cool, 1989; Peteraf, 1993). Second, it has been argued that tacit knowledge was more difficult to transfer, but higher-level organizational routines and technological know-how could be transferred when key people holding such knowledge moved to different

organizations (Agarwal, Echambadi et al., 2004; Carlile, 2004; Jensen & Szulanski, 2004). Third, an increase in the mobility of people can alter labor relations within an industry. Firms may be more proactive about recruiting human resources from competitors and harnessing their ability to search for critical human resources (Kunda, Barley et al., 2002; Barley & Kunda, 2004). Lastly, as mentioned in the overview of short-term project organizations, migration of human capital can initiate a major change in how firms organize resources and capabilities, leading to a structural change. For example, firms may rely on short-term project organizations to benefit from key human resources that are constantly on the move.

**Formation of Short-term Project Organizations**

Prior studies have identified the value of knowledge and resources for achieving and sustaining competitiveness (Podolny, Stuart et al., 1996; Carlile, 2002, 2004; Ordanini, Rubera et al., 2008). This understanding has gathered a broad consensus in entrepreneurship literature (Mosakowski, 1998; Ahuja & Lampert, 2001; Wiklund & Shepherd, 2003; Teece, 2007). Audretsch and Keilbach (2007) argued that firms with more knowledge tended to have more entrepreneurial opportunities. A recent study showed that knowledge inherited and transferred from previous employment influenced the generation, growth, and survival of spinout companies (Agarwal, Echambadi et al., 2004). Thus, seeking

knowledge is both an important goal and a means for firms to achieve and sustain competitiveness.

Organizational learning theory suggests that firms search for knowledge to solve problems. The theory presents two types of search behavior for problem solving depending on what triggers the search namely, problemistic search and slack search (Cyert & March, 1963; Greve, 2003). Firms engage in problemistic search when there is a difference between the expected and realized performance or when good old ways are no longer effective. In contrast, slack search is used when firms explore new possibilities using excessive resources. The theory also offers a different mode of search based on familiarity of problems namely, local search and non-local search (Cyert & March, 1963; Levinthal & March, 1993; Ahuja & Lampert, 2001; Baum & Dahlin, 2007). Local search is used for problems for which firms already know the solution. Non-local search is used for unfamiliar problems for which firms need to overhaul the existing solutions or create entirely new solutions.

For problems that require significant creative input, conventional search strategies prescribed by organizational learning theory may not produce desired outcomes because the complexity and novelty of problems increases dramatically. Corporate entrepreneurship projects are typical examples of this case. Firm level non-local search may not produce effective solutions because firms are limited by what they have and what they have been doing (Nelson & Winter, 1982; Ahuja & Lampert, 2001). Thus, it may become necessary to expand firm level non-local

search beyond firm boundaries. In summary, characteristics of problems a firm tries to solve with corporate entrepreneurial projects determine the type of search behavior and make it necessary to rely on collaboration with other firms.

**Novelty of Corporate Entrepreneurial Project**

Organizational learning theory suggests that perceived discrepancies between aspiration level and performance triggers problematic search (Greve, 1998 & 2003a; Baum & Dahlin, 2007). In corporate entrepreneurial activities, firms engage in problematic search because of the misfit between existing solutions and the problems. The greater the deviation in entrepreneurial projects from existing solutions, the more likely it is that the firms need to engage in non-local search activities. As mentioned above, non-local searches within firm boundaries have limitations in finding truly innovative solutions. One way to overcome this limitation is to draw resources and capabilities from the network and form a collaborative entrepreneurial project (Miles et al., 2005). This transforms a firm-level non-local search to a networked non-local search (Gulati, 2007). Thus, we can predict the formation of a networked non-local search by examining the novelty required for the given corporate entrepreneurial project.

Reconfiguring existing knowledge can create novel, original, and innovative solutions. Careful reading of Schumpeter (1934) revealed that knowing what has already been done is the starting point of creative destruction. In addition, to capture the narrow window of opportunity for corporate entrepreneurship in a

dynamically changing environment, the duration of problem- solving and search activities tends to be short-term. According to Aahuja and Lampert (2001), firms tend to accumulate knowledge that is more relevant to solve familiar problems, but such knowledge becomes irrelevant for entrepreneurial projects. Moreover, knowledge that stays within firms long enough becomes sticky, resisting reconfiguration (Szulanski, 1996, 2004; Carlile; 2004). In short-term project organizations, knowledge that firms contribute to the collaboration tends to be modularized (Takeishi, 2002). With modularized knowledge, stickiness that resists reconfiguration decreases.

For certain corporate entrepreneurial projects, a non-local search that stays within firm boundaries is not effective because the solution does not reside in a single firm but, rather, in a group of firms that are collectively responsible for various activities in the industry level value chain. In this case, multiple and simultaneous access to firms in the industry-value chain is necessary to reconfigure knowledge and capabilities (Diez-Vial, 2007; Luo, 2008). Short-term project organizations emerge as an alternative form of pursuing corporate entrepreneurship because critical functions in the value chain can be accessed through network relationships.

Examples confirming the discussion so far can be easily found in the empirical context of this study, the Japanese animation industry. Given the fact that creating content is a complex task, animation production includes varying degrees of complexity. For example, animation that carries flavors of multiple

genres is more complicated to make than single-genre animation. In addition to the ever-increasing demands for creating characters, environment, and story line, combining multiple genres requires skill in making heterogeneous genre components blend well. Thus, animation with multiple genres can be considered more complex in terms of weaving the story line and creating characters; the production committee emerges as a more appropriate production format than single studio production.

For instance, *Code Geass: Lelouch of the Rebellion* (2006) was a successful TV animation series that combined multiple genres such as action, drama, psychological, science fiction, and supernatural. The production company, Sunrise, even with its long history of producing many robot animation series, was short of the skills required to incorporate other genres into the animation. While taking responsibility for robot design, Sunrise relied on other people and animation companies. The company invited Goro Taniguchi, a director who was renowned for his expertise in handling complex story lines and delivering the subtle psychology of characters, to collaborate on *Code Geass*. Also, Sunrise let a company called CLAMP to create rich characters that were necessary for delivering a dramatic story.

Second, novel solutions can be found by creating new knowledge. Firms seek efficiency by matching problems with solutions, creating a routine response to similar problems (Cyert & March, 1963; Nelson & Winter, 1985). When problems deviate far from the known applicability of existing solutions, creating new

knowledge becomes the only solution. As the demand for new knowledge increases, a single firm cannot possess all the knowledge required to pursue entrepreneurial activities (Ahuja, 2000). Thus, firms need to pool their knowledge to complement one another (Helfat, 1997), increasing the chance to create new knowledge. Collaboration of firms with specialized knowledge is more suitable for creating new knowledge (Dyer & Nobeoka, 2000; Ordanini, Rubera et al., 2008) because knowledge brought to short-term project organizations serves as a key to small causal links, which collectively, become a novel solution for an entrepreneurial project (Hsieh, Nickerson et al., 2007) . Also, to quickly acquire the knowledge necessary for entrepreneurial projects, firms may need to constantly seek different collaborations, making the duration of collaboration short-term.

*Symphonic Poem: Eureka Seven* (2005), another TV animation series, was based on the original ideas of BONES, a famous Japanese company that is well known for its dynamic action sequences in animation production. Because there was nothing similar to *Eureka Seven* in other content industries such as *manga* (comics) and video games, all the important components of animation had to be created from scratch, even if BONES, despite its reputation and ability to produce quality animation series, was unable to control certain activities in the value chain, i.e., robot design. To overcome its limitation, Bandai Company stepped in to provide BONES with talent for mecha design. Bandai is the most respected company for the famous "Gundam" franchise, one of the most successful and highly acclaimed robot franchises in the world. In addition, seven episode

directors, 21 scriptwriters, and many other animation studios participated to make BONES' original ideas a reality, which came to be known as *Project Eureka*.

Creative solutions also need to deal with uncertainty (Knight, 1921). Short-term project organizations can reduce the uncertainty of experimenting with radical ideas. In terms of reducing resource commitment, firms share the burden and commit only the necessary resources (Sarkar, Echambadi et al., 2001). Because the collaboration is short-term, firms can avoid a possible lock-in situation that is often caused by investments in relation-specific assets (Dyer, 1997; Dyer & Singh, 1998). Lastly, expert knowledge makes it possible to predict and control the outcome of collaboration (Barley & Kunda, 2004).

Regarding the risks involved in pursuing entrepreneurial opportunity, the Japanese animation industry is exemplary. Genre is often a critical component that influences the viewers' acceptance of animation. Anime fandom is established around genres, and choice of genre often determines the baseline acceptance of a particular animation (Patten, 2004). Considering a high-risk opportunity situation, less conventional genres can be more risky than genres with an established fan base. Big production studios such as Toei have been reluctant to experiment on animation series with new genres. Toei has produced animation series based on already well-known *manga* content such as *Dragon Ball* (1986), *Slam Dunk* (1993), *One Piece* (1999), and *Zatch Bell* (2003). Animation with a novel genre or with a strong flavor of genre-wise experimentation is more likely to be made by a production committee than by an incumbent production studio.

The above discussion and examples of the relationship between the novelty of solutions sought for corporate entrepreneurial projects and the formation of the short-term project organizations leads to the following hypothesis:

*Hypothesis 1: The novelty required for the project is positively associated with the formation of a short-term project organization for the focal project. (The higher the novelty required for the project, the more likely a short-term project organization will form.)*

**External Resource Availability**

Resource availability in the environment affects firms' choices of how to organize their entrepreneurial activities. Zott and Amit (2007) argued that resource availability in the environment could influence the organizational design of entrepreneurial firms. To realize entrepreneurial opportunities, firms need to externally acquire, or internally develop, resources and capabilities (Starr & MacMillan, 1990; Yli-Renko, Autio et al., 2001). Evidence from the practices suggests that existing resources and capabilities may not always prove relevant for entrepreneurial projects (Ahuja & Lampert, 2001), which makes acquisition of new knowledge necessary. In this regard, acquiring resources from the environment could be a solution to double-fold problems. First, hitting a narrow window of opportunity that quickly closes could be a significant concern for realizing an entrepreneurial opportunity. Drawing critical resources to entrepreneurial activities from the environment could enable firms to act quickly. Second, absorbing

resources that have been used in previous entrepreneurial projects can complement internal resources that have not been exposed to dynamic changes in entrepreneurial projects.

An open-system view of organization suggests that resources circulate between the environment and organizations (Buckley, 1967; Lawrence & Lorsch, 1967; Galbraith, 1973). Population ecology predicts that the release of resources to the environment increases firm-founding (Carroll, 1985; Hannan & Freeman, 1989; Anand, 1995, 1998, 2001). Further examination is needed to understand whether the change in availability of particular resources in the environment influences how firms organize their corporate entrepreneurial activities (Hornsby, Holt et al., 2008). I propose that a change in availability of resources in the environment can influence the mode of entrepreneurial projects.

When resources that have been employed in previous short-term project organizations are released to the environment, such resources are viewed as more attractive than other resources to firms pursuing entrepreneurial opportunities. For corporate entrepreneurship projects, externally sourcing resources offers benefits over internal development. First, these resources can be used immediately. For example, hiring an external expert usually does not require training. Second, these resources have a better fit with the problems that require novel solutions and can be more readily re-deployed to similar forms of corporate entrepreneurship. Third, these resources can fill the gaps in other resources committed by partner firms (Starr & MacMillan, 1990; Rao & Drazin, 2002).

According to the resource-based view of the firm, resources that can be bought from the external factor market cannot be the source of competitive advantage (Wernerfelt, 1984; Peteraf, 1993). If resources are accessible by any firms, such resources cannot explain the inherent difference among firms. Thus, uniqueness in resources is a necessary condition for firm heterogeneity (Dierickx & Cool, 1989). This view seems contradictory to the argument in this section. In fact, theoretical arguments about external resource availability are not contradicting, but rather, are complementing the resource-based view of the firm. The resource-based view of the firm suggests that firm heterogeneity and competitive advantage comes not only from ownership of unique resources but also from unique combinations of resources, even if those resources are easily available from the factor market (Barney, 1986). What become important are firms' abilities to locate external resources that fit well with internal resources. In this regard, an increase in external resource availability means firms can have more options for creating unique combinations of resources to carry out entrepreneurial projects.

Creative talents for animation production have been recognized as the most important resource. People with creative talents are valued highly and sought for by animation studios. There are even more people who strive to become part of animation production but are not yet ready to command creative skills. Tied with the Japanese comic industry, the pool of people who are eager to find their place in animation production becomes even bigger. As lots of people are entering to test their creative capacity, the whole industry becomes a big laboratory for creative

experimentation. One problem with such an excess supply makes the individual level success very difficult. This is plausible because even with many trials, not many truly stand up, resulting in many attempts with uncertain quality. While there is a big competition among individuals for recognition, there is another competition going on at the upper level labor market for people with proven skills and creativity. Mostly, the competition at this level is driven by production studios. Production studios are pressured to release animation that are received by critical animation viewers, hiring production crews including directors, animators, script writers and character designers becomes a priority for securing the chance to make quality animation. Thus, the industry happens to have a dual structure of labor force for many unskilled people with a few highly skilled creative people.

A brief examination of animation directors' project involvement history shows that studios prefer to work with directors who have previous experience with production committees. After he directed *Symphonic Poem Eureka Seven*, a production committee-based TV animation, director Kyoda Tomoki participated in other production committee animation series such as *Ghost Slayer* and *Guardian of Spirit*.

The discussion so far leads to the following hypothesis:

*Hypothesis 2: The availability of human resources (external experts) previously employed in short-term project organizations is positively associated with the formation of a short-term project organization for the focal project.*

**Internal Resource Constraints**

Starting from Cyert and March (1963), the relationship between organizational slack and innovativeness has been an important topic of organizational learning research (Gulati, Nohria et al., 2000; Greve, 2003). Whether and how organizational slack influences innovation remains to be determined (Argote & Greve, 2007; Pitelis, 2007). A recent study by Voss, Sidereshmukh, and Voss (2008) classified slack resources into four types namely, financial, customer relational, operational, and human resource. They predicted that accumulation of human resource slack would be negatively associated with exploration activities for innovation. Even though the authors considered changes in the environment, which is integrating open system view to some extent, they left potentially fruitful avenues of research by focusing only on organizational responses that are confined within the boundary of organization. On the one hand, organizations, with the accumulation of slack human resources with certain expertise, might choose the path of exploiting the already accumulated skills and expertise. On the other hand, organizations that are motivated by learning and growth might choose to enrich their knowledge base by collaborating with other organizations or external experts. Furthermore, if organizations run short of necessary human resource slack that are needed for their next entrepreneurial projects, they are more motivated to extend their search beyond organizational boundaries.

The tentative conclusion is that having additional resources may reduce internal conflict and promote innovation. The flip side of this conclusion is that if firms do not have enough resources, there may be more internal competition for resources and less innovation. However, firms still pursue entrepreneurial activities and sustain their innovative capacity even under resource constraints. This obvious gap reveals one possibility for theory development about the mode of corporate entrepreneurship that enables firms to search for resources and capabilities.

Firms use entrepreneurial projects as beachheads for new opportunities. When launching new projects, firms need to solve the problem of resource constraints. While firms pursue entrepreneurial opportunities, firms can face the following resource constraints. First, firms may lack technological capabilities required for innovation (Ahuja, 2000). Second, firms may lack the know-how to configure resources. Similarly, Rao and Drazin (2002) identified lack of capabilities to coordinate new and old resources. Third, lack of relational resources constrains firms (Powell, 1990; Powell, Koput et al., 1996).

The nature of constraints in technological capabilities is not that firms do not have any technologies but that they lack technologies that fit with existing technologies to create synergy for the entrepreneurial project at hand. As Corporate Venture Capital (CVC) plays the role of an explorer and broker for technologies (Wadhwa & Kotha, 2006), firms can assess technologies that other firms bring to short-term project organizations and can find the matching

technologies. Kusunoki et al. (1998) proposed a knowledge structure that is appropriate for complex problem solving such as coordinating different capabilities for innovation. If firms are not capable of creating and understanding multi-layered knowledge structure internally, collaborative entrepreneurship can provide the multi-knowledge structure appropriate for integrating and coordinating capabilities.

Lastly, lack of relational resources can constrain firms in a different manner than constraints by other resources. Firms suffering the liability of poor connectedness often overlook new business opportunities or critical environmental changes (Baum & Oliver, 1991). Short-term networks can provide an opportunity to increase their relational capital as they collaborate and negotiate with multiple partners simultaneously (Yli-Renko, Autio et al., 2001; Batjargal & Liu, 2004). Thus, when confronted with resource constraints for entrepreneurial projects, firms are more likely to expand their efforts beyond firm boundaries.

As a firm launches a new entrepreneurship project, it engages in solving two sets of problems. One set of problems concerns the new entrepreneurial project. This involves the actual problem-solving activities directly relevant to realizing opportunities that the firm has identified. The other set of problems concerns how to coordinate the new project with existing lines of business. To make the new project run, the firm needs to mobilize resources that are either unused or that are already being used for other projects. Deploying either slack resources or redirecting already deployed resources to new entrepreneurial projects can become a source of tension that managers are eager to contain (Kanter, 1985;

Kanter, North et al., 1990; Kanter & Richardson, 1991; Kanter, Quinn et al., 1992). Furthermore, if the firm faces serious resource constraints, starting a new and potentially promising but uncertain project can become a source of tension. To resolve this problem, participating in short-term project organizations is one possible way to balance existing business operations with new entrepreneurial projects. Due to the nature of short-term project organizations that require minimum resource commitment for a limited time, managers may transform the tidal influence of launching a major experiment that puts the entire organization under huge stress into a rippling influence.

The above discussion leads to the following hypothesis about the relationship between internal resource constraints for corporate venture opportunities and the formation of short-term project organizations.

*Hypothesis 3: The internal resource constraint a firm faces is positively associated with the formation of a short-term project organization for the focal project.*

**Acquisition of New Capabilities and Previous Entrepreneurship Experience**

Acquisition of new capabilities is a strategically important goal (Ranft & Lord, 2002; Vanhaverbeke, Duysters et al., 2002), and corporate entrepreneurship has been argued to be the means to achieve this goal (Wiklund & Shepherd, 2003). Corporate entrepreneurship is broadly defined as the acquisition of new capabilities for strategic renewal (Mezias & Glynn, 1993; Capron & Mitchell, 2009). New

capabilities can free firms from their old business domains and enable new business opportunities that can become the engine of growth (Stopford & Baden-Fuller, 1994; Agarwal & Helfat, 2009).

Previous sections theorized that short-term project organizations allowed firms to overcome the limitations in firm-level non-local searches, as they drew resources and capabilities from the industry-wide network. As they participated in short-term project organizations, collectively, firms could learn how to reconfigure existing capabilities and acquire new capabilities (Khanna, 1998; Larsson, Bengtsson et al., 1998; Beckman & Haunschild, 2002). This section attempts to answer the second set of research questions proposed in the introduction: "Do short-term project organizations provide rare learning opportunities for firms to apply what they have learned to achieving strategic renewal at the firm level?" In an attempt to extend organizational learning theory, this section discusses whether learning experience from previous short-term organizations can be transferred to subsequent entrepreneurial projects, thereby contributing to firms' acquisition of new capabilities. More specifically, this section examines whether the experience of people and firms from previous collective corporate entrepreneurship activities influence firms' acquisition of new knowledge assets. Due to the dynamic nature of short-term project organizations within an industry, understanding the mobility of critical human resources is important.

**Mobility of Human Resources to Short-term Project Organizations**

Although temporary knowledge workers are valuable resources for entrepreneurial projects, their use becomes a question of whether they can be called resources because RBV assumes ownership of idiosyncratic resources as a necessary condition for firm heterogeneity and sustainability of above-normal performance (Penrose, 1959; Wernerfelt, 1984; Barney, 1986; Peteraf, 1993). Even though the belief that resources become valuable only if they are bonded to firms is still dominant in strategic management literature, some network resource studies propose the possibility that resources residing in networks or in previous relationships become equally valuable (Gulati, 1998, 2007; Gulati, Nohria et al., 2000).

As more firms carry out entrepreneurial projects using short-term project organizations and drawing human resource from a bigger industry wide network, relationships between firms and human resources residing in the network need to be redefined. Reflecting the limited duration of short-term project organizations, short-term based relationships between firms and human resources have also become popular, leading to increased mobility of people within an industry (Grandori & Kogut, 2002). As Provan (1983) proposed, where short-term project organizations have become an important vehicle for corporate entrepreneurship, external experts with knowledge-creating capabilities become valuable as they preserve independent entities rather than becoming a permanent part of the hierarchy. Human resources with mobility fit well within the limited duration of

short-term project organizations because such resources stay only temporarily within organizational boundaries.

As examined in the literature review section, only a handful of studies have examined the mobility of human resource as a source of knowledge transfer (Madsen et al., 2003; Dhanarg & Parkhe, 2006; Wezel et al., 2006; Taylor, 2008). Mobility literature suggests that personnel migration transfers routines and resources from old to new firms (Pfeffer & Leblebici, 1973; Aldrich & Pfeffer, 1976; Almeida & Kogut, 1999). Dhanarag and Parkhe (2006) also suggested that mobility of knowledge workers was important in managing innovation networks. Existing studies of mobility understand it as people's movement from one company to another and have neglected network mobility within an industry. Specifically, these studies only focused on people who had long-term employment. However, diffusion of short-term engagements between people and firms makes stable long-term employment no longer a necessary condition for studying mobility. As Provan (1983) suggested, human resources with network mobility has become a valuable contribution to firms' strategic renewal.

Human resources drawn from the network can be redeployed either to short-term project organizations or to firms. Depending on where these resources are deployed, it is likely that the experiences they accumulate from different organizational settings will differ. When human resources are coupled with short-term project organizations, they need to solve complex and novel problems that demand radical solutions. Regarding the tasks of discovering new solutions, people

need to combine what they already know to exploring new possibilities (Kogut & Zander, 1992). If recombination of existing knowledge is not feasible, new knowledge must be created. Both processes require people to use heterogeneous knowledge and capabilities (Lavie, 2006; Taylor, 2008) and to learn how to identify critical knowledge for generating solutions (Cohen & Levinthal, 1990; Van den Bosch, Volberda et al., 1999; Pil & Cohen, 2006). Regarding the tasks of managing the creation of new solutions, people who have participated in short-term entrepreneurial projects will have more opportunities to interact with diverse organizational cultures, which may help them learn skills for negotiating conflict and coordinating cooperation (Knight, Pearce et al., 1999). In sum, external experts who have more experience collaborating on short-term project organizations are more likely to learn skills appropriate for non-local search activities and adapt to diverse organizational environments.

When the mobility to firms from previous short-term project organizations occurs, human resources are redeployed to projects to leverage skills and know-how that have already proven effective. Thus, the relationships between human resources and firms are often repetitive. Due to the repetitive nature of relationships based on the exploitive use of existing human resources skills (Wezel, Cattani et al., 2006), the characteristics of solutions sought in such collaborations can be more incremental rather than radical, redeploying skills and talents that have already proven effective. Due to this exploitive nature of repeated engagement within firm boundaries, some people may lack skills to devise integrative solutions

or learn to coordinate. Instead, people working repeatedly with a limited number of firms pick up familiar and similar capabilities. In extreme cases, it is plausible that people who have worked more for firms rather than short-term project organizations could eventually become specialists with narrowly defined expertise.

Table 1 summarizes the above discussion about how the mobility of human resources to short-term project organizations and single firms differ. Regarding whether human resources from the network can help firms acquire new capabilities, people with more mobility to short-term project organizations can transfer knowledge and capabilities to firms better than people with more mobility to firms.

This is quite conceivable because the greater the mobility to short-term project organizations, the more likely it is that such people could become a repository of diverse knowledge and entrepreneurial experience that could contribute to firms' acquisition of new capabilities.

The discussion so far leads to the following hypothesis.

*Hypothesis 4: Prior mobility of key human resources to short-term project organizations is positively associated with the acquisition of new capabilities by the focal firm.*

Table 1: Characteristics of Mobility

| | Short-term Project Organizations | Firms |
|---|---|---|
| Characteristics of movement | To firms from the previous short-term network | To short-term network |
| Boundary crossed | Firm | Network |
| Number of partner firms | Single firm collaboration | Network collaboration (multiple firms) |
| Repeated collaboration | Yes | Yes or No (depending on the composition of short-term network) |
| Chance of knowledge creation | Less likely | More likely |
| Characteristics of knowledge used | Homogeneous | Heterogeneous |
| Search behavior for problem solving | Local search (Exploitive) | Distant search (Explorative) |
| Goal of collaboration | To leverage existing skills and know-how | To create new skills and know-how |
| Learning value | Incremental | Disruptive and radical |
| Capability required | Capability to efficiently redeploy existing skills | Absorptive & combinative capabilities |
| Potential coordination Cost | Low | High |
| Learn to coordinate | No | Yes |

**Firm Experience in Short-term Project Organizations**

This section examines whether short-term collective corporate entrepreneurship offers a unique learning opportunity to firms so that they can gain access to new capabilities or knowledge assets. Particularly, this section attempts

to theorize whether a flow of learning experience from short-term organizations to individual firms takes place. As mentioned above, there is room to expand organizational learning theory to cross-level transfer of entrepreneurial experience. And existing studies become a solid foundation for understanding the relationship between cooperative non-local search experience and firms' acquisition of new knowledge assets.

Among the prominent streams of organizational learning research, studies of aspiration-performance feedback-based learning suggest that search behaviors vary depending on the nature of the problem. For familiar problems, firms do local searches to find solutions (Cyert & March, 1963; Greve, 2003). If problems are novel and complex, like those in many corporate entrepreneurship projects, collective non-local search emerges as attractive (Cyert & March, 1963; March & Shapira, 1987; Levitt & March, 1988). Reconfiguring capabilities and creating new knowledge make solutions from familiar certainties less relevant and even obsolete (Levinthal & March, 1993, Ahuja & Lampert, 2001). Thus, when firms engage in entrepreneurial projects, they must rely on non-local searches, and short-term project organizations become a tool for collective non-local searches. Firms form short-term project organizations to overcome the limitations of non-local searches constrained by firm boundaries. As argued in the previous section, short-term project organizations make it possible for firms to perform networked non-local searches through which firms can learn how to reconfigure existing capabilities and create new knowledge. If this collective search for solutions plays

a critical role in creating and discovering new capabilities, such experience is stored in the organizational memory of the participating firms (Darr, Argote et al., 1995).

Experiential learning theory suggests that experience can improve performance because firms can infer lessons from their experience (Huber, 1991; Argote et al., 1995; Haleblian et al., 2006). With more experience, firms gain more information from the inference and this leads to an accurate understanding of the causal relationship between organizational actions and outcomes (Levitt & March, 1988). As firms accumulate more experience solving complex and novel problems in short-term project organizations, they will deliberately acquire knowledge about how to perform non-local searches (Zollo & Winter, 2002; Levinthal & Rerup, 2006). The same logic can apply when firms redeploy the experience of creating new solutions from short-term collaborative projects to subsequent entrepreneurial projects.

Firms can learn new skills and know-how by observing other firms' behavior in short-term project organizations. Though not as accurate as learning from their own experience, firms can infer lessons through vicarious learning (Denrell, 2003; Kim & Miner, 2007; Terlaak & Gong, 2008). Especially in short-term project organizations, partner firms' problem-solving behavior is more easily observable because firms tend to interact with partner firms more directly and frequently. Physical and relational proximity in short-term project organizations can increase the value of inferential learning by observing partner firms (Kim &

Miner, 2007). In sum, firms learn how to do non-local search from their own and others' experience in short-term project organizations.

Firms need to use their experience from the collaborative corporate entrepreneurship when they pursue subsequent entrepreneurial opportunities on their own. Zahra et al. (2007) proposed a conversion capability that transformed knowledge as it was transferred from universities where the technologies were developed to companies where the technologies were commercialized. Zahra (2007) discussed the conversion capability when knowledge moved laterally from one organization to another. Similarly, learning can be transferred vertically from networks to firms (Carlile, 2004). The learning experience from previous short-term project organizations can benefit firms in two ways. First, content-wise, firms can learn what goes into creating new knowledge assets. Second, process-wise, firms can better learn to manage the process of creating new knowledge assets. When firms use experience from previous short-term project organizations, they make a series of conscious choices about content and the process of creating new capabilities. Thus, learning experiences from short-term project organizations can be transferred to firms and used to increase firms' knowledge base, enabling firms to acquire new knowledge assets.

In sum, a firm's experience with short-term project organizations can positively influence the firm's acquisition of new capabilities.

*Hypothesis 5: A firm's experience in short-term project organizations is positively associated with the firm's acquisition of new capabilities.*

**Mobility of Human Resources and Firm Experience in Short-term Project Organizations**

Temporarily hiring external experts to carry out projects is not new. Basically, it shares certain similarities with collaborations between firms such as strategic alliances (Gulati, 1998; Anand & Khanna, 2000; Gulati, Lavie et al., 2008) or joint ventures (Gulati & Westphal, 1999). Both collaborations between firms and collaborations between external experts and firms require serious commitment of tangible and intangible assets to jointly solve problems.[3] Both need to coordinate actions to increase their opportunities to create synergy while simultaneously minimizing redundancy and waste.

However, there are unique benefits to creating a setting where people and firms that have participated in previous short-term project organizations work together to acquire new capabilities and knowledge assets. Inviting people with high mobility to short-term project organizations gives firms access to and knowledge about other corporate entrepreneurship projects. Firms can learn vicariously from the experience of people they invite to collaborate (Huber, 1991). At the same time, firms can also directly learn from people who have had first-hand experience with creating innovative solutions. Because collaborating with people who migrate across short-term project organizations enables firms to infer from

[3] Understanding strategic alliances is beyond the scope of the current study. Therefore, only discussion about collaboration between external experts with mobility and firms is provided.

learning by doing (Darr, Argote et al., 1995) and learning by observing (Schwab, 2007), this should greatly enhance firms' opportunities to acquire new capabilities.

Success and failure are considered critical for organizations because they often become turning points in the history of organizations (Miner, Kim et al., 1996; Kim & Miner, 2000, 2007; Baum & Dahlin, 2007). Success and failure can alter the course of evolution for organizations because these significant experiences rewrite higher-level organizational routines, either reinforcing or inhibiting certain types of experience from stored, retrieved, and transformed experiences. Interestingly, firms are more likely to learn from their own significant life experiences rather than from those of others. Learning from others' significant experience is limited because correct inferences are not possible. When people with previous experience in short-term project organizations formed by other firms are invited to firms, they can have a first-hand experience of success and failure with other organizations.

Regarding the experience of success and failure, decision makers tend to have a significant bias towards success (Kim & Miner, 2000). Inviting external experts to corporate entrepreneurship projects can remedy such bias, which may help firms in the process of acquiring new capabilities. First, success of others is more visible than failure and therefore, becomes a more salient cue for behavioral change. Managers are often attracted to practices that have brought successful experience to other firms. However, the same practices do not always guarantee success for other firms. If applied blindly, such practices are more likely to cause

failure or at best do not contribute to improving the status quo. Invited people can provide a second opinion about adopting practices used by other firms. To some extent, they can work as external consultants who can offer a more objective view (Barley & Kunda, 2004).

In a similar manner, people with experience in previous short-term project organizations can contribute to firms' efforts to acquire new capabilities as they can offer direct experience about the failure of other firms and short-term organizations. This particular role of people with mobility is valuable for firms that are eager to experiment with ideas that may lead to new business opportunities or new capabilities that may rejuvenate the firms. The failures of others are hard to observe because failures are not known as often as successes. Due to this nature of failure, learning from others' failure is rare and even if such failures are observable, firms have more difficulties finding the cause. If firms collaborate with people who have seen other firms' failures, this collaboration can help firms avoid the same mistakes.

Lastly, external experts are coordinators (Lounamaa & March, 1987). One of the problems inherent to running entrepreneurship projects with existing business operations is the tendency to create tension between potentially beneficial but uncertain projects and existing operations. Often, internal managers find it extremely tricky to redirect critical resources from the existing businesses to new projects (Kanter, 1985). These managers might not have enough experience to manage short-term project organizations that require skills to coordinate activities

that are occurring simultaneously. People moving from one project to another tend to have both types of experience, so that can help internal managers reduce the tension and share their knowledge about allocating resources between entrepreneurship projects and current operations. Collaboration between external experts and organizations can be viewed as combining exploration experience from outside people and exploitation experience from within the organization.

Discussions above lead to the following hypothesis:

*Hypothesis 6: Interaction between the mobility of key human resources in short-term project organizations and a firm's experience in short-term project organizations is positively associated with the firm's acquisition of new capabilities.*

**Prior Experience of New Capability Acquisition**

The possibility of prior experience of having done the same thing becoming involved in the process of capability acquisition is one factor with a determining influence on firms' chances to acquire new capabilities. The literature of experiential learning has been built upon a notion of "learning by doing" that values first-hand experience (Huber, 1991; Ingram & Baum, 1997; Baum & Ingram, 1998). Evidence from the literature suggests that accumulation of hands-on experience is positively associated with organizational performance. Based on the preceding sections' discussions, a simpler way of saying "learning by doing" is "practice makes perfect." Thus, a main interest of experiential learning focuses on

examining the incremental value of having the same experience repeatedly. In this regard, an attempt to understand the prior experience of becoming involved in the acquisition of new capabilities or knowledge assets falls within the boundary of existing experiential learning frameworks.

Although prior experience with new-capability acquisitions still belongs to the category of conventional "learning by doing" experience, certain qualities involved in this particular experience deserve further explanation. It would be extremely difficult to argue that the experience of acquiring new capabilities is an entirely different kind of experience so that it defies the logic of experiential learning argument. However, there are qualities that should make this experience unique. Even if having more experience with new-capability acquisitions is basically doing the same thing, each experience should be different in content and process. It is not like running the same equipment and fine-tuning it for more efficient output (Darr, Argote et al., 1995; Argote & Greve, 2007). Experience with new-capability acquisition is not exactly the same as conventional repetition-based experience. For example, seasoned researchers with much publication experience will be more likely to publish their work in top-tier journals. They can increase their chances of being published because they have learned to find interesting topics, present ideas with robust research designs, and manage the review process. Number of publications as an indicator of more experience cannot be argued otherwise. What determines the success of each publication is the skills that experienced researchers have learned from going through each research

project, since each is fairly different from another. And in each research project, they adapt their strategies and use their research skills differently, which may make each publication experience more unique than the same (March, Sproull et al., 1991). Similarly, the experience of being part of projects that generate new knowledge assets or new capabilities deserves different treatment than ordinary incremental repetition based experience.

Similar to researchers honing their skills through the experience of publishing interesting works, firms and people can acquire and develop capabilities that they can use to acquire new capabilities. Cohen and Levinthal (1990) termed capabilities to understand the inner mechanisms of other capabilities "absorptive capacity" and proposed R&D expense as one of the possible proxies for measuring it. Kogut and Zander (1992), arguing that new capabilities are the product of combining existing capabilities, proposed "combinative capability." Both "absorptive capacity" (Kumar & Nti, 1998; Van den Bosch, Volberda et al., 1999) and "combinative capability" (Tschang, 2007) are two of the two most frequently used capabilities for exploration, a behavioral routine for discovering or creating novel solutions (March, 1991; He & Wong, 2004; Holmqvist, 2004). In sum, firms and people acquire and develop routines for searching for new capabilities and knowledge assets. Such routines become more effective as firms repeatedly engage in projects that demand novel problem solving.

If absorptive capacity and combinative capabilities are routines geared toward discovering novelty in other capabilities, firms and people need to know

how to navigate the process of identifying new capabilities. Unlike other activities that are more formalized and resistant to change, organizational actions required for acquiring new capabilities are more emergent. To put it differently, firms and people must adjust their course of action as the turn of events unfolds the acquisition of new capabilities. First, they need to maintain a higher level of tolerance for uncertainty and risks (Knight, 1921; Podolny, 1994; Wiseman & Bromiley, 1996; Denrell & March, 2001; Zott & Huy, 2007). How organizations and individual deal with uncertainty and risks has been an important topic, especially in entrepreneurship research. Running an entrepreneurial project is quite similar in nature to managing the process of acquiring new capabilities because both processes involve decision making and actions under conditions of high uncertainty and risk. Second, an ability to maintain openness to different ideas is necessary (Miller & Arikan, 2004; Winter, Cattani et al., 2007). The process of seeking new knowledge or capabilities is quite explorative, and applying a pre-determined routine to searches can prematurely close doors that may lead to potentially fruitful discovery. Third, coordination capability can also play a critical role (Gulati & Singh, 1998). As frequently mentioned in alliance studies, alliance capabilities are specific examples of this kind of capability. The explorative process of searching for new capabilities requires skills to allocate resources or redefine the purpose of existing resources (Baker & Nelson, 2005). As discussed in the previous section, allocating resources to search activities such as corporate entrepreneurial projects tends to create tension with existing lines of business.

Often times, resources re-directed to searching for new capabilities do not show immediately visible outcomes, which makes the coordination even more complicated. Thus, coordination capability is quite necessary for acquiring new capabilities.

Even if experience in acquiring new capabilities does work similarly to other experience, what makes people and firms better at finding creative ways to solve problems are the fundamental capabilities they use to identify potential innovation and manage the process of actually acquiring new capabilities. The following hypotheses are generated from the above discussion:

*Hypothesis 7: Prior experience of key human resources in new-capability acquisition is positively associated with the focal firm's acquisition of new capabilities.*

*Hypothesis 8: A firm's prior experience in new-capability acquisition is positively associated with the firm's acquisition of new capabilities.*

An interaction hypothesis is included to study the combined effect of key human resources and firms' experience in acquisition of new capabilities on firms' chances to acquire new capabilities in subsequent projects.

*Hypothesis 9: Interaction between experience of new capability acquisition by key human resources and a firm is positively associated with the firm's acquisition of new capabilities.*

# CHAPTER 3

# METHODOLOGY

This study combined exploratory qualitative work with quantitative hypotheses testing. Years-old personal interests in the Japanese anime and *manga* industries have made it possible to gain familiarity with and become knowledgeable about the empirical context, which turned out to be a great asset for carrying out both qualitative and quantitative work. Both qualitative and quantitative approaches such as interviews, and statistical analyses were used to build theories and test hypotheses in the context of the Japanese animation industry.

During the first stage, interviews and archival studies were performed to understand the specific phenomena, production committee. In-person interviews were carried out during the AnimeExpo 2008 held in Los Angeles. E-mail communications were used to communicate with industry experts who were not available for in-person interviews. Archival studies included magazines, books, and anime-dedicated web sites and blogs.

The second stage consisted of three rounds of data collection targeting several different sources. Preliminary data collection was carried out using customized web crawler software. For data sources that did not allow automated data gathering, data was manually collected. In particular, manual data collection turned out to be effective because raw data from several data sources was coded in different languages that needed to be verified. Even during the second stage, e-

mail communications with informants were maintained to verify authenticity of data and clarify unclear information from different sources. During the final stage, empirical models were constructed and statistical analyses were performed to test hypotheses.

## Research Setting

The phenomena around Japanese animation production offered an ideal setting to study the emergence of short-term project organizations for corporate entrepreneurship projects and their implications on firms' acquisition of new capabilities. Animation production provided a good example of corporate entrepreneurship projects. First, animation production was entrepreneurial problem solving that required intensive problem solving. For example, an animator needed to draw different sets of illustrations of a main character's face before the director finally chooses one set that will be used throughout the production. Otherwise, because pictures of the real environment were frequently used for the background of animation, production crews needed to hunt for physical environments that can be ideal settings for particular scenes. To do this, environment artists took hundreds of photos of various locations (e.g., *Tokyo Magnitude 8* (2009)). Second, animation production resembled a corporate entrepreneurship project in terms of mobilization and deployment of resources and capabilities. Animation studios not only utilized internally available skills and know-how but also drew from available

talent through external relationships with people and other studios. Third, animation production required intensive recombination of existing production skills and the creation of new ways to produce animation. Fourth, animation production was risky as the nature of the work involves the creation of novel content for which it was difficult to predict success.

As the production committee aimed to recombine creative skills from participating studios and production crews, this adequately satisfied the conditions about the composition of short-term project organizations theorized in the hypothesis section. In terms of duration of existence, a production committee only lasted on average three months and rarely up to six months. The typical length of a TV animation series and the ways in which key production crew members such as directors and animators collaborate with studios made the formation and dissolution of production committees to occur within a very short time frame. To compile the history of people's movement, it was important to have information about their career path. Similar to the film and performing arts industries, clear identification of directors and projects people participated throughout their career that made it possible to track their mobility in and out of committees. For example, director Tomoki Kyoda's involvement in animation production between 2004 and 2007 revealed the following relationship with key firms that contributed to the production of three animation series shown in Figure 2.

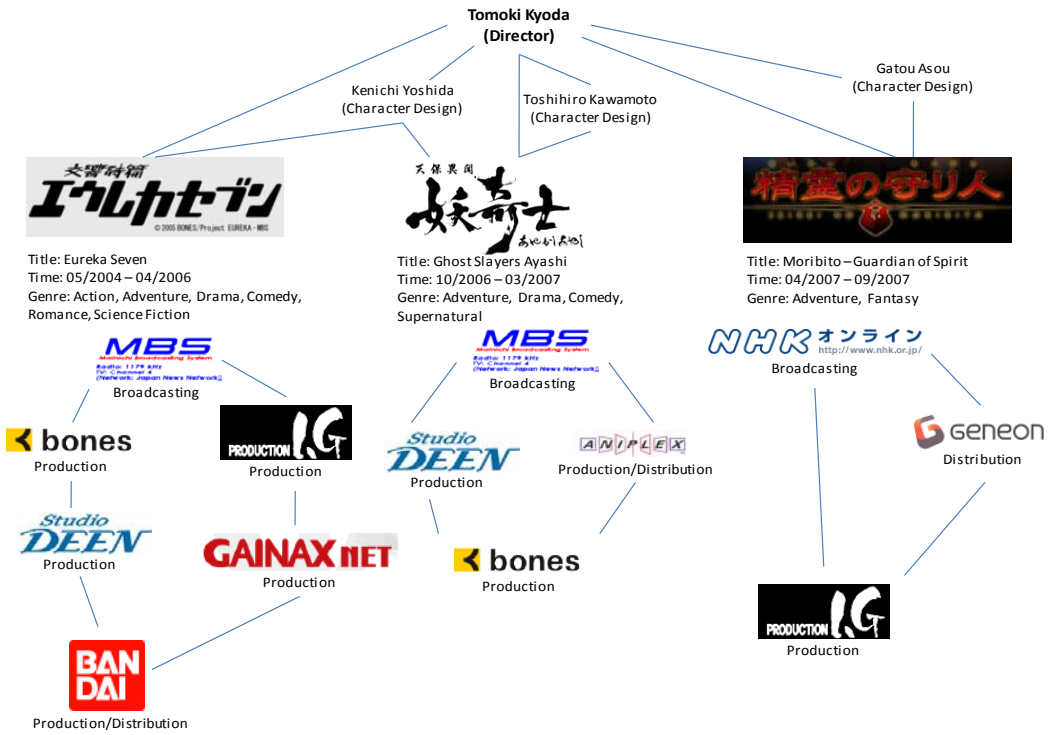



Figure 2: Director Tomoki Kyoda's Involvement in Animation Production (2004-2007)

Figure 3 shows a simplified version of relationships that director Tomoki Koyda has become embedded in. Unlike industries that have been extensively studied or used as empirical contexts for theory testing, the Japanese animation industry was an underexplored context. For this reason, our understanding of this particular industry was limited. A restricted understanding of the empirical context often led to erroneous assumptions and contaminated measurements or to erroneous specification of models by unknowingly adding irrelevant variables or omitting important variables. To avoid such mistakes and to provide appropriate levels of

understanding about the Japanese animation industry, the following section is intended to offer a detailed overview of various aspects of the industry.

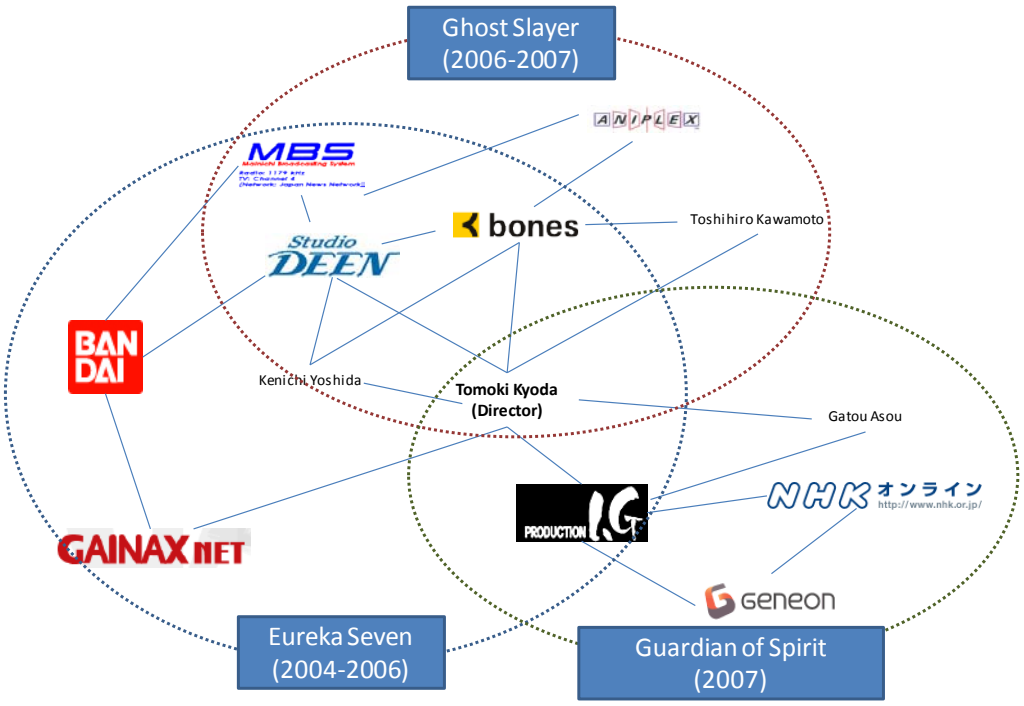



Figure 3: Simplified Network Relationship of Director Tomoki Kyoda (2004-2007

## Data

This study used a sample of data from the Japanese animation industry. Although it is called a sample, the sample included all the animation released since 1963. The date for the earliest entry of data used in this study is 1963 when *Gigantor*, the first TV animation series, was aired in Japan. In this respect, the data this study used for hypothesis testing was neither a sample nor a portion of the

population of the TV Japanese animation industry from 1963 to April 2008, but a complete collection of all possible observations. Thus, it is safe to say that the data this study used represents the entirety of Japanese animation.

To create a data set that includes appropriate information for empirical analysis, a mother data set was produced through three rounds of data collection. Data collection was performed using customized software that crawled information from Animation News Network (ANN) (www.animenewsnetwork.com), the most comprehensive information source for Japanese animation. Since 1998, ANN has compiled information about animation, companies, production crews, and relevant release clips. On-line reviews written by visitors posted on Alexa.com were quite informative (http://www.alexa.com/siteinfo/animenewsnetwork.com):

> It has a comprehensive listing of all the animes. They have up to date news.
>
> I have been coming to this web site for over a year now for the great reviews and constant updates. By far the most informative and comprehensive web site for all anime news. The best part is that it is unbiased in its reporting.

First round data crawling was conducted between January and June 2008. After the crawling, five percent of the crawled data was randomly selected to verify whether the crawled output matched the information on the ANN web site. A few issues were discovered through this data verification. For example, some data fields were returned empty for certain observations. Otherwise, some observations appeared more than twice in the data set. To correct these problems, second round

data collection was conducted between October 2008 and January 2009 on the same web site. Crawling software was adequately debugged to eliminate errors from the first round. The objective of second round crawling was to gather the information from the target site to fill the missing data points and observations. The same data verification routine was applied to check the integrity of the output. No inconsistency was found between the results from the second round crawling and the ANN site. First and second round crawling returned 4678 observations for three major animation formats and two additional formats. Major formats included movie, Original Animation Video (OAV), and TV, and minor formats include Original Net Animation (ONA) and TV special. Table 2 shows the composition of the outcome of initial crawling by format.

As shown in Table 2, TV animation represents 42.75 percent of all animation produced between 1963 and April 2008. After second round crawling, further examination compared whether information from ANN was consistent with information available from other sources such as Wikipedia (ja.wikipedia.org) and Richard's Animated Divots (www.animated-divots.com). Comparison results showed inconsistencies within production committee and production studios' information. Thus, to eliminate inconsistencies, a third round of data collection followed between September 2009 and March 2010. Specifically, the third round sought to clearly identify: (1) the production format used for TV animation; (2) production studios; and (3) directors. Due to the complex nature of comparing three different data sources with different languages, verification and collection of

data were carried out manually. The results from first and second crawling and third round data collection did not produce any significant inconsistencies.

Table 2: Composition of Animation by Format from 1st and 2nd Round Crawling (1963 – 2008)

| | Category | Frequency | Percent |
|---|---|---|---|
| Major Format | TV | 2000 | 42.75 |
| | OAV | 1512 | 32.32 |
| | Movie | 949 | 20.29 |
| Minor Format | Special | 191 | 4.08 |
| | ONA | 26 | 0.56 |
| **Total** | | **4678** | **100** |

Even if Animenewsnetwork.com was well known for its depth and breadth of information about Japanese animation, the ANN's data entry routine was not without errors because manual entry is its primary data entry method. Errors made when the information was originally entered tended to compromise the integrity of the crawled data. To solve this problem and make the data reliable for analysis, this study used secondary data sources available from similar animation related web sites. They did not offer comprehensive collections of information as the ANN did, but they were able to provide relatively accurate information about certain genres of animation or animation produced during a particular period. Additionally, more information was gathered from websites of production studios and broadcasting companies. Published materials such as *The Anime Companion: What's Japanese in Japanese Animation* (1999), *The Anime Encyclopedia* (2004 & 2006) and *Anime from Akira to Howl's Moving Castle* (2005) were frequently used

to verify the accuracy of information gathered from the Internet. Finally, the Japanese Wikipedia (ja.wikipedia.org), Anime-Planet (www.anime-planet.com),[4] and Richard's Animated Divots (www.animated-divots.com) were extensively and frequently used whenever there were inconsistencies in data from different sources. In addition to major data sources, numerous web sites containing bits and pieces of information related to Japanese animation were used to improve the integrity and reliability of the data.

Three rounds of data collection and data verification resulted in a data set for Japanese TV animation spanning from the year 2000 through April 2008. The study period was appropriate for observing the formation of short-term project organizations in the Japanese animation industry because during this time, the production committee emerged as a new production format for TV animation. To test hypotheses, this study used a sample from the Japanese TV animation industry from the year 2000 through the year 2008, a subset of the population level data from the Japanese animation industry. The data set contained information about 645 TV animation series created by 83 unique studios and 288 unique directors. The number of TV animations made by production committees was 419 and the remaining animation series were made by conventional studio contracting. Overall, there was a clear trend that the number of TV animation series made by production

[4] According to Active Anime (www.activeanime.com), Anime Planet (www.anime-planet.com) and Anime News Network (www.animenewsnetwork) were top three web sites among 25 other web sites dedicated to Japanese anime and *manga* in 2008.

committees had been increasing. Table 3 shows the number of animations produced annually and the animations made by production committees.

Table 3: Animation Produced by Production Committees (2000 – 2008 April)

| Year | Committee | Non-Committee | Total |
|---|---|---|---|
| 2000 | 10 | 23 | 33 |
| 2001 | 34 | 23 | 57 |
| 2002 | 42 | 20 | 62 |
| 2003 | 46 | 25 | 71 |
| 2004 | 60 | 32 | 92 |
| 2005 | 57 | 29 | 86 |
| 2006 | 78 | 30 | 108 |
| 2007 | 55 | 44 | 99 |
| 2008 April | 37 | 0 | 37 |
| **Total** | **419** | **226** | **645** |

Table 4 shows the breakdown of TV animation in terms of characteristics of content (original vs. existing content) and production format (production committee vs. studio contracting). Among 645 animations made by production committees, 222 were original animations. Among these 222 original animations, 201 were created by production committees.

Table 4: Existing Contents Available for the Production of Focal Animation

| Existing Contents | Frequency | Percent |
|---|---|---|
| 0 | 222 | 34.42 |
| 1 | 324 | 50.23 |
| 2 | 98 | 15.19 |
| 3 | 1 | 0.16 |
| **Total** | **645** | **100.00** |

Regarding the creative power required to produce original animation, the presence of existing content decreased the demand for creative power. If there were alternative sources of content for animation production, less creative power was needed. Generally, Japanese TV animation drew content from existing TV animation, OVA, movies, *manga*, and novels. In terms of its relationship to the existing content, the focal animation could have been a sequel, a spinoff, a remake, or an alternate retailing of the pre-existing content. Otherwise, the focal animation could be part of an existing franchise. The greater the amount of existing content available for the focal animation, the less creative power would have been required to make an animation. Table 5 shows the distribution of existing content available for the production of focal animation.

Table 5: Characteristics of Contents (Original vs. Existing Contents) and Production Format (Production Committee vs. Studio Contracting)

| | **Production Committee** | **Studio Contracting** | **Total** |
|---|---|---|---|
| Original Contents | 201 | 21 | 222 |
| Existing Contents | 218 | 205 | 423 |
| **Total** | **419** | **226** | **645** |

## Measures

### Formation of Short-term Organizations for Corporate Entrepreneurship Project

#### *Dependent Variable*

***Formation of short-term project organization***

Formation of short-term project organization for corporate entrepreneurship project was measured by observing whether the focal TV animation series was produced by a production committee or by a single studio, and was coded 1 for committee production and 0 for single studio production. In addition to dummy coding, this variable could be made continuous by counting the number of companies that participated in the production of a focal TV animation. Making the variable continuous minimized the loss of information that was often caused when the information was dichotomized. However, making this variable continuous created even bigger problems. Even if committees tended to include more companies as partners, certain TV animation series by studio contracting had more than one company and this may have produced confusing results. Moreover, at the conceptual level, what the dependent variable represented was the specific format of animation production, which made the dummy coding more relevant (Ahuja, 2000). With this in mind, all the analyses in this study were run with the dummy-coded variable.

### *Independent Variables*

#### ***Novelty of corporate entrepreneurship project***

Novelty of corporate entrepreneurship project was measured by observing whether the focal TV animation was an original creation or was adapted from existing content. Original animation required creating a story line and characters from scratch, while adapted animation borrowed existing content, mostly from *manga*. Therefore, the knowledge requirement for original animation was significantly higher than that for adapted animation. A dummy variable was created and coded 1 for original animation and 0 for adapted animation.

An alternative measure was created based on the relationship between availability of existing content and demand for creativity. The basic idea behind this measure was that the multiple availability of existing content from which the focal animation could borrow reduced the novelty required to create the focal animation. For example, if a TV animation was based on *manga* and a sequel of another animation, this animation needed less creativity than one that had to be made from scratch. Thus, this alternative measure was created by reverse coding the information presented in Table 5 above.

#### ***External resource availability***

This study identified directors as the most valuable yet difficult to substitute resource for the production of TV animation series. Animation directors were the creative minds behind animation production and were also responsible for coordinating production activities. Because they influenced the overall quality of

animation, it was essential to invite experienced directors with proven creative records of accomplishment. Directors who had previously worked on production committees were especially valued. As already shown in Figures 2 and 3, director Tomoki Kyoda, after directing *Symphonic Poem: Eureka Seven*, was invited to subsequent committee productions for *Ghost Slayers* and *Guardian of the Spirit*. Relating this observation to the measurement creation, resources available within the industry were resources with previous production committee experience.

External resource availability within the industry was operatively done through the following procedure. First, all dates of the first episode of the animation series in the study period were identified (time t). Second, in the dataset containing directors' information, directors with prior committee experience were identified. Third, for each animation series with time t, the number of directors who were not involved in any of three animation formats (TV, Movie, and OVA) was computed. Fourth, additional routines were applied to exclude directors who joined the other animation productions during the production of the focal animation series. In sum, external resource availability was a variable measuring the number of directors with previous experience on production committees who were available at the time of the launch of the focal animation.

***Internal resource constraints***

The higher the number of projects simultaneously managed by the focal firm at a given point of time, the higher the likelihood that the firm faced more resource constraints. Such constraints impacted the firm's decision to launch a new

entrepreneurship project and the mode of carrying out the project (Rao & Drazin, 2002). Animation studios were often involved in more than one animation production project at any given time. As the number of animation projects simultaneously produced by a focal studio increased, the studio became more constrained when producing the focal TV animation. Internal resource constraints were measured by counting the number of concurrent animation projects (TV, Movie, and OVA) that the focal studio was involved with when the first episode of the focal TV animation was aired.[5]

Two alternative ways to measure internal resource constraints were used. The first approach used the following equation:

$$Internal\ Resource\ Constraints_{y,t} = Studio\ Yearly\ Output_{y-1} - Number\ of\ Concurrent\ Projects_{y,t}$$

The second approach used the following equation:

$$Internal\ Resource\ Constraints_{y,t} = \frac{Number\ of\ Concurrent\ Project_{y,t}}{Studio\ Yearly\ Output_{y-1}}$$

where *Studio Yearly Output*$_{y-1}$ is the number of animations made by a studio in year y-1 and *Number of Concurrent Projects* is the number of animation projects managed by a studio at time t in year y.

[5] An assumption is made to operationalize this variable because the sample does not include information about the duration of the production period for movies and OVAs. However, information provided by informants revealed that it takes on average two years to produce a feature length animated film and three months to produce one episode of an OVA. So, this assumption was embedded in the computation routines.

***Control Variables***

The following control variables were included in the model to account for the effects of alternative forces on the formation of short-term organizations for corporate entrepreneurship projects. Control variables were broadly classified into two categories: Studio and Environment. Studio-related control variables were: 1) Studio committee Experience; 2) Studio Non-committee Experience; 3) Studio Average Performance; 4) Studio Yearly Output; 5) Studio Reputation; 6) Studio Genre Concentration; 7) Studio Export Experience; and 8) Studio Founding Year. Environment-related control variables were: 1) Other Committee; 2) Other Committee Average Performance; 3) Gross Domestic Products (GDP); and 4) Year.

Studio experience was divided into: 1) Studio Committee Experience; and 2) Studio Non-committee Experience. It was possible to sum studio committee experience and studio non-committee experience as total studio experience. Doing this instead of separating them into specific types of experience had one potential problem. Organizational learning literature suggested that particular types of past experience could be used to predict firms' choices (Baum & Ingram, 1998; Holmqvist, 2004; Haleblian, Ji-Yub et al., 2006). Thus, separating studio committee experience from total studio experience could effectively control for the alternative argument that formation of short-term project organizations was the effect of a studio's prior experience in short-term project organizations. Accordingly, the following two variables measuring different types of studio

experience were included in the model. To adequately reflect a studio's experience with producing animation, its production experience in all five animation formats since the studio was founded was calculated.

***Studio-related control variables***

*Studio Committee Experience*

'Studio Committee Experience' was operatively done by counting the number of TV animation production committees a studio joined prior to launching the focal TV animation. This variable was calculated using the following equation:

$$\text{Studio Committee Experience} = \sum TV\ Animation_{Production\ committee, Studio\ i}$$

where $TV\ Animation_{production\ committee,\ Studio\ i}$ is TV animation made by studio *i* in association with a production committee.

*Studio Non-committee Experience*

'Studio Non-committee Experience' was operatively done by counting the number of animations a studio produced without being part of a production committee prior to launching the focal TV animation. This variable was calculated using the following equation:

$$\text{Studio Committee Experience} = \sum TV\ Animation_{Non-Production\ committee, Studio\ i}$$

where $TV Animation_{Non\text{-}Production\ Committee,\ Studio\ i}$ is TV animation made by studio *i* through studio contracting.

*Studio Average Performance*

Knowing previous performance often leads to predicting firms' future behavior (Haleblian, Ji-Yub et al., 2006; Kim & Finkelstein, 2009). It was possible that a firm with a strong track record could be an attractive potential partner for other firms because other firms may have thought that they could learn from each other (Anand & Khanna, 2000; Dussauge, Garrette et al., 2000). Equally plausible was the notion that firms chose different formats for organizing their corporate entrepreneurship projects, especially when their performance from previous entrepreneurship projects was below their expectations. A big gap between expected outcome and realized outcome became a strong motivator for trying new things.

'Studio Average Performance' was measured by calculating the average ratings of all animation that a studio participated in producing prior to launching the focal TV animation.

$$\text{Studio Average Performance} = \frac{1}{N}\sum Rating_{\text{Studio } i,\text{Animation } j}$$

where N is the total number of animations made by studio *i*, and $Rating_{\text{Studio } i,, \text{ Animation } j}$ is viewer rating given to *animation j* made by *studio i*

Viewer ratings were ratings provided by people who watched at least one episode of the focal animation series and were collected from the ANN web site during the first and second rounds of data collection and updated during the third round. Ratings by consumers had been used extensively in many industries such as

electronics, computers, automobiles, books, and music. Particularly in content industries such as film, video game, animation, and *manga*, ratings were extremely important criteria for measuring performance. Thus, people and companies producing these contents were sensitive about how the content they created was received by consumers (Hwu, 2006).

Alternatively, viewership could be used to measure studio performance. Aggregating viewership of each animation produced by a studio could generate average viewership for the studio. During first round data collection, viewership information was collected from a separate source (http://www.geocities.jp/animesityouritu/). However, the viewership data had serious limitations. First, the viewership only represented the Kanto region. This data did not cover the entire country of Japan. Second, data was only available after 2000. And last, about 30 percent of weekly viewership was missing. Due to these limitations, exploring or creating a performance variable using the viewership was dropped.

*Studio Yearly Output*

Firm size was often measured by asset size (Kim, Kim et al., 2009), revenue (Haber & Reichel, 2007) and number of employees (Lee, Lee et al., 2001). However, for small firms such as animation studios in Japan, using existing measurements became tricky. These firms were extremely small and were often private companies that did not keep track of changes related to their size. Considering the labor intensive nature of animation production, counting the number of employees was the most appropriate way to measure studio size. For

animation studios, production crews were the most important assets because knowledge and experience were embedded in people. Measuring firm size using the number of employees also reflected the labor intensive characteristics of the industry. However, the number of permanent employees was not available. Keeping track of the exact number of people hired by a studio became even more problematic because Japanese animation studios almost always used temporary workers for painting, in-between animation and finishing animation. In sum, using a conventional approach to measure studio size was not effective.

As a result, instead of firm size, 'Studio Yearly Output' was used to partially capture studio size. It was plausible that bigger studios were more likely to have a larger yearly output (number of games made yearly) than smaller ones. 'Studio Yearly Output' was measured in the following way. The number of animations produced by the focal studio was counted by each year, and then this variable was lagged by one year.

*Studio Reputation*

Reputation played an important role in inter-firm relationships, especially when firms were trying to select partners for their projects (Saxton, 1997) and it often became a salient signal to firms because collaborating with well-known firms gave legitimacy to partners which enabled partners to access both tangible and intangible benefits (Baum & Oliver, 1991; Zott & Huy, 2007; Cattani, Ferriani et al., 2008). For this reason, a firm with a high reputation could find partners with less difficulty than a firm with a low reputation. For example, well-known and

respected studios such as Mad House, Production I.G., and AIC were more likely to attract other studios and companies' attention when they initiate projects for animation production using a production committee.

'Studio Reputation' was measured by counting the total number of people who saw animations created by the focal studio. The number of people who watched each animation represented the popularity of a particular animation. Summing the number of viewers across all the animations produced by a studio indirectly showed viewers' awareness of the studio. Information about the number of people who saw the animation was collected from the ANN. Compared with Anime-Planet (www.anime-planet.com), the popularity of a particular animation for the number of people who had seen the animation was consistent.

*Studio Genre Concentration*

Studios tended to build their skills and know-how around the genre portfolio they managed, and they were known for what they had done well. Previous production history worked as a path-dependent force that influenced important choices such as the formation of a production committee. Studios' preferences in future animation productions were influenced by the types of genre experiences they had accumulated. In forming a production committee, potential partners tended to look into other studios' genre expertise and examine whether there was a good fit among partners. Therefore, different emphasis in animation genre could influence not only the choice of subsequent animations but also the selection of partners. In this regard, a pattern of accumulating genre experience

became an important predictor for the formation of a production committee. Thus, 'Studio Genre Concentration' was operatively done by using the Hirfindahl-Hirschman Index (HIH). HIH was originally developed to understand the competition in an industry, or industry concentration. Calculating the HIH index for each animation studio's genre experience revealed the degree of concentration in the genre experience. Studio Genre Concentration was calculated using the following procedure: First, the following equation was used to calculate:

$$\mathrm{H} = \sum_{i=1}^{N} s_{i,j}^2$$

where $s_i$ is the share of genre $j$ in a studio $i$'s genre portfolio, and $N$ is the number of genres the studio has ever made. A small index meant the studio had been working on numerous genres without focus. However, a big index closer to 10,000 indicates the studio has worked on certain genres more frequently than others.

Second, the following formula was used to calculate normalized genre concentration for an animation studio.

$$H_* = \frac{(H - \frac{1}{N})}{1 - \frac{1}{N}}$$

where $N$ is the number of genres in the studio's genre portfolio.

Normalized HHI took care of the difference in track record among studios and partially resolved the issue related to ratio measure.

*Studio Export Experience*

Previous history of potential partners of a production committee exporting animation to overseas markets became an important indicator for other studios to understand the production committee's attractiveness. Unlike studio contracting, a production committee provided more possibilities for profit sharing among collaborating partners. In studio contracting-based production, major providers of financial resources owned the rights to reap profits generated from the retailing and distributing of animation content. In a production committee, dependence on the major providers decreased and partner studios and companies pooled resources for the production. As they jointly committed resources and shared risks, they were entitled to share profits. Exporting animation content to foreign markets was one of those chances for production committee partners to gain financially. If a studio with experience in exporting many animation series to foreign markets, either through licensing to TV stations or DVD distribution, tried to organize a production committee, this production committee would have higher odds of forming than other committees for studios with less export experience. Thus, 'Studio Export Experience' was measured by the number of animations the focal studio exported prior to the release of the focal animation.

*Studio Founding Year*

To control for the effects of age, 'Studio Founding Year' was entered. Older studios were more likely to work with other studios and had more relational capital that could influence the formation of production committees through

different mechanisms that this study did not predict. Age had been argued to influence firms' chances of forming inter-firm linkages (Ahuja, 2000). For example, a studio with a long presence in the industry tended to establish industry-wide influence that could persuade other studios to participate in the production committees.

***Environment-related control variables***

*Other Committees*

Firms were attracted to particular decisions because they had seen others doing the same thing. Studies based on vicarious learning had argued that when facing important problems, firms tended to justify their choice by observing what other firms had done (Huber, 1991; Schwab, 2007). For example, when a firm observed the merger and acquisition decisions of other firms where they sat on the same board of directors, they would infer lessons from what they observed and made similar choices (Haunschild & Beckman, 1998). A legitimacy argument led to a similar conclusion. If many firms in an industry adopted a particular organizational routine, other firms tended to feel the conformity pressure and were obliged to pursue the same organizational practice (Kennedy & Fiss, 2009). Similarly, if studios were actively using production committees to produce animation, other studios would consider production committees more seriously for their next animation production. Thus, 'Other Committees' were measured by

counting the number of committees formed for TV animation production prior to production of the focal animation.

*Other Committee Average Performance*

In addition to the number of other firms that adopted certain organizational routines, firms tended to pay more attention to the successful performance of other firms and to study the success factors responsible for the superior performance. If firms concluded that certain strategic changes by other firms altered their performance, this would lead to the same strategic choices, such as how to organize their next corporate entrepreneurial project. In addition, success and superior performance were salient pieces of information that tended to attract decision makers' attention. Thus, 'Other Committee Average Performance' was measured by calculating the average ratings of animation produced by production committees that preceded the release of the focal TV animation.

*Gross Domestic Product (GDP)*

To control for the effect of the local economy on the formation of production committees, Gross Domestic Product (GDP) of one year prior to the launch of the focal TV animation was included in the model. Macro-economic indicators such as GNP and GDP were used in other studies to control for the effects of environment on firm behavior (Baum & Ingram, 1998). Actual dollar value of Japan's annual GDP and log transformed value were separately included in the model.

*Year*

Calendar year was included to account for other influences from the passage of time, such as changes in the preferences of animation viewers or advances in production technology. The variable, 'Year,' was operatively done by entering the specific year when the focal TV animation was produced. Table 6 summarizes variables and measurements for Analysis 1.

Table 6: Variable Descriptions for Hypothesis 1, 2, & 3

| | Variable | Measurement |
|---|---|---|
| Dependent | Formation of Short-term Project Organization | Focal TV animation is made by a production committee (1), or by a studio contracting (0) |
| Independent | Novelty of Corporate Entrepreneurship Project | Focal TV animation is original animation (1), or adapted from existing contents (0) |
| | External Resource Availability | Number of directors with previous committee involvement who are available to join the focal TV animation |
| | Internal Resource Constraints | Number of concurrent animation projects managed by the focal animation studio |
| Control | Studio Committee Experience | Number of previous production committee participated by the focal animation studio |
| | Studio Non-Committee Experience | Number of previous non-production committee participated by the focal animation studio |
| | Studio Average Performance | Average rating of all the animation produced by the focal animation studio |
| | Studio Yearly Output | 1 year lag of the total number of animation produced by the focal animation studio for 1 year |
| | Studio Reputation | Number of people who reported to see animation produced by the focal animation studio |
| | Studio Genre Concentration | Normalized Hirfindahl-Hirschman Index of animation produced by the focal animation studio |
| | Studio Export Experience | Number of animation exported to foreign countries by the focal animation studio |
| | Studio Founding Year | Founding year of the focal animation studio |
| | Other Committee | Number of other committees formed prior to the focal animation |
| | Other Committee Performance | Average rating of animation produced by other committees prior to the focal animation |
| | GDP | 1 year lag of GDP |
| | Year | Calendar year |

**Acquisition of New Capabilities**

***Dependent Variable***

Acquisition of new capabilities occurs when new capabilities are added to a firm's existing set of capabilities. Conceptually, acquisition of new capabilities refers to changes in the firm's capability profile, resulting in an increase in a firm's knowledge base for new product development and innovation. This study directly observed changes in a firm's capabilities by assessing whether capabilities that were absent in the focal firm's existing capabilities had been added at the time of observation. For example, if an animation studio used genres in an animation project that had not been tried previously, this could be considered an addition of new genres. Acquisition of new capabilities was operatively done by the following procedure. First, all animations produced by the focal studio were sorted chronologically. Second, based on the earliest entry of animation, composition of genres was examined. From this examination, a list of genres by studio was created. Third, genres used in the focal animation were compared with the list. Fourth, if new genres appeared in the focal animation, acquisition of new capabilities was coded 1 and the list was updated with newly appeared genres. If no new genres appeared, acquisition of new capabilities was coded 0. And fifth, step 4 was repeated until all animations made by the focal studio were exhausted.

***Independent Variables***

***<u>Mobility of human resources to short-term project organizations</u>***

Mobility of human resources to short-term project organizations occurs when people move to short-term project organizations. As explained in the research context, labor relations in the Japanese animation industry had come to favor project-based employment over permanent employment, especially for key production crew members such as directors, animators, and scriptwriters. This trend of managing production crews on a needs basis had become more popular at the time of this study. Due to this change in the relationship between animation studios and production crews, key contributors to animation production could move more freely from project to project. Among these freely moving production crews, this study identified animation directors as the most important human resource. This variable was defined by the sum of production committees a director had participated in prior to the production of the focal TV animation.[6]

Using a director's previous experience with a production committee was problematic, since a proxy for a director's mobility created a problem of equating mobility with personal experience. However, viewing mobility as a one- time event also had its drawbacks. First, examining mobility as a separate event was not appropriate for the empirical context of this study where movement of people occurred frequently. And second, treating mobility as an independent event tended

[6] Mobility measure is problematic because it measures not the mobility itself but counts the number of committees a director has worked for.

to underestimate the effects of accumulated experience in moving across many organizational boundaries. Acknowledging the strengths and weaknesses of using the accumulated experience of moving to short-term project organizations as mobility, this study chose to use an experience-oriented measure of mobility.

***Firm experience in short-term project organizations***

Hypothesis 5 predicted a positive association between a studio's previous production committee experience and its chance to acquire new genre skills because the studio could transfer lessons learned from collaborating with a production committee. Firm experience in short-term project organizations was operatively done by counting the number of production committees for TV animation that a focal animation studio had participated in prior to the focal animation.

***Prior experience of human resources in new capability acquisition***

Hypothesis 7 predicted that directors should be significant inputs for creativity in animation production. Prior experience of human resources in new capability acquisition was defined by the cumulative sum of unique genres created by the focal director. This variable was computed using a routine similar to that which generated the dependent variable namely, acquisition of new capabilities. Acquisition of new capabilities was a dummy variable that captured the addition of new genres to the focal TV animation. Only this time, prior experience of human resources in new capability acquisition was the sum of unique genres that the focal director ever tried to include in previous animation productions.

***Prior experience of firm in new capability acquisition***

Hypothesis 8 predicted a positive association between a studio's previous experience in trying new genres and its chance to include new genres in the focal TV animation. The same routine used to create Prior experience of human resources in new capability acquisition was employed and was measured by counting the unique genres that the focal studio ever attempted to include in previous animation productions.

***Control Variables***

Similar to control variables included in the preceding analysis for Hypotheses 1, 2, and 3, two sets of control variables were included in the model to test Hypotheses 4 through 9. For director-related control variable, 1) Director Mobility to Non-committee, 2) Director Average Performance, 3) Director Yearly Output, and 4) Director Genre Concentration, were entered. For studio-related control variables, 1) Studio Non-committee Experience, 2) Studio Average Performance, 3) Studio Yearly Output, 4) Studio Genre Concentration, and 5) Studio Founding Year, were included. Additionally included were: 1) Repeated Collaboration Experience in Production Committee by Director-studio Tie; 2) Repeated Collaboration Experience in Non-production Committee by Director-studio Tie; and 3) Year.

***Director-related control variables***

*Director Mobility to Non-committee*

'Director Mobility to Non-committee' was included to observe whether the focal studio's chance to try new genres for the focal animation could be explained by a director's movement to non-committees. Because a director's mobility was classified as either production committee or studio contracting, comparing the coefficients of mobility to different destinations revealed which mobility could better explain the production of animation with new genres. During an interview, a director revealed that making the same genre of animation repeatedly gave him an urge to try new genres. Compared with production committees, studio contracting tended to focus on replicating what the director was well known for. This will increased the chance of making the same genres of animation as in studio contracting. However, as the director confessed, directors who had worked long enough may have wanted to escape the repetitive cycle of reproducing the same thing and experience something new. Even if this was anecdotal evidence, such a tendency may have influenced a firm's chance to try new genres when directors had many experiences working in non-committee settings. Thus, 'Director Mobility to Non-committee' was operatively done by summing a director's previous mobility to non-committees.

*Director Average Performance*

'Director Average Performance' was defined by the average rating of all the previous animations in which a director assumed a directorial role. As

mentioned above, performance was an important indicator for predicting changes in behavior. A few possibilities could link a director's performance with a studio's chance to learn skills for new genres while collaborating with the director. If animations made by a director were well-received by viewers, studios working with the director would be more likely to allow him to experiment with new genres, which would increase the chances of creating an animation with new genres included. Alternatively, if a director's track record with certain genres of animation was disappointing, he would want to try new genres to increase his chances of receiving higher ratings. Either situation could predict an association between a director's performance and collaboration with a studio's chances in trying new genres.

*Director Yearly Output*

'Director Yearly Output' was operatively done by counting the number of animations made by a director during the past year of the release of the focal animation. Similar to studios, directors could only be involved in a limited number of animation projects each year. If a studio's yearly output indirectly captured studio size, a director's yearly output was more closely related to the director's mental capacity for creative activities. Since a manager's attention was the most important resource for organizations, a director's creative capacity assumed a similar role in creating new genres. Therefore, it was more likely that a director who was involved in many projects would exhaust his creative reserves and would find it difficult to come up with creative solutions such as new genres.

*Director Genre Concentration*

'Director Genre Concentration' was defined by whether a director's genre experience was diversified over many genres or concentrated to a few genres. Calculating a director's genre concentration followed the same process used to calculate a studio's genre concentration in the previous section. A director's genre concentration could influence a studio's chance to learn how to specifically include new genres in a focal animation. A director with high genre concentration, meaning that the director had narrow genre preferences and had built production experience around those genres, would find it difficult to contribute to a studio's attempt to learn new genres. High genre concentration meant that the director rarely deviated from what he was used to making. Therefore, studios intending to learn new genre capabilities may have been better off when they bet on directors with balanced genre experiences than on directors with special genre preferences.

The same set of studio-related control variables was chosen to examine whether a studio's chances of acquiring new genre skills could be explained by other studio characteristics.[7]

***Studio-related control variables***

*Studio Non-committee Experience*

'Studio Non-committee Experience' was defined by the sum of animations created by a studio under a studio contracting regime. Unlike studio committee

[7] Since the same control variables were employed, it was not necessary to provide the same variable descriptions. Therefore, studio related variable descriptions were intentionally omitted and only the distinctive points relevant to this section were provided.

experience that could promote studios' chances to learn new genres skills, studio non-committee experience was associated with exploiting existing genre skills. Thus, an increase in non-committee experience had a negative influence on a studio's chances to acquire new genre capabilities.

*Studio Average Performance*

'Studio Average Performance' was measured by the average of ratings for all the animation a studio produced prior to the release of the focal animation. Strong performance tended to justify choices made by organizations. However, organizations were resistant to change unless they were forced to under extreme conditions such as performance failure. In this regard, studios with poor ratings were motivated to try to learn new genres. Still, this line of prediction was problematic because studios suffering from poor performance were more likely to be poor learners and even if they tried to acquire new capabilities, their chances to learn new genre skills would be low.

*Studio Yearly Output*

Due to the data availability issue, this study used 'Studio Yearly Output' as a proxy for studio size. Acquisition of new capabilities could be viewed as part of firms' exploration activities. Exploration required slack resources and bigger firms were more likely to have more slack resources. If the relationship between firm size and slack resources was applied to the empirical setting of this study, studios with bigger yearly output might have been able to use additional manpower not utilized in existing projects to learn new genres.

*Studio Genre Concentration*

Similar to the effects of director's genre concentration on a studio's chances to acquire new genre capabilities, studios with highly concentrated genre experiences were less likely to learn new genre skills. This was quite plausible because firms with narrowly defined capabilities were more resistant to change. Narrowly defined capabilities could be associated with exploitation rather than exploration and this reduced a firm's chances to learn new capabilities or acquire new resources.

*Studio Founding Year*

'Studio Founding Year' was defined as the year of the focal animation studio's founding. Alternatively, the age of the studio was also calculated using the following equation and then added to the analysis separately.

$$\text{Studio Age} = Year_{p,Animation\ i} - Year_{f,Studio\ j}$$

where $Year_{p,Animation\ i}$ is the year when animation *i* was produced, and $Year_{f,\ Studio\ j}$ is the year when the focal studio *j* was founded.

***Other control variables***

*Repeated Collaboration Experience in Production Committee by Director-studio Tie*

'Repeated Collaboration Experience in Production Committee by Director-studio Tie' was measured by counting the number of animations made by production committees in which the focal director and studio collaborated as a pair.

$$\text{Repeated Collaboration Experience in Production Committee by Director-Studio Tie} = \sum Animation_{Director\ i, Studio\ j} \text{ if } Production\ Committee = 1$$

where $Animation_{Director\ i, Studio\ j}$ is animation made by *Director i* and *Studio j* pair and Production Committee = 1 is the focal animation is production committee based.

*Repeated Collaboration Experience in Non-production Committee by Director-studio Tie*

'Repeated Collaboration Experience in Non-production Committee by Director-studio Tie' was measured by counting the number of animations made by studio contracting where the focal director and studio as a pair collaborated.

$$\text{Repeated Collaboration Experience in Non-Production Committee by Director-Studio Tie} = \sum Animation_{Director\ i, Studio\ j} \text{ if } Production\ Committee = 0$$

where $Animation_{Director\ i, Studio\ j}$ is animation made by *Director i* and *Studio j* pair, and Production Committee = 0 is the focal animation and is not production-committee based.

*Year*

'Year' was defined by the calendar year**.** Calendar year reflected any trend effects existing during the study period such as changes in preferences of animation viewers, advances in technologies used in animation productions, and so on. Table 7 summarizes variables and measurements for Analysis 2.

Table 7: Variable Descriptions for Hypothesis 4 through 9

| | Variable | Measurement |
|---|---|---|
| Dependent | New Capability Acquisition | New genres are included in the focal TV animation (1), otherwise (0) |
| Independent | Mobility of Human Resource to Previous Short-term Project Organizations | Number of migration by a director to production committees |
| | Firm Experience in Previous Short-term Project Organizations | Number of production committees participated by the focal studio prior to the focal TV animation |
| | New Capability Acquisition Experience by Human Resource | Number of animation with new genres produced by the focal director prior to the focal TV animation |
| | New Capability Acquisition Experience by a Firm | Number of animation with new genres produced by the focal studio prior to the focal TV animation |
| Control | Studio Non-Committee Experience | Number of previous non-production committee participated by the focal animation studio |
| | Studio Average Performance | Average rating of all the animation produced by the focal animation studio |
| | Studio Yearly Output | 1 year lag of the total number of animation produced by the focal animation studio for 1 year |
| | Studio Genre Concentration | Normalized Hirfindahl-Hirschman Index of animation produced by the focal animation studio |
| | Studio Founding Year | Founding year of the focal animation studio |
| | Mobility of Human Resource to Previous Non-Short-term Project Organizations | Number of people who reported to see animation produced by the focal animation studio |
| | Director Average Performance | Normalized Hirfindahl-Hirschman Index of animation produced by the focal animation studio |
| | Director Yearly Output | Number of animation exported to foreign countries by the focal animation studio |
| | Director Genre Concentration | Normalized Hirfindahl-Hirschman Index of animation produced by the focal director |
| | Year | Calendar year |
| | Repeated Collaboration Experience of Firm-Human Resource Tie in Previous Short-term Project Organizations | Number of TV animation created by a studio-director tie in previous production committees |
| | Repeated Collaboration Experience of Firm-Human Resource Tie in Previous Non-Short-term Project Organizations | Number of TV animation created by a studio-director tie in previous studio contracts |

## Analysis

Analysis 1 tests hypotheses predicting the formation of short-term organizations for corporate entrepreneurship projects. The unit of analysis is a TV animation series. The theory predicts whether novelty sought in a corporate entrepreneurship project (Hypothesis 1), external resource availability (Hypothesis 2), and internal resource constraints (Hypothesis 3) influences the dependent variable, the choice of a production committee over a single studio production as a production format for the focal TV animation.

Because the primary dependent variables for Analysis 1 was dichotomous, the data was fitted to a logistic regression model (with Maximum Likelihood Estimation) to estimate *a* and *b* in the equation below and thus hypotheses were tested (Pampel, 2000; Agresti, 2002; Kleinbaum & Klein, 2009). The logistic regression model has several merits (Kleinbaum & Klein, 2009). First, the method itself is fairly simple to execute (Pampel, 2000). Second, results from a Logit analysis are easy to interpret. Thirdly, properties of parameter estimates from Logit analysis make it possible to implement a regression t-test.

For Analysis 1, a base line model was constructed by including only the control variables. Then, independent variables were added to the base line model. Results of hypotheses testing were reported based on the full model that included all the variables. The logits of the unknown probabilities about the focal animation

being produced by a production committee were modeled as a linear function of the independent variables $X_i$:

$$\text{logit } P(X) = \alpha + \sum b_i X_i \text{ where } P(X) = \frac{1}{1 + e^{-(\alpha + \sum b_i X_i)}}$$

where P(X) is the odds of the focal animation being made by production committee, $X_i$ is a row of vector of covariates, and $b_i$ is an associated vector of coefficients.

To check the presence of strong multi-colinearity, Variance Inflation Factors' (VIF) were examined (Cohen & Cohen, 1983; Berry & Feldman, 1985). Similar to other linear probability models, the Logit model prohibits the use of conventional R-squared model for assessing model fit because frequency distribution of the dependent variable determines the variance of the variable (Kleinbaum & Klein, 2009). R-squared model has no particular meaning in logistic regression. However, following the convention of using R-squared model to examine the change in explanatory power with the addition of theory variables to the empirical model, pseudo-R-squared results were reported. The likelihood ratio test (log-likelihood test), a form of deviance test for model fitting, was used (Hardin & Hilbe; Liao, 1994). The model chi-square from the test was used to determine the model fit. Additional information about model fit improvement was provided with Akaike Information criterion (AIC) and Bayesian Information Criteria (BIC) that indicated a smaller value for a better model fit (Hardin & Hilbe).

Analysis 2 tested hypotheses predicting the focal firm's acquisition of new capabilities. The unit of analysis was production studio. One set of hypotheses was tested to understand whether previous direct exposure of a studio to production committees (Hypothesis 4) and a director's mobility to production committees (Hypothesis 5) enabled the focal animation studio to include new genres in the focal TV animation. The other set of hypotheses were tested to determine whether a director's and a studio's previous experience (Hypothesis 7 and 8) in creating new genres helped the studio to include new genres in the focal animation. Hypothesis 6 tested a joint effect of a director's mobility to production committees and a studio's previous experience in production committees on a new genre's addition to the focal animation. Finally, Hypothesis 9 tested a joint effect of Hypothesis 7 and 8 on a studio's chances to learn new genres. Similar to Analysis 1, Analysis 2 started with constructing a base line model that included only the control variables. Thereafter, sets of independent variables were added sequentially. Hypotheses were tested based on the results from the full model.

Analysis 2 was basically similar to Analysis 1 because both analyses used bivariate choice variables as dependent variables. The difference between Analyses 1 and 2 was that the latter required pooling of studio observations. Thus, Analysis 2 used a random-effect logistic regression model. Pooling repeated observations of the same firm violated the assumption of independence, resulting in serial correlation of the model's residuals. To resolve this problem, a within-group fixed effects model was used, which had almost become a convention. Fixed-effects

models treated the unobserved individual effect as a constant over time and computed it for each firm, including dummy variables for each. In this regard, fixed-effects models were similar to least-squares dummy variables models (Gulati, 1999). However, a fixed effects model was not appropriate for this study's data because 31.3 percent of studios in the sample (26 out of 83 studios) acquired only one new genre during the studio period, while other studios learned many new genre skills. Using a within-group fixed-effects model with panel data that were more cross-sectional in nature than longitudinal may have resulted in less efficient estimators and estimation bias as well (Maddala, 1971; Hsiao, 1986; Kim & Finkelstein, 2009). The least-squares dummy variables used in a within-group fixed effects model could cause underestimation of the autoregressive coefficients, a serious estimation bias referred to as a Hurwicz bias (Hurwicz, 1950; Hsiao, 1986). Hence, a random-effects model was generally preferred for data with the above described properties (Green, 2003). Random-effects models treated the heterogeneity that varied across firms as randomly drawn from an underlying probability distribution (Gulati, 1999). Gulati (1999) also argued that a random-effects panel model could address concerns of unobserved heterogeneity. Both Gulati (1999)and Kim and Finkelstein (2009) reasoned that fixed-effects models could generate biased estimates for panels over short- periods. Because this study used nine years of firm-year records, the sample could be considered a fairly short panel. This also made a random intercept logistic regression model a preferable approach over a fixed-effects model (Rabe-Hesketh & Skrondal, 2005).

Finally, the logistic regression model (Analysis 1) and the random-effect panel logistic regression model were estimated using Stata 11 (Baum, 2006).

# CHAPTER 4

# FINDINGS

## Qualitative Findings

### Overview of Japanese Animation Industry

Since the first animation, Imokawa Mukuzo Genkanban no maki (Mukuzo Imokawa, *The Doorkeeper*) by Oten Shimokawa (1892-1973) was made by in Japan in 1917, animation, often called anime, has become a national pastime and hobby (Patten, 2004). The Japanese animation industry meets more than 80% of global animation demand, spreading global scale fandom of so-called "anime" or "Japanimation" (Clements & McCarthy, 2006). Figure 4 shows the yearly number of TV animations exported to overseas markets.

Besides well-known studios such as Studio Ghibli, Production I.G., Toei, etc., approximately 440 animation production houses produce feature animated films, original video animations (OVAs or OAVs), and TV animation series. Geographically, the Japanese animation industry has been experiencing a high level of agglomeration. Approximately 61.4% of Japan's animation studios are located around the Tokyo area (JETRO, 2005). In 2004, domestic sales of animation experienced a record- high 191.2 billion yen due to the historic success of *Spirited Away* (2004) by Studio Ghibli. While the global animation market was estimated to be US$ 75 billion in 2009 and growing, the domestic market for animation in Japan

has been continuously shrinking 2% annually (DCI & MDI, 2005). Excluding the occasional success of feature-length films, a diminishing domestic market has become a serious concern for studios and production crews in the Japanese animation industry.

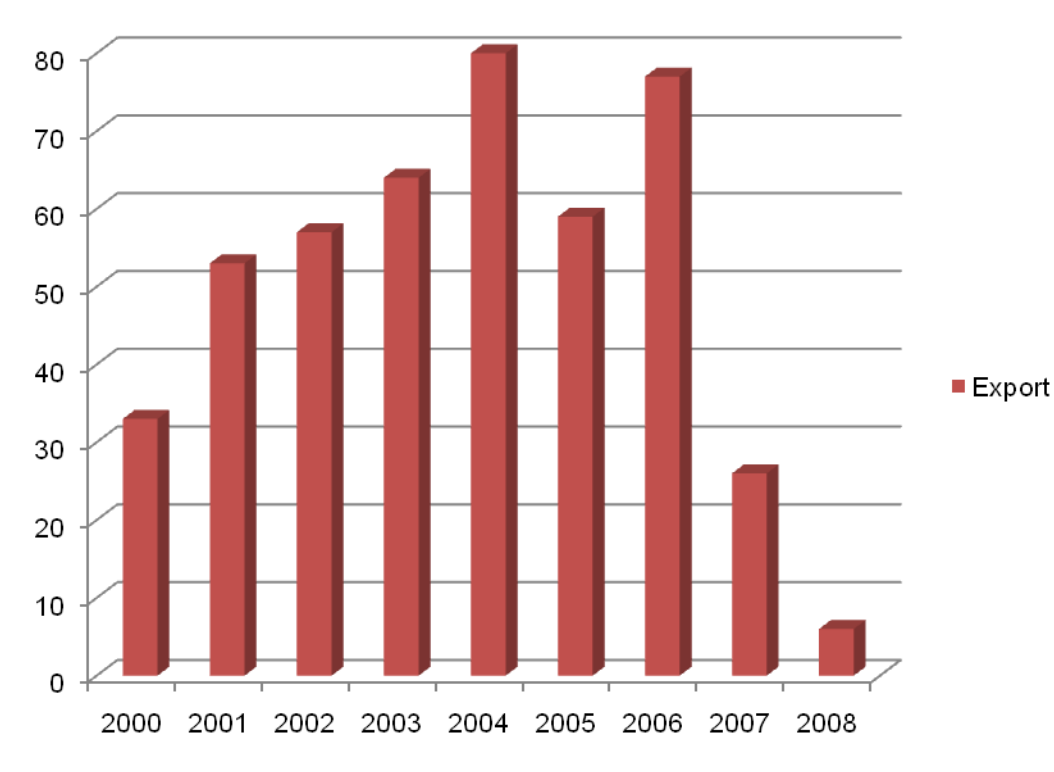



Figure 4: Number of Japanese TV Animation Exported

***Parties Involved in Animation Production***

Parties directly involved in the animation production include studios and production crews such as directors, animators, storywriters, etc. (DCI & MDI, 2005). Along with *manga* (comics), animation assumes the central position in the

Japanese content industry (Thompson, 2007). Besides production studios, many other companies are important stakeholders at different stages of animation production. Broadcasting stations are traditionally important for animation production because they provide financial support and hold decision-making authority for scheduling broadcasting. Game software companies such as Capcom, Konami, and Square Enix are involved at the early stage of the creative process and share content to develop video game titles. Toy companies have been major consumers of animation because they manufacture collectibles and memorabilia based on characters and objects from famous animation series. At the same time, they support animation while jointly promoting their products with animation. Music companies have a big stake in animation because songs included in the productions often become important means of promotion. Many famous Japanese musicians play on songs for animations. For example, opening or closing themes of popular animations often become hits and rank highly on the Oricon Chart, a Japanese equivalent of the U.S.'s Billboard 100.

The role of production crews such as directors, storywriters, animators, and music artists is significant because these people make non-negligible contributions to creative aspects of animation production. Although their contributions are clearly recognized and included in credits, no reliable data about the accurate number of freelancers or contractors has been compiled. Even a government research report states that statistics about animation specialists, entrepreneurs involved with animation, and employers are unclear. An industry expert mentioned

that most production studios are small, hiring around 30 to 50 people. Tracing the exact number of people working in this industry is even more problematic because labor relations are often unstable.

***Contributors to Production Committees***

Similar to film production, animation production is a highly labor-intensive process, with people providing the most important input. Similar to other project-based work, individual talents are valued as much as teamwork. In identifying and deploying individual talents, directors always reside at the heart of animation production. An equally important skill required for a director is the ability to coordinate individual talents to create synergy. A director participating on a production committee to make animation using less-tried genres or genres with experimentation will be more likely to incorporate certain aspects of the animation he made with the production committee into his subsequent involvement with the production of other animations. Furthermore, considering the fact that directors can move freely across different animation projects, it is probable that they can transfer what they have learned from production committees to their future studio contracting projects, providing valuable knowledge to studios that have no production committee experience.

Similarly, if existing studios participate in a production committee, they are more likely to have the opportunity to learn new skills and acquaint themselves with new genres. These studios will be likely to try what they learn from

production committees in their subsequent animation projects. Empirically, if we observe changes in genres made by key production people and production studios after they participated in a production committee, controlling for other possible causes for changes in genres, we can safely conclude that the production committee provided a learning opportunity and facilitated diffusion of knowledge in the Japanese animation industry. Furthermore, it is equally probable that production studios could try entirely new genres or a combination of genres after participating in production committees.

***Production Process***

A typical process of animation production and distribution starts with planning that involves companies such as animation studios, TV stations, distributors, publishing companies, game software companies, toy companies, advertisement agencies, music companies, etc. The second stage is the actual production phase, which is highly labor- intensive. This stage is also entrepreneurial in that animation production requires extensive use of creative talents from production crews. Different phases of actual animation production require different amounts of creativity. Production crews who are responsible for creating story, character, environment, and robot are usually considered the core and other production crews who are working on digital painting, in-between animation, and finishing animation are considered the periphery and repetitive.

After production, animation is circulated in different distribution channels of domestic and foreign markets — theaters, TV broadcasting, and DVD sales. Pre-production is rare in TV animation and each episode is made available right before broadcasting. If viewers respond well to a series early on, DVD compilations become available for purchase. When the series is a success, full DVD compilation packages are distributed. After the broadcasting and DVD circulation, certain animation series are distributed to international markets. Besides broadcasting, DVD sales, and sales to international markets, other activities either capitalize on the broadcasting of an animation series or boost its viewership. Either simultaneously or sequentially with the broadcasting of a series, a merchandizing campaign ensues that entails various licensing contracts to toys, food products, stationary, and events, all of which involve 1,200 companies annually. As seen in *Real Drive* (2008) and many other TV animation series promotion activities using mobile phones have recently become popular.

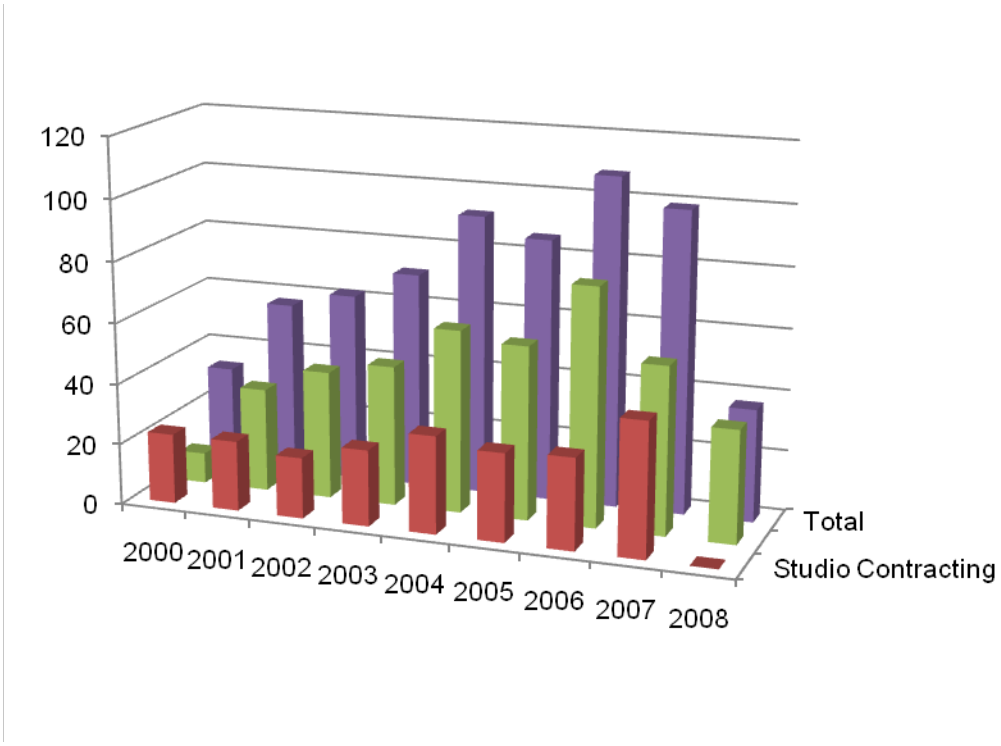
***Production Format***

With some variations, broadly speaking, TV animation uses two types of production formats — studio contracting and production committee. Distributors decide which production format will be used. For feature-length animated films, entertainment tycoons such as Toho, Toei, and Shochiku decide the production format. For TV animation, broadcasting companies such as TV Tokyo, TV Asahi, and Nippon TV Network make the decision. In studio contracting, distributors or

TV stations choose a studio as a major producer and the studio becomes responsible for the production of an entire animation series. With full control mandated by distributors or TV stations, the studio selects a group of sub-contracting production houses. In this system, production is carried out on a fee base. Because TV stations and distributors contribute most of the financial resources to the production, they own the copyrights, without giving production studios any possibility of sharing profits if an animation series generates additional profit from either licensing agreements or overseas exports.

The production committee (seisaku iinkai) is a relatively new production format that Toho, distributor and producer of feature length animated films, claimed to have innovated in the early 1980s for feature length films. In 1983, *Antarctica* (*Nankyoku Monogatari*), one of the first production committee-based feature animated films by Toho, was released. *Tahio Schichauzo* (1996) was the first TV animation made by production committee. In this format, careful planning precedes the production, which includes detailed conditions about responsibilities, risk taking, and profit sharing for contributing partners. A production committee can be less financially dependent on TV stations, since members of the committee contribute both financial resources and creative skills required for production. Such independence from the conventional financiers has given more power to those parties who are directly responsible for animation production. It can be highly entrepreneurial, as an industry expert stated in an interview, "both production companies and key production crews can make important decisions about the

overall flow of animation during the production process as they use more decision power in scripting, storyboarding, and creating characters." The production committee also uses studios with special skills such as only designing characters, robots, or environments. The same expert commented, "[A] majority of Japanese animation studios are incredibly small and with no resources to market and distribute their own titles." This implies that a production committee can offer valuable opportunities for small studios to move away from their narrowly defined skill domains. Figure 5 shows the yearly production of Japanese TV animation by format.




*2008 April

Figure 5: Yearly Production of Japanese TV Animation by Format

***Production Budget and Financing Issues***

Production budgets vary depending on animation format. The most expensive feature animation film was *Steamboy* (2004) by Sunrise, which cost US$ 26 million and used 180,000 cuts of hand-drawn scenes and 440 computer graphic (CG) cuts. Production costs for each episode of a TV animation series also varies. The highest was *Ghost in the Shell: Stand Alone Complex* (TV) by Production I.G., which cost 30 million yen ( US$ 300,000) per episode. But an episode of a typical TV animation series costs on average 10 million yen ( US$ 100,000). Financing issues become less critical in feature animated films, but TV animation suffers most, as nearly all 430 production houses are producing animation for TV stations.

Traditionally, the content business is risky and it is difficult to offer guarantees for superior financial returns. Due to this uncertainty, securing a stable source of financial support is rare, especially for TV animation. This also makes high rates of production cost cutbacks almost a convention. Production studios making animation for TV stations experience losses during production, but seek opportunities to make up for them through licensing their content to DVDs, videos, and merchandising. Typically, TV stations do not pay the full production costs of animation, knowing that studios will later find ways to recoup their losses. Because TV stations are reluctant to cover the full production costs, the average wage in the animation industry is low. Low wages lead to a drain of talent to other but related industries such as video game production where similar creative skills

are valued. Also, outsourcing to production houses in China, South Korea, Vietnam and elsewhere has become popular, as Toei has moved to the Philippines and Studio Ghibli to Korea.

***Career Movement of Animation Directors***

Animation production is a collaborative process that requires contributions from people with artistic skills and creative minds. Key people include directors, animators (2D and 3D), character designers, mecha (robot) designers, script writers, storyboard writers, music and sound artists, and voice actors. This study focused on directors. Directors are important not only because they make critical decisions in animation production but also because many members of key production crews eventually become or are eager to become directors. A careful examination of any director's career path would reveal that he did not start his career as a director. Director's typically enter the industry as animators, storyboard writers, scriptwriters, etc., and then they become involved in the process where important decisions about animation production are made. For example, Ando Masahiro recalled that he started his career as an entry level animator. Before he took his first stand-alone directorial role in the movie *Sword of the Stranger* (2007), he had worked as key animator, illustration artist, storyboard writer, and episode director in dozens of other animations. He even created music for *Hakugei: Legend of the Moby Dick* (1997).

Compared with the Hollywood film industry, directorial status in Japanese animation is generally not considered permanent. For example, former directors are frequently involved in other animation projects as key animators, storyboard writers, scriptwriters, or episode directors. Taking on different responsibilities often helps directors learn skills and know-how needed to make animation of different genres and themes. In the same interview, Ando Masahiro commented that having gone through different roles had made him experience different production processes and equipped him with essential skills.

***Role of Technology in Japanese Animation Production***

Technology used in animation production can be either 2D or 3D. Although 3D techniques are frequently and extensively used in all three formats of animation, full-3D animation is limited to a handful of recent feature-length films such as *Final Fantasy: Advent Children* (2005), *Appleseed Ex Machina* (2007), and *Vexile* (2007). Unlike U.S. made animation, Japanese animation still places huge emphasis on 2D animation. Full length 3D animation for TV shows is rare and 3D techniques are used for special effects purposes. Currently, 2D animation is the dominant technology, particularly in OVA and TV animation series. Ando Masahiro, director of *Sword of Stranger* (2007) said that 2D is still the best medium to convey the details and richness of Japanese animation. Recently, Miyazaki Hayao asserted the same belief in an interview about the making of *Ponyo on the*

*Cliff by the Sea* (2008), saying that 2D animation is best for reflecting the subtleties that Japanese animation can offer.

Even with this proclaimed worship of 2D over 3D, Japanese animation studios are constantly developing and improving their 3D techniques. Rendering in 3D is much more costly and complicated, especially for character creation. However, 3D techniques have been continuously used to create environments and add special effects that dramatically increase the realistic visual presentation. As shown in *Ghost in the Shell: Stand Alone Complex* (2002-2003), *Macros Frontier* (2008), and many other recently created TV animation series, animation studios have sought new techniques to seamlessly integrate 3D with 2D. Moreover, recent animation series made through production committees have experimented with fusing 2D characters with environments created through 3D techniques. Lastly, 3D animation has established a firmer ground in some genres than in others. For example, 3D techniques have been used extensively in robot animations such as in Reideen (2007), *Gundam OO* (2008 & 2009), *Kurogane no Linebarrels* (2008), and *Basukasshu* (2009).

***Scheduling of TV Animation and Demography of Viewers***

Each episode of Japanese TV animation is 25 minutes long, and each series lasts 13 weeks or roughly three months. The majority of TV animation series are scheduled for one or two seasons (26 weeks or six months). Animation series such as *Full Metal Alchemist*, Symphonic *Poem: Eureka Seven*, and *Blood+* lasted more

than two seasons and were aired for 52 weeks. Some animation series also enjoy unusually long lives yet still command high viewership. *Sazae-san*, *Detective Conan, Bleach, Naruto*, and *One Piece* are examples. These shows are still aired, occupying prime evening time.

Traditionally, the majority of viewers for TV animation were children and most animation series were scheduled during either the morning or afternoon periods. Recently, expanding animation scheduling to the late night period has increased with the growing demand for animation with themes appealing to young adults. In 2000, for example, eight late night shows per week were aired after midnight. This number had increased to 31 in 2008. While the number of animation series scheduled for conventional broadcasting times has remained unchanged, late night scheduling of animation series is an emerging trend.

This trend in broadcasting time has brought some notable changes to TV animation production. First, opening up late night slots for TV animation has increased the overall number of animation shows produced. Late night broadcasting is often used for airing programs that have already aired but TV stations have started to use these broadcasting slots for new animation shows. Due to this increased demand for new animation series, specifically for late night shows, production studios have more projects to work on. Second, in terms of what content can be packed into these shows, late night scheduling of animation series allows more production freedom. Animation shows targeted to children require excluding certain genres and themes that are geared towards adults. For example,

sexually explicit content and extreme violence are not allowed in children's animation. However, animation for late night shows can pursue more diversity in genres and themes. Well-known animation series such as *Hellsing* (2002), *Ghost in the Shell: Stand-Alone Complex* (2004), *Count of Monte Cristo* (2005), *Claymore* (2007), and *Darker Than Black* (2007) were aired between midnight and 4:30 a.m. Increased demand for animation and diverse genres and themes for older viewers gave studios and independent production people opportunities to collaborate and made it necessary for a production committee to emerge as a viable alternative to conventional animation production.

***Original Animation versus Non-Original Animation***

Animation can be classified into two broad categories depending on where the content or original story comes from. If the characters in the animation and story line are created without relying on existing content, such animation is called original animation. Animation can also be made based on existing content. One source of content is comics (*manga*). The Japanese *manga* industry is different but closely related to the animation industry and these two industries share common ground as a dominant entertainment culture in Japan. In practice, both animation and *manga* entertain viewers with stories about characters and require similar production skills such as creating characters, environments, and story lines. Because the *manga* industry provides ample original content to the animation industry, many animation series, particularly TV animation series, borrow *manga*

content and reproduce it for TV animation. Novels are another source of content. Although used less frequently than *manga*-based animation series, novels have been an important supplier of content to the animation industry. Classics represent still another content source. For example, *Romance of Three Kingdoms* (2007, 2009, & 2010), *Romeo and Juliet* (2007), and *the Count of Monte Cristo* (2004), are frequently reproduced as animation series with different interpretations.

Different content sources pose different creative challenges. Original animation is by far the most demanding because the two most important components of animation namely, characters and story lines, have to be created from scratch. Novel and classics-based animation are the second most demanding in terms of creative challenges. Both use existing story lines and emphasis is often placed on character development. Because critical components of *manga*-based animation production are readily available, this type of animation poses few creative challenges. In fact, to some extent, transforming *manga* into animation is similar to porting video games from one platform to another.

Still another way to think about creative challenges to producing animation is to consider whether a particular animation series is from an established franchise or whether it has prequels in related animation formats such as Original Animation Videos (OAV), feature length animated film, or previously released TV animation. Making a sequel or an adaptation of existing animation has the following benefits. First, existing characters from previous animations can be readily used. Viewers tend to accept these characters as familiar. Often times, creating characters

involves additional story telling that may deviate from the main story line. Additional story telling eases the liability of newness or unfamiliarity with characters for viewers and viewers start to sympathize with characters when given personal anecdotes about them. However, in sequel animation, viewers already know the characters. Second, familiar contexts and environments can be readily redeployed. This also includes the people dynamics among characters. When a story unfolds in a familiar setting, it makes explaining the context less imperative. Lastly, availability of characters and contexts make the main story as the primary interest of both the people producing the animation and the people watching the animation. For example, *Burning-eyed Shana Second* (2007) is based on a successful prequel *Burning-eyed Shana* (2005), using the same characters and contextual setting but delivering a different story.

The amount of creativity required to produce animation can be associated with the learning potential that each project can offer to participating studios and production crews. Given the fact that making original content is more creatively demanding and that the absence of pre-existing animation means creating everything from scratch, studios will more likely be drawn to the production committee system since it facilitates the pooling of talents required for highly creative collaboration.

***Genre-wise Characteristics***

Genres and themes are categories in which creativity takes certain forms, and are also vessels in which characters develop and stories unfold, so choosing genres and themes are important decisions in animation production. In this regard, genres and themes are both the enabling and limiting factors in animation production. Understanding and producing a particular genre takes time and requires resources, making specialization important among animation studios. Usually, animation studios have a fairly accurate understanding of the viewers' expectations for particular genres, so they nurture the skills necessary to meet the expectations. It is natural to say that animation studios choose to specialize in particular genres and themes. This specialization is good because it makes the studios responsible for what they do. But this specialization may work against them, too. If an animation studio tries to focus on a single genre, it will soon run out of story to tell and this will come back as criticism for lack of originality. Ando Masahiro, director of *Sword of a Stranger* (2007) said in an interview at the 2008 AnimeExpo held in Los Angeles: "If you do the same thing over and over, you soon exhaust your creativity and have nothing to make. You don't have creative power to make something original. And this is why I wanted to try new genres, even if learning new genres may not turn out to be immediately beneficial to the projects at hand."

At the industry level, animation companies are known for what they are good at. At the same time, they know their weaknesses and are forced to respond

to viewers' constant demand for something new and creative. They also know that they must find ways to add new things to their portfolio and that a single company cannot do this. In addition, animation companies must deliver multi-genre/themed animation to meet diverse viewer groups' needs, but mixing genres and themes is extremely tricky because some are difficult to combine. For example, action, adventure, drama, and comedy are genres that have become universal ingredients for most animation and they blend well with other genres. In contrast, the horror and sports genres are difficult to mix because they require special settings and story lines that are often incompatible with other genres. Figure 6 shows the genre composition of Japanese TV animation.

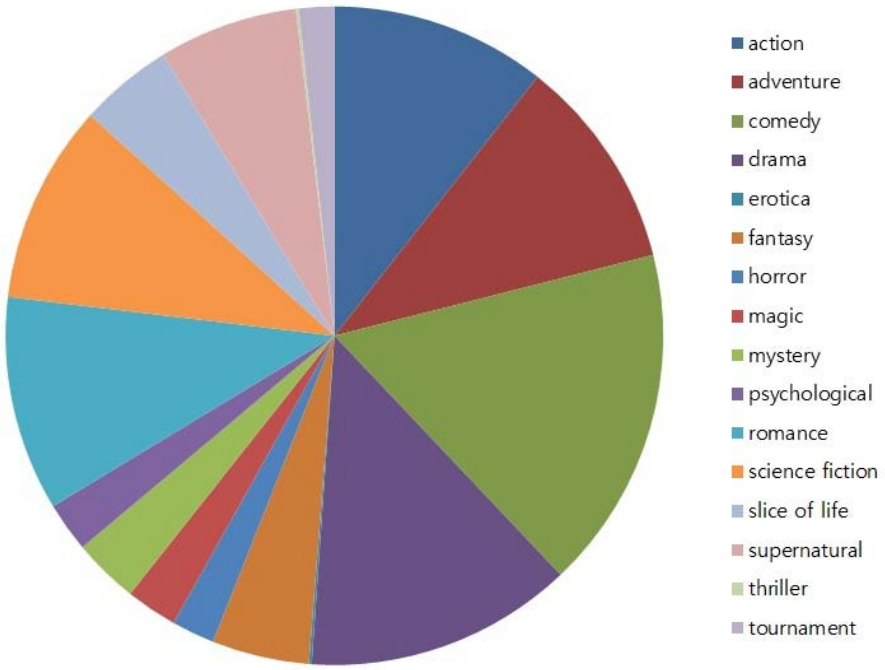



Figure 6: Genre Composition of Japanese TV Animation

***Criticism of Lack of Creativity***

Besides the exodus of people to related industries, the overall quality of TV animation series is often criticized as repackaging something old into something new or even reproducing knock-offs. When he won the Golden Bear award at the Berlin film festival in 2002, Miyazaki Hayao, director of *Spirited Away* (2001) voiced his worry about the future of Japanese animation, saying that Japanese animation is facing a dead end (Bynum, 2008). Recently, Murata Koichi, the president of animation production group Oh warned, "Unless something is done, Japanese animation will be ruined" (Takano & Inada, 2004).

For example, "boy-got-a-robot" is one of Japanese animation's dominant themes, featuring an ordinary boy stumbling upon a chance to become a pilot for a robot with unearthly powers (Patten, 2004). The boy sits at the center of all the adventures through which he confronts sinister enemies planning to destroy humanity and conquer the universe. Generally, the boy tends to accept his destiny as a savior of the world and courageously defends his fellow citizens from evil; he does not question why he was chosen to have such power. This noticeably big stream of robot genre animation began with *Gigantor* (1963). Many animation series have used the same theme, mustering a huge fandom of the so-called super robot genre, until viewers became less enthusiastic about the main character's heroic actions.

After almost 30 years, *Neon Genesis Evangelion* (1995), one same old robot animation, finally rejuvenated the robot animation genre (Clements &

McCarthy, 2006). This animation's biggest innovation was the personality of its main character, Ikari Shinji. Like other robot animations, Shinji was the only person who could control Evangelion, a giant mecha. However, he was not the ordinary pilot of the super robot genre because he was the least suitable or least deserving character to be given the burden of saving the human race. He was a typical 'yowamushi' (coward) and 'nakimushi' (crybaby). This huge misfit between a character who constantly questioned everything and a giant robot that was supposed to save the world gave viewers an extremely uncomfortable experience, adding a new interpretation to the robot genre.

***Labor Issues***

Labor conditions that force production crews to endure long hours, extremely low wages without any other benefits, and uncertain career prospects are another big challenge facing the Japanese animation industry. In 2007, the Japan Animation Creators Association (JAniCA), the first labor union for animators, was established to improve working conditions at animation studios. It consists of 477 members and a steering committee of 15 people, including Ashida Toyoo, director of *Vampire Hunter D* and *Fist of the North Star*; Kon Satoshi, director of *Paprika*, and Kyoda Tomoki, director of *Symphonic Poem: Eureka 7*.

## Theory Testing

The results of statistical analyses are reported in this section. Table 8 summarizes the findings of all statistical analyses performed in the study. Because the statistical analyses of this study consist of two separate but related analyses, results are reported separately, followed by a summary of findings.

Table 8: Summary of Statistical Analysis Results

| | Summary of Hypothesis | Result |
|---|---|---|
| **Analysis 1** | **Formation of Short-term Project Organizations** | |
| Hypothesis 1 | Novelty of entrepreneurship project positively influences the formation of short-term project organization. | Supported |
| Hypothesis 2 | External resource availability positively influences the formation of short-term project organization. | Supported |
| Hypothesis 3 | Internal resource constraints positively influence the formation of short-term project organization. | Supported |
| Supplementary 1 | | |
| Hypothesis 2a | External resource availability has an inverse U-shaped relationship with the formation of short-term project organization. | Supported |
| Hypothesis 3a | Internal resource constraints have an inverse U-shaped relationship with the formation of short-term project organization. | Supported |
| Hypothesis 4 | Mobility of human resource to previous short-term project organizations positively influences on the focal firm's acquisition of new capabilities. | Supported |

Table 8 (continued)

| | Summary of Hypothesis | Result |
|---|---|---|
| **Analysis 2** | **Acquisition of New Capabilities** | |
| Hypothesis 5 | A firm's previous experience in short-term project organizations positively influences on the focal firm's acquisition of new capabilities. | Not Supported |
| Hypothesis 6 | Previous experience of human resource in acquiring new capabilities positively influences the focal firm's acquisition of new capabilities. | Supported |
| Hypothesis 7 | Previous experience of a firm in acquiring new capabilities positively influences the focal firm's acquisition of new capabilities. | Supported |
| Hypothesis 8 | Interaction between mobility of human resource to previous short-term project organizations and a firm's previous experience with short-term project organizations positively influences the focal firm's acquisition of new capabilities. | Supported |
| Hypothesis 9 | Interaction between experience of human resource and a firm in previous acquisition of new capabilities positively influences the focal firm's acquisition of new capabilities. | Supported |

**Analysis 1 — Formation of Short-term Project Organizations**

The data collection endeavor described in the Methods section yielded 6,478 unique animations in five different formats released between October 20, 1963 and April 30, 2008. Among the 6,478 animations, this study sampled 645 unique TV animation series produced by 83 unique studios and 288 unique directors between January 1, 200 and April 30, 2008.

Table 9: Descriptive Statistics and Bivariate Correlation Matrix for Analysis 1

| | Variable | Mean | S.D. | Lowest | Highest |
|---|---|---|---|---|---|
| (1) | Short-term project organization | .6496 | .4774 | 0 | 1 |
| (2) | Studio non-committee experience | 103.3984 | 114.9458 | 0 | 529 |
| (3) | Studio committee experience | 9.3705 | 10.7357 | 0 | 79 |
| (4) | Studio average performance | 6.8273 | .7579 | 0 | 8.8739 |
| (5) | Studio yearly output | 8.0542 | 6.2515 | 0 | 32 |
| (6) | Studio reputation | 79238.96 | 66254.07 | 0 | 249089 |
| (7) | Studio genre concentration | .14334 | .0618 | 0 | 1 |
| (8) | Studio export experience | 81.3333 | 74.5210 | 0 | 293 |
| (9) | Studio founding year | 1988.217 | 12.3969 | 1946 | 2005 |
| (10) | Other Committee | 167.0868 | 112.5702 | 1 | 408 |
| (11) | Other Committee performance | 6.6193 | .7966 | 0 | 8.3243 |
| (12) | GDP | 4390000000000 | 249000000000 | 3920000000000 | 4910000000000 |
| (13) | Year | 2004.386 | 2.2515 | 2000 | 2008 |
| (14) | Novelty of project | 3.1891 | .68357 | 1 | 4 |
| (15) | External resource availability | 277.6233 | 7.6879 | 256 | 288 |
| (16) | Internal resource constraints | 2 | 2.1022 | 0 | 15 |

Table 9 (continued).

| **Bivariate Correlation Matrix** | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) |
| (2) | .0052 | | | | | | | | | | | | | | |
| (3) | .2144 | .1338 | | | | | | | | | | | | | |
| (4) | .1540 | .0228 | .1874 | | | | | | | | | | | | |
| (5) | .1187 | .5863 | .5299 | .1586 | | | | | | | | | | | |
| (6) | .1566 | .7269 | .5901 | .1521 | .8211 | | | | | | | | | | |
| (7) | -.005 | -.088 | -.2058 | -.115 | -.148 | -.168 | | | | | | | | | |
| (8) | .0598 | .9633 | .3100 | .0548 | .7004 | .8600 | -.134 | | | | | | | | |
| (9) | .1073 | -.677 | .0693 | -.087 | -.209 | -.303 | .1086 | -.592 | | | | | | | |
| (10) | .1076 | -.007 | .5829 | .1923 | .0523 | .2093 | -.135 | .0599 | .0517 | | | | | | |
| (11) | .2307 | .0247 | .5932 | .1657 | .2936 | .3392 | -.124 | .1336 | .0968 | .5475 | | | | | |
| (12) | .0495 | -.0187 | .2751 | .0488 | -.040 | .0886 | -.049 | .0074 | .0371 | .4602 | .1562 | | | | |
| (13) | .1332 | .0071 | .6031 | .1928 | .0850 | .2490 | -.130 | .0850 | .0593 | .9687 | .6360 | .4594 | | | |
| (14) | .3794 | -.0417 | .0799 | -.036 | -.022 | .0050 | .0174 | -.027 | .0953 | .1448 | .097 | .0162 | .1422 | | |
| (15) | .0105 | -.0157 | -.4984 | -.172 | -.077 | -.197 | .1277 | -.073 | -.032 | -.844 | -.504 | -.2680 | -.843 | -.1395 | |
| (16) | .2212 | .3394 | .4573 | .1318 | .6125 | .5722 | -.145 | .4439 | -.150 | .099 | .3868 | -.0543 | .1644 | -.0097 | -.1675 |

***Descriptive Statistics and Bivariate Correlations***

Descriptive statistics and a bivariate correlation matrix for all study variables included in Analysis 1 are shown in Table 9 above. Most of the bivariate correlation coefficients among the study variables are in the moderate range (< 0.5). Some correlations between one of independent variables and the control variables are high. Correlation between external resource availability and studio committee experience is high (> 0.8). This may indirectly show that an increase in popularity of production committees as a production format attracts more directors to production committees, leaving more directors with previous committee experience available at a given point of time. Another high negative correlation comes between external resource availability and studio yearly output (> 0.8). This means that the more studios are producing animations regardless of production formats, the more they need to invite directors from outside, making directors with previous production committee experience an even scarcer resource.

A few cases of high correlation exist among control variables. First, correlation between studio reputation and studio non-committee experience is high (> 0.7). Although not as high as this, correlation between studio reputation and studio committee experience is moderately high (> 0.5). These two correlations show that studios with high productivity are more likely to be recognized by viewers. Second, correlation between studio reputation and studio yearly output is also high (> 0.8). It is also plausible that studios with high yearly output can increase public recognition. Third, correlations between studio export experience

and variables such as studio non-committee experience and studio reputation are very high (> 0.8).

Even with some cases of relatively high correlation, no high correlation among independent variables exists. Thus, the above-reported cases may not be a serious concern for estimating an unbiased model. To directly investigate the issue of multi-colinearity, variance inflation factors (VIFs) were calculated. With all the variables included, overall VIFs were higher than 10. Convention suggests that a VIF higher than 10 means high multi-colinearity. Calculation of VIFs revealed that 'Studio Export Experience', 'Year', and 'Studio Reputation', were among the highest. Menard (2002) suggested that dropping variables with high variables with high VIFs could reduce multi-colinearity. Following Menard's suggestions, separate models were estimated after dropping these variables and the results were compared across models. Cohen and Cohen (1983) suggested that moderate levels of multi-colinearity among study variables could inflate standard errors and produce less efficient parameter estimates, but would not result in biases in the parameter estimation. Thus, models were estimated with all the study variables.

***Baseline Model Estimation***

A baseline model for Analysis 1 was constructed with three sets of variables: 1) Studio-related Variables; 2) Other Committee-related Variables; and 3) Macro-economy-related Variables. Following convention, constructing a baseline model begins with any one set of control variables. Each set of control

variables is added to the previous model until all control variables are exhausted. Thereafter, a likelihood test is used to examine the improvement of overall model fit. Using such hierarchical steps to construct a model is a well-accepted analytical approach. However, hierarchical model construction must be used when such an action can be theoretically justified. For example, if theory predicts an emergence of a more efficient path to reach a certain state of model over other possible paths, constructing an incremental model should be legitimate. Because this study was not concerned with a path analysis for constructing a model, three sets of control variables were included together to form a baseline model. Table 10 shows the results of the baseline model estimation. While not directly relevant, Pseudo R-squared of Model 1 showed that 8.2 percent of the variance was explained by the control variables. Pseudo R-squared was calculated using the following equation (Aldrich & Nelson, 1984):

$$\text{Pseudo R2} = \frac{(e(ll_0) - e(ll))}{e(ll_0)}$$

where $e(ll_0)$ is the log likelihood of the constant only model and $e(ll)$ is the log likelihood of the current model.

Among studio related control variables, studio committee experience was marginally significant. This implied that studios' previous participation in production committees had a positive effect on the formation of production committees for the focal TV animation. This result was consistent with organizational learning theories. Moreover, it confirmed that studios that had

previously formed production committees were more likely to form another production committee, showing a positive influence of previous experience on maintaining the same behavioral choice in the future. 'Studio Average Performance' had a positive effect on the formation of short-term projects. As predicted, studios with superior performance were more likely to form production committees. Lastly, 'Studio Founding Year', the year when a studio was established, was a positive influence on the formation of production committees. A bigger value meant that a studio was founded more recently. This meant that younger studios were more likely to form production studios.

Studio-related controls such as 'Studio Non-committee Experience', 'Studio Yearly Output', 'Studio Reputation', 'Studio Genre Concentration', and 'Studio Export Experience', were not statistically significant.

Among the other committee-related variables, only 'Other Committee Average Performance' had a positive effect on the formation of production committees for the focal TV animation. However, 'Other Committee' that measures the number of committees prior to the release of the focal TV animation was not significant. These results suggested that how well other committees performed was a more important indicator for deciding to make a particular animation through production committee rather than the number of other committees that existed. Two macro-economy related control variables were not significant.

Table 10: Analysis 1: Baseline Model

| | Model 1 | | |
|---|---|---|---|
| **Variables** | **Coefficient** | | **S.E.** |
| Intercept | -.00251 | | 372.1311 |
| Studio related Controls | | | |
| Studio Non-Committee Experience | -.00251 | | .004722 |
| Studio Committee Experience | .03191 | † | .01818 |
| Studio Average Performance | .55178 | ** | .2094 |
| Studio Yearly Output | -.04621 | | .02831 |
| Studio Reputation | 0.0001 | | 0.0004 |
| Studio Genre Concentration | 2.2775 | | 1.7873 |
| Studio Export Experience | .00852 | | .0093 |
| Studio Founding Year | .02461 | ** | .0094 |
| Other Committee Related Controls | | | |
| Other Committees | -.0024 | | .0034 |
| Other Committee Average Performance | .5020 | * | .1960 |
| Macro-Economy Related Controls | | | |
| GDP | 0.0001 | | 0.0004 |
| Year | -.00950 | | .1862 |
| Pseudo R-Squared | 0.082 | | |
| Log Likelihood | 68.53 | | |

Significance: † (< .1), * (< .05), * (< .01), & *** (< .001)

***Main Analysis***

Table 11 reports the addition of three independent variables to the baseline model. Three variables included were: 1) Novelty of Entrepreneurship Project; 2) External Availability of Resources; and 3) Internal Constraints of Resources. Novelty of Entrepreneurship Project, measured by whether the focal animation used original content, was positive and statistically significant. This suggested that TV animation which did not rely on existing content was more likely to be produced through production committee. External Resource Availability had a

positive effect on the formation of production committees for the focal TV animation.

Table 11: Analysis 1: Main Model

| | Model 1 | | | Model 2 | | |
|---|---|---|---|---|---|---|
| **Variables** | **Coeff.** | | **S.E.** | **Coeff.** | | **S.E.** |
| Intercept | -.00251 | | 372.1311 | -539.923 | | 444.555 |
| Studio related Controls | | | | | | |
| Studio Non-Committee Experience | -.00251 | | .004722 | -.0012 | | .0056 |
| Studio Committee Experience | .03191 | † | .01818 | .0426 | † | .02180 |
| Studio Average Performance | .55178 | ** | .2094 | .6715 | ** | .2075 |
| Studio Yearly Output | -.04621 | | .02831 | -.0809 | * | .0353 |
| Studio Reputation | 0.0001 | | 0.0004 | -.0004 | | .0005 |
| Studio Genre Concentration | 2.2775 | | 1.7873 | 2.2402 | | 2.3765 |
| Studio Export Experience | .00852 | | .0093 | .0095 | | .0111 |
| Studio Founding Year | .02461 | ** | .0094 | .02852 | * | .01128 |
| Other Committee Related Controls | | | | | | |
| Other Committees | -.0024 | | .0034 | .0053 | | .0043 |
| Other Committee Average Performance | .5020 | * | .1960 | .4410 | * | .2185 |
| Macro-Economy Related Controls | | | | | | |
| GDP | 0.0001 | | 0.0004 | 0.0002 | | 0.0004 |
| Year | -.00950 | | .1862 | .2082 | | .2217 |
| Novelty of Entrepreneurship Project | | | | 2.8039 | *** | .3001 |
| External Resource Availability | | | | .1999 | *** | .0318 |
| Internal Resource Constraints | | | | .4215 | *** | .0844 |
| Pseudo R-Squared | 0.0820 | | | 0.3130 | | |
| Log Likelihood | 68.53 | | | 193.02 | | |
| AIC | 790.9875 | | | 603.9697 | | |
| BIC | 844.6185 | | | 671.0084 | | |

Significance: † (< .1), * (< .05), * (< .01), & *** (< .001)

This table shows that increases in the number of directors who were previously involved in production committees had a positive influence on the chances of a TV

animation being made through a production committee. Lastly, the coefficient of 'Internal Resource Constraints' was also positive and statistically significant. High value in this variable meant that a studio was running more animation projects simultaneously and thus faced bigger constraints when it launched the focal TV animation. Thus, all three hypotheses were supported. Collectively, these three independent variables increased Pseudo R-squared from 0.082 to 0.313. This showed that main research variables explained approximately 23 percent more variance. Results for the log likelihood test confirmed that overall model fit increased significantly.

Additionally, among control variables, 'Studio Committee Experience', 'Studio Average Performance', 'Studio Founding Year', and 'Other Committees' remained consistent with the results from the baseline model. However, the coefficient of 'Studio Yearly Output' was not significant in the baseline model but became negatively significant in the main model. This suggested that with the addition of three theory variables, a TV animation by a studio that worked many projects during the previous year was less likely to be committee-based production. This could be explained with insights from the qualitative study. If a studio was involved in many projects in year t-1, the studio tended to have many projects that rolled over to year t. With many projects at hand, the studio would not have enough resources to start additional projects, which would reduce the chances of forming a production committee for the focal TV animation.

Table 12 reports the results of using an alternative measure for Novelty of Entrepreneurship. The results from the model using an ordinal measure (1 = low novelty, 4 = high novelty) for Novelty of Entrepreneurship Project were consistent with those from the model using a dichotomous measure of 'Novelty.

Table 12: Analysis 1: Main Model with Alternative Novelty Measure

| | Model 1 | | | Model 2 | | |
|---|---|---|---|---|---|---|
| **Variables** | **Coeff.** | | **S.E.** | **Coeff.** | | **S.E.** |
| Intercept | -.00251 | | 372.1311 | -402.649 | | 444.857 |
| Studio related Controls | | | | | | |
| Studio Non-Committee Experience | -.00251 | | .004722 | -.0001 | | .0055 |
| Studio Committee Experience | .03191 | † | .01818 | .03244 | | .02120 |
| Studio Average Performance | .55178 | ** | .2094 | .6659 | ** | .2170 |
| Studio Yearly Output | -.04621 | | .02831 | -.0813 | * | .0352 |
| Studio Reputation | 0.0001 | | 0.0004 | 0.0003 | | 0.0054 |
| Studio Genre Concentration | 2.2775 | | 1.7873 | 1.6840 | | 2.2104 |
| Studio Export Experience | .00852 | | .0093 | .00442 | | .0109 |
| Studio Founding Year | .02461 | ** | .0094 | .02829 | ** | .0108 |
| Other Committee Related Controls | | | | | | |
| Other Committees | -.0024 | | .0034 | .0054 | | .0042 |
| Other Committee Average Performance | .5020 | * | .1960 | .4086 | † | .2171 |
| Macro-Economy Related Controls | | | | | | |
| GDP | 0.0001 | | 0.0004 | 0.0004 | | 0.0048 |
| Year | -.00950 | | .1862 | .1382 | | .2219 |
| Novelty of Entrepreneurship Project | | | | 1.5820 | *** | .1692 |
| External Resource Availability | | | | .2016 | *** | .0308 |
| Internal Resource Constraints | | | | .4224 | *** | .08514 |
| Pseudo R-Squared | 0.0820 | | | 0.2855 | | |
| Log Likelihood | 68.53 | | | 238.54 | | |
| AIC | 790.9875 | | | 844.6185 | | |
| BIC | 626.9782 | | | 694.0169 | | |

Significance: † (< .1), * (< .05), * (< .01), & *** (< .001)

Table 13: Descriptive Statistics and Bivariate Correlation Matrix for Analysis 2.

| | Variable | Mean | S.D. | Lowest | Highest |
|---|---|---|---|---|---|
| (1) | Studio Non-Committee Experience | 103.3984 | 114.9458 | 0 | 529 |
| (2) | Studio Average Performance | 6.8273 | .7579 | 0 | 8.8739 |
| (3) | Studio Yearly Output | 8.0542 | 6.2515 | 0 | 32 |
| (4) | Studio Genre Concentration | .1433 | .0618 | 0 | 1 |
| (5) | Studio Founding Year | 1988.217 | 12.3969 | 1946 | 2005 |
| (6) | Director Mobility to Non-Committees | 9.5317 | 6.5392 | 0 | 45 |
| (7) | Director Average Performance | 6.8822 | 1.0166 | 0 | 8.3923 |
| (8) | Director Yearly Output | 1.6775 | .9215 | 0 | 6 |
| (9) | Director Genre Concentration | .1524 | .0434 | 0 | .5 |
| (10) | Studio-Director Tie Repeated Collaboration Experience in Committees | -.0837 | .5395 | 0 | 5 |
| (11) | Studio-Director Tie Repeated Collaboration Experience in Non-Committees | .2139 | .5175 | 0 | 4 |
| (12) | Year | 2004.386 | 2.2515 | 2000 | 2008 |
| (13) | Studio Committee Experience | 9.3705 | 10.7357 | 0 | 79 |
| (14) | Director Mobility to Committees | 2.2263 | 2.2735 | 0 | 13 |
| (15) | Studio New Genre Experience | 2.4759 | 3.9098 | 0 | 24 |
| (16) | Director New Genre Experience | 4.7038 | 2.04622 | 0 | 10 |

Table 13 (continued).

| **Bivariate Correlation Matrix** | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) |
| (2) | .022 | | | | | | | | | | | | | | |
| (3) | .586 | .158 | | | | | | | | | | | | | |
| (4) | -.088 | -.115 | -.148 | | | | | | | | | | | | |
| (5) | -.677 | -.086 | -.209 | .108 | | | | | | | | | | | |
| (6) | .028 | .001 | .090 | -.059 | .044 | | | | | | | | | | |
| (7) | .008 | .220 | .071 | -.234 | .007 | .111 | | | | | | | | | |
| (8) | -.094 | -.001 | .033 | -.050 | .091 | .294 | .091 | | | | | | | | |
| (9) | .001 | .063 | .046 | -.122 | -.068 | -.073 | .338 | -.038 | | | | | | | |
| (10) | -.033 | -.012 | .007 | .015 | -.010 | .028 | -.055 | -.032 | .004 | | | | | | |
| (11) | .127 | .065 | .117 | -.071 | -.036 | .168 | .043 | -.034 | -.045 | -.447 | | | | | |
| (12) | .007 | .192 | .085 | -.130 | .059 | .049 | .157 | -.051 | -.163 | -.028 | .202 | | | | |
| (13) | .133 | .187 | .529 | -.205 | .069 | .088 | .145 | -.028 | -.073 | -.007 | .147 | .603 | | | |
| (14) | -.078 | .125 | .036 | -.106 | .188 | .176 | .184 | .163 | -.210 | -.114 | .081 | .537 | .435 | | |
| (15) | .480 | .062 | .494 | -.043 | -.094 | .076 | .077 | -.006 | -.048 | -.085 | .173 | .297 | .459 | .207 | |
| (16) | -.046 | .083 | .034 | -.078 | .126 | .716 | .268 | .270 | -.239 | -.043 | .080 | .200 | .184 | .436 | .084 |

**Analysis 2 — Acquisition of New Capabilities**

In Analysis 2, hypotheses were tested using the same sample from Analysis 1.

***Descriptive Statistics and Bivariate Correlations***

Descriptive statistics and a bivariate correlation matrix for all study variables included in Analysis 1 are shown in Table 13 above. Most of the bivariate correlation coefficients among study variables were below the moderate range (< 0.5). With low overall correlations, multi-colinearity did not become a concern for this part of the analysis. This resulted in more efficient and unbiased parameter estimation (Cohen & Cohen, 1983).

Some correlations between independent variables and control variables were slightly high (< 0.61). Correlation between 'Studio Committee Experience' and 'Studio Yearly Output' was moderately high (= 0.529). This may indicate that studios with many animation projects also tended to work on more projects using production committees. Another moderately high correlation occurred between 'Studio Committee Experience' and 'Year' (= 0.603). This means that as a calendar year evolved, firms had more experience in production committees. This reflects the popularity of a production committee as a format for creating TV animation. Slightly low but also within moderate range of correlation occurred between 'Directors' Mobility to Production Committee' and 'Year' (= 0.537). This means that as time went by, directors gained more mobility. This also represents a

recent trend in the Japanese animation industry where recruiting outside talent has become an important part of flexible labor relations.

Among control variables, correlations were above 0.5 in only two cases. First, 'Studio Non-committee Experience' had a moderately high correlation with 'Studio Yearly Output' (= 0.586). This is understandable because studios that worked on many projects were more likely to produce animation using studio contracting. Second, 'Studio Non-committee Experience' and 'Studio Founding Year' had a negative correlation (= -0.677). This shows that studios that were founded more recently had less production experience with studio contracting. However, 'Studio Founding Year' was not significantly correlated with 'Studio Committee Experience'. Thus, a high correlation between 'Studio Non-committee Experience' and 'Studio Founding Year' may not be an indicator that younger studios prefer production committees to studio contracting. Results from computing the variance inflation factors (VIFs) showed that the value of VIFs among variables entered in Analysis 2 remained at a low level (< 5). This confirms that no bias was introduced by multi-colinearity (Menard, 2002).

***Baseline Model Estimation***

The baseline model for Analysis 2 was constructed with three sets of variables: 1) Studio Level Controls; 2) Director Level Controls; and 3) Repeated Collaboration Level Controls. To control for the influence from unobserved trends and changes in the environment, calendar year was included. Using the same logic

discussed in the previous section, the baseline model was formulated by considering all the control variables together. Pseudo R-squared was also reported.[8] Table 14 shows the results of baseline model estimation.

Table 14: Analysis 2: Baseline Model

| | Model 1 | | |
|---|---|---|---|
| **Variables** | **Coefficient** | | **S.E.** |
| Intercept | -724.5027 | *** | 101.6905 |
| Studio related Controls | | | |
| Studio Non-Committee Experience | .0007 | | .0015 |
| Studio Average Performance | -.3863 | ** | .1520 |
| Studio Yearly Output | .0899 | *** | .0209 |
| Studio Genre Concentration | -2.3421 | | 2.1763 |
| Studio Founding Year | .0347 | ** | .0111 |
| Director related Controls | | | |
| Director Mobility to Non-Committee | .0176 | | .0154 |
| Director Average Performance | .5309 | ** | .1617 |
| Director Yearly Output | .0293 | | .1049 |
| Director Genre Concentration | -12.9979 | *** | 3.5928 |
| Repeated Collaboration related Control | | | |
| Studio-Director Tie Collaboration in Production Committee | .7536 | ** | .0497 |
| Studio-Director Tie Collaboration in Non-Committee | .3681 | | .2582 |
| Macro-Environment Related Control | | | |
| Year | .3269 | *** | .0497 |
| Pseudo R-Squared | 0.2054 | | |
| Log Likelihood | -338.04436 | | |

Significance: † (< .1), * (< .05), * (< .01), & *** (< .001)

[8] After running random effects logistic regressions, STATA does not properly return log likelihood of constant only model.

Among studio level control variables, three variables were statistically significant. The coefficient of 'Studio Average Performance' was negatively significant ($p < 0.01$), meaning that studios with poor performance were more active learners. This result is consistent with organizational learning theory because poor performance as a gap between aspiration level and realized performance motivates firms to search for new solutions and therefore triggers behavioral change (Greve, 1998, 2003). The coefficient of 'Studio Yearly Output' was significant ($p < 0.001$) and was a proxy for firm size. Positively significant coefficient means that bigger firms were more likely to acquire new capabilities. This is also consistent with behavioral theory of the firm (March, 1991). Bigger firms tend to have more organizational slack and more organizational slack can be used in exploration activities such as acquisition of new capabilities (George, 2005). Studio Founding Year was also significant ($p < 0.01$). This means that studios that were founded more recently were more active in acquiring new genre skills.

Among director level controls, two variables were statistically significant. The coefficient of 'Director Average Performance' was significant and positive ($p < 0.01$), showing that directors with previously successful track records were more likely to contribute to the acquisition of new genre skills when they collaborated with studios. 'Director Genre Concentration' was shown to have a negative influence on the focal animation's chances to have a new genre component ($p <$

0.001). This means that directors who focused on narrowly defined genres were less likely to contribute to the studios' effort to learn new talents.

Among repeated collaboration level controls, the coefficient of 'Studio-Director Tie Collaboration in Production Committee' was statistically significant ($p < 0.01$). This showed that a pairing of a director and a studio that had worked together previously in production committees was more likely to have a positive influence on the addition of new genres to the focal animation.

***Main Analysis***

Table 15 reports the results of adding two sets of independent variables to the baseline model (Model 1). The first set of variables was 'Director's Mobility to Committees' and 'Studio Committee Experience. The second set included 'Director New Genre Experience' and 'Studio New Genre Experience'. The first set was added to the baseline model and made Model 2. Model 3 was based on Model 2 with the second set of independent variables.

Hypothesis 4 predicted that the higher the mobility of human resources to previous short-term project organizations, the higher a firm's chance of acquiring new capabilities for the focal project, when working together with the human resources. The coefficient of 'Director Mobility to Committees' was statistically significant and positive, showing that directors who had moved more to production committees were more likely to increase the chance of adding new genres to the focal animation. Combined with the insignificant effect of 'Director Mobility to

Non-Committees', these results showed that the chance of acquiring new capabilities for the focal project was driven by previous mobility of human resources to short-term project organizations.

Table 15: Analysis 2: Main Model

| | Model 1 | | | Model 2 | | |
|---|---|---|---|---|---|---|
| **Variables** | **Coeff.** | | **S.E.** | **Coeff.** | | **S.E.** |
| Intercept | -724.502 | *** | 101.690 | 285.2349 | | 176.8581 |
| Studio related Controls | | | | | | |
| Studio Non-Committee Experience | .0007 | | .0015 | .0024 | | .0019 |
| Studio Average Performance | -.3863 | ** | .1520 | -.4065 | ** | .1363 |
| Studio Yearly Output | .0899 | *** | .0209 | -.0144 | | .0302 |
| Studio Genre Concentration | -2.3421 | | 2.1763 | .1310 | | 1.6693 |
| Studio Founding Year | .0347 | ** | .0111 | .0233 | | .0142 |
| Director related Controls | | | | | | |
| Director Mobility to Non-Committee | .0176 | | .0154 | .0063 | | .0177 |
| Director Average Performance | .5309 | ** | .1617 | .3907 | * | .1794 |
| Director Yearly Output | .0293 | | .1049 | -.1476 | | .1199 |
| Director Genre Concentration | -12.9979 | *** | 3.5928 | -6.3623 | *** | 3.8207 |
| Repeated Collaboration related Control | | | | | | |
| Studio-Director Tie Collaboration in Production Committee | .7536 | ** | .0497 | .8133 | *** | .3245 |
| Studio-Director Tie Collaboration in Non-Committee | .3681 | | .2582 | 1.2224 | * | .3006 |
| Macro-Environment Related Control | | | | | | |
| Year | .3269 | *** | .0497 | -.1661 | *** | .0849 |
| Director Mobility to Committees | | | | .4330 | | .0742 |
| Studio Committee Experience | | | | .1238 | | .0260 |
| Pseudo R-Squared | .02054 | | | 0.3170 | | |
| Log Likelihood | -338.04436 | | | -290.54647 | | |
| AIC | 704.0887 | | | 613.0929 | | |
| BIC | 766.6582 | | | 684.6009 | | |

Significance: † (< .1), * (< .05), * (< .01), & *** (< .001)

Table 15 (continued).

| | Model 2 | | | Model 3 | | |
|---|---|---|---|---|---|---|
| **Variables** | **Coeff.** | | **S.E.** | **Coeff.** | | **S.E.** |
| Intercept | 285.2349 | | 176.8581 | 331.5291 | * | 153.3937 |
| Studio related Controls | | | | | | |
| Studio Non-Committee Experience | .0024 | | .0019 | -.0001 | | .0019 |
| Studio Average Performance | -.4065 | ** | .1363 | -.4503 | ** | .13625 |
| Studio Yearly Output | -.0144 | | .0302 | -.0171 | | .0283 |
| Studio Genre Concentration | .1310 | | 1.6693 | -.0412 | | 1.7283 |
| Studio Founding Year | .0233 | | .0142 | .0105 | | .0131 |
| Director related Controls | | | | | | |
| Director Mobility to Non-Committee | .0063 | | .0177 | -.0725 | * | .0279 |
| Director Average Performance | .3907 | * | .1794 | .2706 | | .2057 |
| Director Yearly Output | -.1476 | | .1199 | -.1767 | | .1222 |
| Director Genre Concentration | -6.3623 | *** | 3.8207 | -.9186 | | 3.9098 |
| Repeated Collaboration related Control | | | | | | |
| Studio-Director Tie Collaboration in Production Committee | .8133 | *** | .3245 | 1.3918 | *** | .3054 |
| Studio-Director Tie Collaboration in Non-Committee | 1.2224 | * | .3006 | .9583 | ** | .3208 |
| Macro-Environment Related Control | | | | | | |
| Year | -.1661 | † | .0849 | -.17693 | * | .0747 |
| Director Mobility to Committees | .4330 | *** | .0742 | .3931 | *** | .0749 |
| Studio Committee Experience | .1238 | *** | .0260 | .1016 | *** | .0198 |
| Director New Genre Experience | | | | .3768 | *** | .0963 |
| Studio New Genre Experience | | | | .1655 | ** | .0518 |
| Pseudo R-Squared | 0.3170 | | | 0.3489 | | |
| Log Likelihood | -290.54647 | | | -277.00874 | | |
| AIC | 613.0929 | | | 590.0175 | | |
| BIC | 684.6009 | | | 670.464 | | |

Significance: † (< .1), * (< .05), * (< .01), & *** (< .001)

Hypothesis 5 predicted a positive relationship between a studio's previous experience in production committees and the likelihood of new genres being included in a TV animation by a studio. Results showed that 'Studio Committee Experience' had a significant positive effect on the dependent variable. This suggests that firms with more experience in previous short-term project organizations were more likely to learn how to identify new capabilities and how to combine existing capabilities to create new capabilities, using previous experience to acquire new capabilities in subsequent projects. Hypothesis 7 predicted that a director's previous experience in adding new genres to animation would help a studio include new genres to the focal TV animation. Similarly, Hypothesis 8 predicted a positive relationship between a studio's previous experience in adding new genres to animation and the chance of the focal TV animation including new genres. Both coefficients of 'Director New Genre Experience' were significant with a positive sign. These results confirmed that previous experience in new capability acquisition both by human resources and firms was positively associated with the acquisition of new capabilities in subsequent projects.

So far, Hypotheses 4 and 5 were supported and the results remained consistent throughout Model 2 and 3. Results from Model 3 supported Hypotheses 7 and 8. With these results, a tentative conclusion about the effects of human resource mobility, participation in previous short-term project organizations, and experience with new capability acquisitions positively impact firms' chances of expanding the scope of their capabilities. With an interaction model left, these

hypotheses were tested with two interaction hypotheses. Table 16 reports the results of adding two interaction variables to a previous model (Model 3).

Table 16: Analysis 2: Interaction Model

| | Model 2 | | | Model 3 | | |
|---|---|---|---|---|---|---|
| **Variables** | **Coeff.** | | **S.E.** | **Coeff.** | | **S.E.** |
| Intercept | 331.5291 | * | 153.3937 | 335.9066 | | 166.021 |
| Studio related Controls | | | | | | |
| Studio Non-Committee Experience | -.0001 | | .0019 | -.0007 | | .0023 |
| Studio Average Performance | -.4503 | ** | .13625 | -.3785 | ** | .1431 |
| Studio Yearly Output | -.0171 | | .0283 | -.0529 | | .0367 |
| Studio Genre Concentration | -.0412 | | 1.7283 | -.1695 | | 1.8328 |
| Studio Founding Year | .0105 | | .0131 | .0062 | | .0138 |
| Director related Controls | | | | | | |
| Director Mobility to Non-Committee | -.0725 | * | .0279 | -.0638 | * | .0309 |
| Director Average Performance | .2706 | | .2057 | .3812 | | .2333 |
| Director Yearly Output | -.1767 | | .1222 | -.2415 | † | .1354 |
| Director Genre Concentration | -.9186 | | 3.9098 | -1.2662 | | 4.4659 |
| Repeated Collaboration related Control | | | | | | |
| Studio-Director Tie Collaboration in Production Committee | 1.3918 | *** | .3054 | .8614 | ** | .3281 |
| Studio-Director Tie Collaboration in Non-Committee | .9583 | ** | .3208 | .5664 | † | .3369 |
| Macro-Environment Related Control | | | | | | |
| Year | -.17693 | * | .0747 | -.1753 | * | .0805 |
| Director Mobility to Committees | .3931 | *** | .0749 | .2206 | * | .1054 |
| Studio Committee Experience | .1016 | *** | .0198 | .0619 | * | .0258 |
| Director New Genre Experience | .3768 | *** | .0963 | .4146 | *** | .10560 |
| Studio New Genre Experience | .1655 | ** | .0518 | -.0016 | | .0593 |
| Director Mobility × Studio Committee Experience | | | | .0238 | ** | .0085 |
| Director × Studio New Genre Experience | | | | .7692 | *** | .1134 |
| Pseudo R-Squared | 0.34891 | | | 0.4600 | | |
| Log Likelihood | -277.00874 | | | -231.42811 | | |
| AIC | 590.0175 | | | 502.8562 | | |
| BIC | 670.464 | | | 592.2412 | | |

Hypothesis 6 predicted a positive interaction between mobility of human resources to short-term project organizations and firm experience in previous short-term project organizations. The coefficient of this interaction term was positive and statistically significant. The result implied that a director's mobility to production committees and a studio's experience in production committees jointly amplified the studio's chances of learning new genres for the focal TV animation. This result can also be interpreted as a moderation effect of 'Director Mobility to Production Committee' on the positive relationship between 'Studio Committee Experience' and the likelihood of new genres being added to the focal animation (Baron & Kenny, 1986; McClelland & Judd, 1993). That is, 'Director Mobility to Production Committee', as a moderator, greatly strengthens the positive relationship between 'Studio Committee Experience' and the studio's chance of adding new genres to the TV animation project. It was also possible to formulate 'Studio Committee Experience' as a moderating variable because Hypothesis 6 only predicted the joint influence. This portion of the results confirmed that hypothesis 6 was supported. In addition, the coefficients for 'Director Mobility to Committees' and 'Studio Committee Experience' remained significant in Model 4. Thus, Hypotheses 4 and 5 were supported.

Hypothesis 9 predicted a positive interaction between new capability acquisition experience of human resources and firms. First, the coefficient of interaction term was significant and positive. This showed that jointly, new genre experience by a director and a studio increased the likelihood of adding new genres

to the focal TV animation. Second, the coefficient of 'Director New Genre Experience' was positive and significant. This was consistent with the results from the previous models. However, 'Studio New Genre Experience' lost significance. When a higher order term is significant but a lower order term is not significant, significance of a higher order term determines the hypothesis testing (Cohen & Cohen, 1983; Aiken & West, 1991). Substantively speaking, when previous new genre experience of a director and a studio was considered together, a director's experience in creating animation with new genres determined the studio's chance of learning new genre skills. This result showed that Hypotheses 7 and 9 were supported. However, the coefficient of 'Studio New Genre Experience' lost significance when jointly considered with 'Director New Genre Experience'. Thus, Hypothesis 8 was not supported.

**Summary of Theory Testing**

The results from two analyses broadly supported the hypotheses derived in the theory section. Analysis 1 tested three hypotheses predicting the formation of short-term project organizations for corporate entrepreneurship. Novelty of Entrepreneurship Project (Hypothesis 1), External Resource Availability (Hypothesis 2), and Internal Resource Constraints (Hypothesis 3) were proposed to positively influence the formation of short-term project organizations and all three hypotheses were supported. In addition to three main hypotheses, two alternative

hypotheses (Hypotheses 2a and 3a) were tested to explore whether external resource availability and internal resource constraints had non-linear effects on the formation of short-term project organizations. Both non-linear hypotheses were supported.

Analysis 2 tested four main effect hypotheses and two interaction hypotheses predicting the acquisition of new capabilities. Hypotheses 4 and 5 predicted that the mobility of human resources to previous short-term project organizations and firms' experience in previous short-term project organizations positively influenced the chance of firms acquiring new capabilities. Hypotheses 7 and 8 concerned experience of new capability acquisitions by human resources and firms. And lastly, two interaction hypotheses were derived from the main effect hypotheses. All hypotheses except Hypothesis 8 (Firm Experience in New Capability Acquisition) were supported.

# CHAPTER 5

# DISCUSSION

## Summary

This study was motivated by two broad and intimately related research interests — the formation of short-term project organizations and the acquisition of new capabilities in the context of corporate entrepreneurship. A preliminary search of existing literature showed a potential because the search revealed that phenomena around short-term project organizations for corporate entrepreneurship activities had not been studied thoroughly. To build a theoretical foundation, this study drew insights from theories of entrepreneurship, short-term organizations, human resource mobility, and organizational learning. First, this study identified short-term project organizations as an interesting and important organizational form for corporate entrepreneurship and investigated the factors responsible for their formation. Second, this study examined what caused new capability acquisitions in corporate entrepreneurship, further exploring the effects of short-term project organizations along with human resource mobility and previous experience of new capability acquisitions. Hypotheses were generated and tested in the context of the Japanese animation industry between 2000 and 2008 where production committees, a form of short-term project organizations had become an alternative production form.

This study has shown that the novelty of entrepreneurship projects and resource conditions inside and outside of firms made firms search for solutions using short-term project organizations. It found supporting evidence that learning from previous short-term experience was valuable because it enabled firms and people to become more sensitive to creative ideas and resilient enough to cope effectively with the uncertain and risky world of corporate entrepreneurship. It also showed that mobility of human resources could be a driver of corporate renewal, giving firms access to the entrepreneurial experience of others. Lastly, this study discovered that in collaboration between external human resources and internal organizational resources, the creative experience of external experts outweighed organizational creative experience.

Concerning the formation of short-term project organizations for corporate entrepreneurship, this study presented the following three main findings:

1. Novelty required for creating solutions to entrepreneurial problems significantly impacted the choice of organizational form — promoting short-term project organizations was an attractive alternative to single-firm entrepreneurship. Entrepreneurial projects that required more novelty were carried out more by short-term project organizations than by single firms.
2. Fluctuation of available resources in the environment that were critical for firm entrepreneurship projects influenced the choice of organizational form. Specifically, increase in available resources previously used in other

entrepreneurial projects increased the chances of forming short-term project organizations.

3. Changes in available resources internally at the time of launching entrepreneurial projects influenced the choice of organizational form. The higher the constraints in internal resources, the more likely it was that the short-term projects would form.

Concerning acquisition of new capabilities, this study presented the following four findings:

1. Not all mobility of human resources contributed to firms' acquisition of new capabilities. Only mobility of human resources to previous short-term project organizations could meaningfully contribute to the expansion of firm capabilities.
2. Firms that had used short-term project organizations for their previous entrepreneurship projects were more likely to acquire new capabilities in their subsequent projects than firms that had carried out stand-alone entrepreneurship projects.
3. Cooperation between human resources with high mobility to short-term project organizations and firms with plenty of experience in short-term project organizations drastically increased the firms' chances to learn new capabilities.
4. In collaboration between human resources drawn from environment and firms, human resources used in previous projects for new capability

acquisitions significantly impacted firms' chances to acquire new capabilities. In such collaboration, the experience of human resources outweighed firms' own experiences in learning new capabilities

Taken together, these results supported the theories of the formation of short-term project organizations and acquisition of new capabilities. Findings of this study suggested short-term project organizations as an alternative means of carrying corporate entrepreneurship under certain conditions. Moreover, short-term project organizations could promote learning experience beneficial to firms' efforts to rejuvenate their business with new resources and capabilities.

## Theoretical Implications of Study Findings

### Formation of Short-term Project Organizations for Corporate Entrepreneurship

First, the results suggested that the Novelty of Entrepreneurship Project determined the choice of organizational form when firms pursued entrepreneurial opportunities and that it was closely associated with the characteristics of solutions that firms struggled to discover. If the objective of an entrepreneurial project was to create something that had never existed, applying organizational routines that had existed within organizations was not only ineffective but also irrelevant (Levitt & March, 1988). It could be speculated that if firms attempt to reuse old solutions to new problems from entrepreneurial opportunities, such an attempt could easily

destroy the opportunities. With existing routines irrelevant, searching outside of firm boundaries was the only possible way to create novel solutions. This was when firm-level non-local search behavior became network- or community-level non-local search (Almeida & Kogut, 1999; Rosenkopf & Almeida, 2003). Additionally, the novelty of entrepreneurship project had an alternative measure. This variable, instead of considering novelty as dichotomous, captured how many sources of existing content could be drawn to make the focal animation — more pre-existing content meant less creativity was required for the focal animation. Sometimes novelty became extremely tricky to determine and the amount of available content could have been a nice complement for a dichotomous measure. The results with this alternative measure also supported the prediction.

The following implications can be drawn from this study's results. Seeking entrepreneurial opportunities is a set of activities that is geared to solving problems. Among those problems, novelty has been the crown jewel of all entrepreneurial activities, as the evidence from the real world and studies following the Schumpeterian tradition confirm the value of innovation. More generally, novelty as a characteristic of task often demands unconventional ways of searching for solutions. The results showed that novelty required as a characteristic of an entrepreneurial project determined the mode of mobilizing and utilizing resources and capabilities. Furthermore, for small firms such as Japanese animation studios, escaping from firm-level non-local searches through production committees may

have been the only possible way to cope with an increasing demand for creative content.

Second, the results showed that if the environment could carry more resources that had been used in previous short-term project organizations for entrepreneurship projects, it could significantly increase the formation of subsequent short-term project organizations. If resources that were previously used in short-term project organizations carried direct and indirect learning assets, absorbing such resources would provide firms with learning opportunities. Moreover, characteristics of resources governed choices about organizational form (Zott & Amit, 2007). Concern for organizational form choice in relation to resources drawn from the environment was legitimate because combining external resources with internal resources almost always created tension. To contain such tension and carry out entrepreneurial projects, a different organizational form emerged as attractive.

In expanding firm level non-local searches, existing literature has mainly paid attention to reaching out to other firms. Following the alliance logic or seeking legitimacy logic, forming a partnership was a logical solution. However, non-local searches beyond firm boundaries also included searching the environment directly to absorb necessary resources to solve problems that firms often faced in carrying out entrepreneurship projects. The results of this study showed that non-local searches beyond firm boundaries included searches for resources available in the industry environment that did not permanently belong to firms. This study also

showed that characteristics of resources such as directors in the Japanese animation industry could influence the mode of organizing activities for carrying out entrepreneurial projects.

Third, resource constraints faced by firms at the time of launching a new entrepreneurship project also influenced the choice of organizational form. Firms strove to fully utilize resources available internally but almost always faced varying levels of resource constraints. Just as valuable resources were difficult to obtain from the environment, so were the valuable resources for corporate entrepreneurial activities. Pursuing risky and uncertain entrepreneurial opportunities by diverting valuable internal resources from existing lines of operations could have been the last decision that many sensible managers wanted to make. Therefore, when alternative means to carry out corporate entrepreneurship projects existed, firms were naturally attracted to exploring alternatives.

From the results that showed the relationship between internal resource constraints and the formation of short-term project organizations for corporate entrepreneurship, this study theorized and empirically demonstrated that firms facing resource constraints internally tended to proactively alter how they allocated resources to entrepreneurial opportunities using different organizational forms.

Some control variables were worth mentioning. Firms' previous experience in short-term project organizations remained marginally significant across models. This was consistent with teachings in organizational learning theory — past experience influenced subsequent future experience. Compared to the

marginal effect of firms' previous experience in short-term project organizations, performance of the focal firm and previously formed short-term project organizations were significant. The results suggested that unlike other decisions made by organizations that were influenced by many factors, decisions to choose short-term project organizations over other forms of entrepreneurship were specifically influenced by performance. This was, in fact, very convincing because blindly replicating what other firms had done would not guarantee success. Therefore, managers paid more attention to performance to find out whether previous entrepreneurship projects were successes or failures. This also made more sense not because success is more salient information but because firms could study the factors responsible for success.

Lastly, 'Studio Yearly Output', a proxy used to capture firm size, was significant but the coefficient indicated a minus sign. This meant that bigger firms were less likely to be part of short-term projects. A few speculations could be made. First, it is possible that 'Studio Yearly Output' was not really a good proxy for firm size. This variable was constructed as a 1-year lagged value of the number of animations created yearly by a studio. Many animations were rolled over to the following year and if a studio started many animations in the last quarter of the year, it was likely that the studio had many ongoing animations, which would reduce the chances of starting new animations. This would also suppress the chances of forming production studios for subsequent animations. Still another possible explanation was that bigger studios did not use production committees as

frequently as smaller studios. This also made sense because firms that were self-sufficient were not easily attracted to collaboration opportunities (Ahuja, 2000). It might also have been possible that bigger firms were not willing to share the profits entrepreneurship projects may have generated.

***Limitations and Future Research***

This study acknowledges the following limitations in the study about the formation of short-term project organizations in corporate entrepreneurship and recognizes them as opportunities for future research.

Novelty is at best, a vague concept. Especially in corporate entrepreneurship literature, little attention has been paid to thoroughly examining the concept and its implications for entrepreneurial activities. This study attempted to establish a theoretical connection between novelty and the emergence of an organizational form for corporate entrepreneurship. Yet, linking the concept and formulating an appropriate empirical measure requires more work. For example, the measure this study used to capture novelty was dichotomous. This study also employed an alternative measure based on availability of existing content. However, a more fine-grained measure that would tightly bind with the concept would be preferable.

Even though this study attempted to establish the causal link between the creativity required to entrepreneurial projects and the choice of organizational forms, it did not thoroughly examine the relationship between innovation and

creativity, a theoretical conundrum that requires further endeavor. A fundamental question that should be answered is whether more creativity can always lead to innovation. For example, in many contents creating industries, painstaking aggregation of creativity often results in mixed reception from the audience. Rather, audience will respond more positively to simple but clearly focused creativity. In this regard, innovation tends to be more closely aligned to the latter form of creativity than the former. Depending on whether the goal of entrepreneurial project is either disruptive innovation or incremental innovation, different kind and degree of creativity is needed.

The empirical approach used to capture internal resource constraints requires further development. Specifically, internal resource constraints were measured by the number of concurrent projects managed by an animation studio. More concurrent projects meant more resource constraints. However, there is a serious hole in this reasoning, which gave rise to even more complications to the model in relation to the proxy used to capture firm size. To adequately explain resource constraints, correct information about the number of people employed by a studio and how these people were deployed to a certain number of projects for a set amount of time would be needed. Using this information would return information about capacity utilization and the amount of slack resources that could be applied to a new animation project. These data did not have head counts and only reflected the number of projects running simultaneously. Without adequately measuring resource size, just the number of concurrent projects provided information about

scale. Thus, this study employed different ways to measure internal resource constraints that partially mitigated the problem. Furthermore, it is somewhat likely that the number of concurrent projects reflected not the internal resource constraints but the size of the firm because bigger firms tended to have more projects going simultaneously. This could have simply been attributed to a data-availability issue. Although data availability could be a universal excuse, what is needed are creative ways to measure internal resource constraints.

Unlike other organizational learning studies that reported the effects of organizational experience, the results from Analysis 1 showed only marginal effects of a studio's previous experience in short-term project organizations. This is intriguing because previous experience is usually a good indicator of predicting future organizational behavior. A few explanations are possible. First, the average age of firms from the sample used in other organizational learning studies is older than that of this study. For example, the average age of railroad firms in Baum and Dahlin (2007) was 59.74 and average firm age of U.S. commercial banks in Kim and Finkelstein (2009) was 27.03. This may mean that the firms in the sample of this study were not old enough to reveal an experience effect. Still another explanation is that animation studios in the Japanese animation industry had systematically different behavioral patterns for which previous experience in production committees was not a good predictor for the formation of production committees for subsequent animation projects. Evidence that is inconsistent with existing organizational learning studies may open up an opportunity to discover

new relationships between organizational experience and entrepreneurial behavior. Figure 7 shows the 'Yearly Founding' of various Japanese animation studios, which indicates that a majority of Japanese animation studios were founded in the late 1980s and early 1990s.

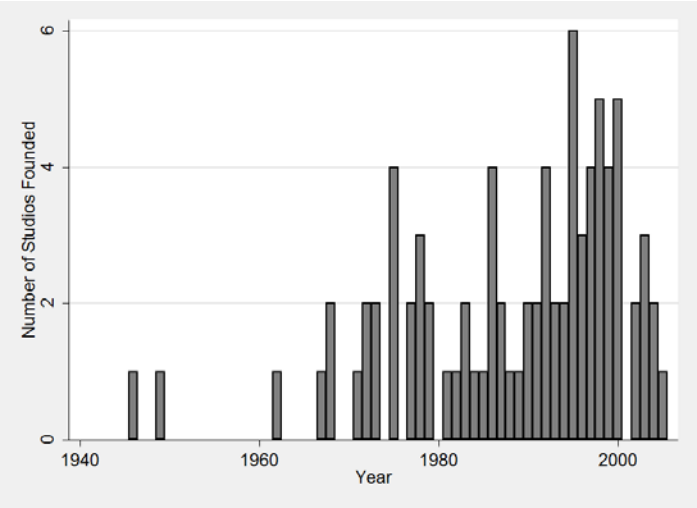



Figure 7: Yearly Founding of Japanese Animation Studios

Lastly, this study used a sample from a single industry that had gone through a very specific change. Studies based on single-industry data tend to present an accurate picture about what is going on in that industry, thus achieving high internal validity. However, the results from such a study have a serious limitation in generalizing these findings to broader contexts. This is indeed tricky because generalization almost always works as a trade-off to increasing internal validity. Thus, it is in a researcher's hands to decide which to achieve and which to sacrifice. For this question, this study chose accuracy of results over broad applications of findings.

**Acquisition of New Capabilities through Short-term Project Organizations**

First, the results showed that mobility of human resources mattered for firms' acquisition of new knowledge. This study examined whether previous participation in short-term project organizations had any learning value, especially for acquiring new capabilities. This was consistent with the findings of existing mobility literature (Almeida & Kogut, 1999; Madsen, Mosakowski et al., 2003). In addition, this study showed that cumulative mobility of human resources to short-term project organizations significantly increased a firm's chances of acquiring new capabilities, but mobility to non-short-term project organizations hurts a firm's innovative activities. In the empirical context of the Japanese animation industry, this meant that a director who had migrated more to production committees could contribute to a collaborative project between a director and a studio by adding new genres to the animation. In contrast, a director who had worked more with single studio-based projects actually reduced a studio's chances to learn new genre skills. This suggested that the director who had moved to projects managed by single studios was more likely to be exposed to environments that did not promote creative activities, and ended up using the same genres repeatedly.

Mobility studies often focus on the movement of people and tend to overlook the directionality of mobility. Furthermore, existing mobility studies understand mobility as a single event rather than a series of events that shape various aspects of human resources that travel inside and outside of firm boundaries. This study showed that mobility of human resources had differential

effects on firms, depending on the motivations that firms have in benefiting from mobility.

Second, the results of this study showed that, as proposed in the theory section, short-term project organizations provided rather unique learning opportunities to firms. Although not formerly tested, the results implied that short-term project organizations were special learning places where more experiments with new-knowledge creation and recombination of existing knowledge took place. Not all mobility of human resources is useful for new capability acquisitions. The results showed that some experience was more valuable than others. When coefficients of a studio's experience in short-term project organizations and non-short-term project organizations were compared, only the coefficient of experience in short-term project organizations significantly impacted the likelihood of new genres being added to the focal TV animation. On the contrary, experience in studio contracting had no meaningful impact on a studio's chances to learn new genres. Combined, these results implied that non-local search experience beyond firm boundaries had more to contribute to the acquisition of new capabilities than non-local search that was limited to the firm's boundaries. This also suggested that creating a separate environment for experimenting with new and radical ideas better enhanced firms' entrepreneurial activities than simply constraining all activities inside of the firms.

Third, the results meaningfully illustrated that collaboration between external experts and firms was another potentially fruitful area of research,

especially for corporate entrepreneurship. Much attention had been directed to strategic alliances (Hoang & Rothaermel; Gulati, 1995, 1998; Hoang & Rothaermel, 2005). Both cumulative mobility of human resources and firm experience in short-term project organizations independently maintained their positive influences on the chances for new capability acquisitions. When these two were combined, the chances of a firm acquiring new capabilities increased dramatically. As shown in Figure 8, the highest likelihood of adding new genres to the focal TV animation occurred when external experts had accumulated mobility with previous production committees and when studios had plenty of previous production committee experience.

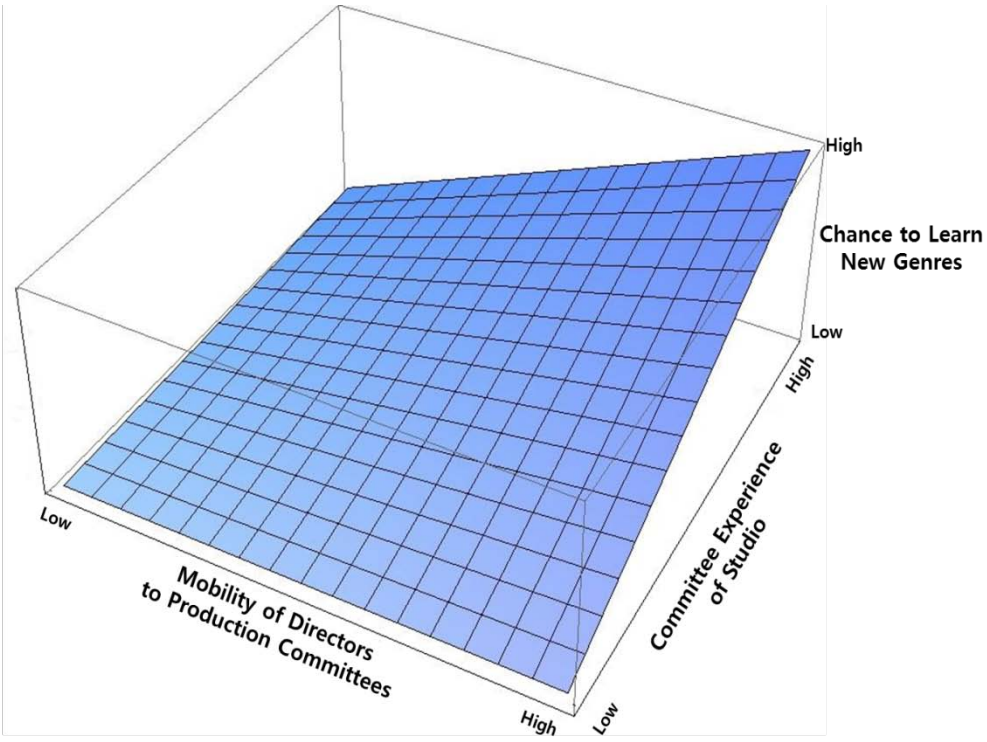



Figure 8: Mobility of Directors and Studio Production Committee Experience

Fourth, this study found that, consistent with the findings of prior organizational learning studies, prior experience in learning new capabilities increased the chances of acquiring new skills in the future. However, when external experts' experience in new capability acquisitions was combined with firms' own experience of the same kind, the results became interesting. The effects of firms' own experience in acquiring new capabilities disappeared. Instead, combined effects and experience of human resources remained significant. To put it differently, when a director's previous experience in adding new genres to animations moderated the relationship between a studio's previous experience in new genres and its chance of including new genres in the focal TV animation, the director's experience became significantly more important than the studio's experience. In fact, a studio's experience became insignificant. Such results implied that in corporate entrepreneurship projects that were carried out through collaborations between external experts and firms, the locus of entrepreneurial innovation resided in external experts.

The set of control variables to account for alternative explanations for new capability acquisition revealed intriguing facts. First, the results revealed that studios with poor previous performance were more likely to include new genres in their animation. This was also consistent with performance feedback in organizational learning theory. Animation viewers could give poor ratings to animations for many reasons. However, if overall studio ratings for animations were poor, it clearly meant that the studio had not been doing a good job in

producing animations that deserved decent appreciation from animation viewers. Considering the fact that studios were extremely sensitive to ratings, studios tended to take immediate measures to correct poor ratings. This resulted in studios' efforts to include new genres in their subsequent animations. Given the fact of studios' increased tendency to add new genres to their newly launched animation projects, the results, however, could mean something totally different. The possibility for different interpretations of the results will be discussed in the following section about limitations and future research.

Second, the results showed that a director who was involved in many projects in the previous year was less likely to contribute to creating animation with new genres than a director who was not drained of too much creative energy. While 'Director Yearly Output' was constructed with the same operation used for 'Studio Yearly Output', substantial meaning for 'Director Yearly Output' is different from that for 'Studio Yearly Output'. 'Studio Yearly Output' was used as a proxy for firm size. Due to data limitations, the data did not indicate how many people had been employed by a studio and in what ways those people were assigned to animation projects. Thus, the number of animations made by a studio per year was used to indirectly capture the size of the studio. In the director's case, yearly output represented a director's mental capacity to manage creative projects each year. Similar to a manager's attention, a director's creative capacity was extremely important in animation creation (Ocasio, 1997, 2001). It can be speculated that too much involvement in animation projects can seriously drain a

director's creative reservoir and thus, can prevent the director from helping a studio include new genres in the animation.

Lastly, the results revealed an intriguing fact. This study included two variables about repeated collaborations between a director-studio pair in different contexts — production committee and studio contracting. Previous studies in strategic alliances typically reported a positive relationship between familiarity among partners and the outcome of collaboration (Gulati, 1995; Hoang & Rothaermel, 2005). The results of this study, while broadly supporting the benefits of repeated collaboration, presented an interesting twist; that is, not all repeated collaboration was valuable or useful for firms. Particularly, when firms acquired new capabilities through collaboration with external experts on entrepreneurial projects, the context in which firms and external experts interacted with each other to solve problems carried a special meaning. Empirical evidence found in the Japanese animation industry showed that the more frequently a director and a studio had collaborated on previous production committees, the more likely the pair would create animation with new genres. However, if the pair had cooperated in non-production committee environments, namely in studio contracting, the pair had a lower likelihood of making animations with new genres. This implied that if firms were to use collaboration with external experts as a means to acquire new capabilities and thus to achieve innovation, these firms then should pay attention to setting up a task environment that supported creative experimentation.

***Limitations and Future Research***

This study acknowledges the following limitations about the formation of short-term project organizations in corporate entrepreneurship and recognizes them as opportunities for future research.

First, it is debatable whether it is proper to say that observing the presence of new genres in a TV animation does mean acquisition of new capabilities by a studio. Adding new genres to subsequent animation projects may represent a studio's increased tendency to try new genres. It can be assumed that to include new genres in animation, the studio must first learn the skills necessary for creating new genres. However, like many organizational learning studies, what this study tested was not the process but the results, which only allowed observation of the presence of new genres in the focal animation project. Therefore, the results, even if statistically significant, may have meant something else. One possibility was that including genres that had never been tried by a studio before may have indicated an increased tendency to become entrepreneurial. This is quite plausible, in fact. Firms should learn and acquire routines required to carry out entrepreneurial projects while they are collaborating with other firms and external experts in short-term project organizations. At the same time, firms were influenced by the entrepreneurial spirit shared by the collaborators in the short-term project organizations and carried the spirit into their own projects. The results are quite the same because experimenting with new genres could be viewed as the acquisition of new capabilities or experimenting with new possibilities for future innovation.

Another plausible view is that firms were reacting to market demand for new things. Because firms could not always anticipate which path of exploration would lead to future opportunities and success, they simply try different things whenever the situation allowed. Describing firms as a pack of blind men trying to understand an elephant is not as attractive as describing firms as a collection of conscious people trying to bring meaning and order to what they do. After all, trying new genres may have only been an artifact of unguided exploration efforts.

Second, it is necessary to develop a more fine-grained measure of mobility. This study used a so-called cumulative mobility. The logic behind the cumulative mobility measure was that mobility meant more than a single event of people migrating from one firm to another. People carried what they had experienced with them as they crossed firm boundaries; experience was embedded in people. Thus, treating mobility as a single non-repeating event may not be a proper way to capture the essence of mobility. Hence, this study included cumulative mobility to account for the roll-over effect of experience. This seemed to partially solve problems in existing mobility studies but it also creates another problem. By definition, cumulative mobility meant stacking each mobility event by counting the number of movement events. This made the measure identical to the experience variable that had been used frequently in organizational learning studies. Constructing a cumulative mobility measure in such a way is identical to generating an experience variable and may become a less serious concern, if the variable is used without the presence of other experience variables in the same model.

However, using a cumulative mobility measure with an experience measure raises a question about using the same measurement to capture two different constructs. It must be acknowledged that further exploration of how to properly measure mobility without creating an overlap with an experience measure is required.

Lastly, the story about the formation of short-term project organizations and acquisition of new capabilities can be a story about exploration and exploitation. More specifically, collaboration between external experts and firms can be viewed as a division of labor between external experts, who are more appropriate agents for carrying out exploration, and firms as agents for exploitation. Furthermore, using short-term project organizations to carry out entrepreneurship projects and to attract human resources previously involved in short-term project organizations can be understood as one possible strategy to make firms ambidextrous (He & Wong, 2004; Holmqvist, 2004). Since acquiring new capabilities is an act of exploration, external experts can contribute while firms cannot, when firms and external experts collaborate to come up with something new. And this explanation also fits with studies about non-local search behavior. If short-term project organizations are means to expand firm level non-local searches to network- or community-level non-local searches, absorbing resources that have been used in industry- level non-local searches is another way to overcome the limitations of firm-level non-local searches (Rosenkopf & Almeida, 2003).

**Contribution to Management and Strategy Practice**

This study makes the following contributions to management and strategy practices, which brings the notion of short-term existence to the center. As stated in the beginning of this study, the word short-term or temporary almost always carries a negative connotation. Strategic management literature also heralds the long-term vision and strategies that secure the long-term viability of organizations. What has been overlooked is the fact that mismanaging short-term activities can ruin even the greatest long-term plans. Additionally, dynamic changes in the environment can significantly increase the importance of short-term management. In this regard, this study emphasizes the value of paying more attention to short-term activities. Along with the emphasis on short-term management, this study presents short-term project organizations as an alternative means for carrying out corporate venturing.

This study provides a guideline for designing an organization that can effectively carry out entrepreneurship projects. Specifically, managers could survey three main conditions when they identify corporate venturing opportunities. These three main conditions include characteristics of entrepreneurial opportunity, external resource conditions, and internal resource conditions. Understanding the characteristics of opportunity could enable managers to determine whether existing practices would be effective for carrying out the project. Understating external resource conditions could provide them with more options for carrying out projects. And gauging internal resource conditions could give managers a clear idea about

whether the organization could support additional projects. When understandings about these conditions are combined, managers could have a clearer idea about how to mobilize resources and organize activities to carry out entrepreneurial projects.

Empirically, this study shows that a careful study of the mobility of external experts would enable firms to anticipate which external expert would have more potential to solve entrepreneurial problems. Specifically, understanding the nature of mobility is the key to hiring the right person. Evidence from the Japanese animation industry suggests that directors who have more mobility with production committees are more likely to become a valuable asset for producing animations with new genres than directors who have done many projects but under studio contracting terms. Furthermore, by focusing on mobility of external experts, this study provides managers with different views about flexible management. Flexible management often applies strategies within an organization, but being flexible also means maintaining flexible relationships with external labor forces such as directors and animators in the animation industry, experts who have emerged as alternative sources for gaining access to knowledge and skills.

Fourth, this study suggests that collaborating with external experts can complement internal managers, especially when managing corporate venturing. A conventional view suggests that external experts are professionals with narrowly defined job or task descriptions such as IT specialists and consultants for legal or financial issues. Their contribution, by definition, is limited. However, when it comes to corporate entrepreneurship projects, often internal managers are not well

equipped with knowledge and skills for handling tensions between existing operations and new projects. External experts can become valuable aids to internal managers for solving these problems. Evidence from the Japanese animation industry indicated that external experts such as directors who are not only knowledgeable about detailed tasks, but who are also experienced in managing projects, can make a big contribution. In addition, working with this kind of external expert can become a valuable learning opportunity for internal managers.

## Contribution to Theory

Recently, short-term project organizations have become popular in many industries, and firms are quite convinced of their practical value (Miles, Miles et al., 2005). Our understanding of this intriguing organizational form is limited (Powell, 1990). Furthermore, no serious effort has been made to understand short-term project organizations in corporate entrepreneurship. Thus, to understand the formation of short-term project organizations and their effects on firm capability acquisitions, this study has drawn insights from theories such as organizational learning, corporate entrepreneurship, short-term organizations, and mobility. It also addresses the general audience in the strategic management field.

Corporate entrepreneurship has often been viewed as the major launching of large-scale projects that almost always result in the founding of firms for long-term survival. This study takes a more flexible view of corporate entrepreneurship.

Simply put, any new projects that firms pursue can be understood as corporate entrepreneurship projects. Moreover, this study proposes that corporate entrepreneurship does not necessarily give birth to permanent organizations. Understanding how to connect short-term project organizations with corporate entrepreneurship is this study's bigger goal. In this regard, short-term project organizations are seen as an alternative to carrying out corporate entrepreneurship in response to dynamically changing environments.

This study builds upon and contributes to organizational learning theory. It presents explanations about how firm-level non-local searches escalate to collaborative non-local searches. It provides empirical evidence that absorbing external resources can be an alternative way to achieve beyond firm-level non-local searches without actually leaving the firm boundary. It also shows that firm-experience in industry-level collaborative search activities can be transferred to firm level activities and contribute to the firm's competitive advantage. It presents convincing evidence that not all experience is valuable to firms and suggests that firms should be selective in absorbing the experience of others. Particularly, when firms absorb the experience of others, they should consider the fit between own experience and the experience of the others.

This study contributes to corporate entrepreneurship literature by emphasizing the potential benefits of utilizing collaborative short-term project organizations. It presents a more integrated view of the formation of temporary organizations by considering characteristics of entrepreneurial projects and resource

conditions inside and outside of the firm. It also identifies the mechanisms through which firms achieve corporate renewal. By synthesizing with organizational learning theory, it argues that entrepreneurial experience in short-term project organizations and the previous experience of external experts in acquiring new capabilities can augment firms' chances to rejuvenate themselves.

This study addresses a growing audience of mobility literature. Findings of this study are broadly consistent with existing mobility studies. Additionally, and probably more importantly, this study contributes to the literature by showing that the characteristics of target organizations in which mobility occurs are important factors for understanding mobility. Furthermore, this study presents a view that mobility is, after all, not a single event, and that mobility must be considered as a depository of experience that migrates from one organization to another.

This study has the potential to contribute to literature about exploration and exploitation. In particular, this study proposes forming collaborations between external experts and firms that take different roles in exploration and exploitation. When external experts and firms form partnerships, they can combine the exploration experience of external experts with the exploitation experience of firms. This study also provides a plausible means of balancing exploration and exploitation and safely carrying out exploration while securing the stability of on-going businesses while maximizing the benefits from new projects.

Short-term organization is a neglected topic in strategic management research. This study identified both theoretical and practical value that short-term

organizations carried. Admitting that short-term organization is a kind of inter-firm relationship, this study focused on the unique characteristics of short-term project organizations and proposed it as a means to solve problems when firms start new projects. First, short-term organizations enable firms to increase their response time to quickly opening and closing windows of opportunities. Second, short-term organizations help firms experience fast pace recombination of resources and capabilities. Thirdly, short-term organizations provide intense learning opportunities. In sum, short-term organizations are an organizational form that facilitates collective problem solving and dynamic learning experience.

This study contributed to the strategic management literature by attempting to answer a very fundamental question of why certain organizational form emerges. It redirected the attention to the most basic elements of business, organizational goal and resource conditions. Specifically, organizations that aim to create innovation are more likely to choose short-term organizations that promoted dynamic learning and collective problem solving. Increase in external availability of resources that have greater potential for innovation and change in resource allocation mechanisms due to internal resource constraints enhanced the chance of choosing short-term organization as a means to carry out innovation. This study not only theorized but also empirically showed important antecedents of short-term project organizations.

This study also contributed to the capability literature. Nobody questioned the value of capability but not many studies actually showed how capability was

acquired or built. In relation to corporate entrepreneurship literature, entrepreneurial activities are critical for corporate renewal but current literature has experienced certain limitation in theorizing how capabilities were acquired through entrepreneurship and finding the empirical evidence. This study theorized that mobility of external experts and collective learning revolving around short-term project organizations as mechanisms for capability acquisition found strong empirical evidence. Thus, by studying the consequence of short-term project organizations, this study provided an alternative explanation to the problem of capability acquisition.

Although the specific context of this study might have limited the potential generalizability of the theory and empirical evidence, it is still possible that the theory of the antecedents and consequence of short-term project organizations could be applied to many industries that value creativity and thrive upon innovations.

With two major contributions to strategic management literature, this study makes the following contributions to other fields of strategic management and organization theory.

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# APPENDIX A

## LIST OF ANIMATIONS
## (alphabetical order )

| | Title |
|---|---|
| 1 | .hack//Legend Of The Twilight |
| 2 | .hack//Roots |
| 3 | .hack//SIGN |
| 4 | 009-1 |
| 5 | Afro Samurai |
| 6 | Agatha Christie no Meitantei Poirot to |
| 7 | Ah! My Goddess |
| 8 | Ah! My Goddess: Flights of Fancy |
| 9 | Ai Yori Aoshi |
| 10 | Ai Yori Aoshi ~Enishi~ |
| 11 | Air |
| 12 | Air Gear |
| 13 | Air Master |
| 14 | Aishiteruze Baby |
| 15 | Akagi |
| 16 | Akahori Gedou Hour Rabuge |
| 17 | Allison & Lillia |
| 18 | Amaenaideyo!! |
| 19 | Amaenaideyo!! Katsu!! |
| 20 | Amatsuki |
| 21 | Angel Tales |
| 22 | Angelic Layer |
| 23 | Aquarian Age - Sign for Evolution |
| 24 | Aquarion |
| 25 | Arcade Gamer Fubuki |
| 26 | Area 88 |
| 27 | Argento Soma |
| 28 | Arjuna |

**Appendix A (continued).**

| | Title |
|---|---|
| 29 | Asatte no Houkou |
| 30 | Ashita no Nadja |
| 31 | Asobotto Senki Goku |
| 32 | Astro Boy |
| 33 | Avenger |
| 34 | Ayakashi |
| 35 | Ayakashi - Samurai Horror Tales |
| 36 | Azumanga Daioh |
| 37 | BECK: Mongolian Chop Squad |
| 38 | Babel II - Beyond Infinity |
| 39 | Baccano! |
| 40 | Bakugan Battle Brawlers |
| 41 | Bakumatsu Kikansetsu Irohanihoheto |
| 42 | Bakuten Shoot Beyblade G Revolution |
| 43 | Bakuto Sengen Daigunder |
| 44 | Bamboo Blade |
| 45 | Banner of the Stars |
| 46 | Banner of the Stars II |
| 47 | Bartender |
| 48 | Battle B-Daman: Fire Spirits |
| 49 | Battle Programmer SHIRASE |
| 50 | Beast Fighter - The Apocalypse |
| 51 | Bedaman |
| 52 | Beet the Vandel Buster |
| 53 | Best Student Council |
| 54 | Beyblade |
| 55 | Beyblade 2002 |
| 56 | Big Windup! |
| 57 | Binbou Shimai Monogatari |
| 58 | Bincho-tan |

**Appendix A (continued).**

| | Title |
|---|---|
| 59 | Black Blood Brothers |
| 60 | Black Cat |
| 61 | Black Jack |
| 62 | Black Jack 21 |
| 63 | Black Lagoon |
| 64 | Black Lagoon: The Second Barrage |
| 65 | Blassreiter |
| 66 | Blood+ |
| 67 | Blue Dragon |
| 68 | Blue Drop: Tenshi-tachi no Gikyoku |
| 69 | Bobobo-bo Bo-bobo |
| 70 | Bokura ga Ita |
| 71 | Bokurano |
| 72 | Bokusatsu Tenshi Dokuro-chan |
| 73 | Bomberman Jetters |
| 74 | Boogiepop Phantom |
| 75 | Bottle Fairy |
| 76 | Boys Be... |
| 77 | Brave King GaoGaiGar Final Grand Glorio |
| 78 | Burn-Up Scramble |
| 79 | Burst Angel |
| 80 | Bus Gamer |
| 81 | Buso Renkin |
| 82 | Buzzer Beater |
| 83 | Buzzer Beater |
| 84 | CODE-E |
| 85 | Canvas2 ~Niji-iro no Sketch~ |
| 86 | Capeta |
| 87 | Carried by the Wind: Tsukikage Ran |
| 88 | Ceres, Celestial Legend |

**Appendix A (continued).**

| | Title |
|---|---|
| 89 | Chance! Pop Sessions |
| 90 | Chi's Sweet Home |
| 91 | Chiko, Heiress of the Phantom Thief |
| 92 | Chobits |
| 93 | Chocotto Sister |
| 94 | Chrono Crusade |
| 95 | Cinderella Boy |
| 96 | Claymore |
| 97 | Cluster Edge |
| 98 | Code Geass: Lelouch of the Rebellion |
| 99 | Code Geass: Lelouch of the Rebellion R2 |
| 100 | Comic Party: Revolution |
| 101 | Cosmic Baton Girl Comet-san |
| 102 | Cosmowarrior Zero |
| 103 | Coyote Ragtime Show |
| 104 | Cromartie High School |
| 105 | D.C. ~Da Capo~ |
| 106 | D.C.II S.S. ~Da Capo II Second Season~ |
| 107 | D.C.S.S. ~Da Capo Second Season~ |
| 108 | D.Gray-man |
| 109 | D.I.C.E. |
| 110 | D.N.Angel |
| 111 | Daa! Daa! Daa! |
| 112 | Damekko Dobutsu |
| 113 | Dan Doh!! |
| 114 | Daphne in the Brilliant Blue |
| 115 | Darker than BLACK |
| 116 | DearS |
| 117 | Death Note |
| 118 | Deltora Quest |

**Appendix A (continued).**

| | Title |
|---|---|
| 119 | Demashitaa! Powerpuff Girls Z |
| 120 | Demonbane |
| 121 | Den-nouCoil |
| 122 | Descendants of Darkness |
| 123 | Desert Punk |
| 124 | Detective Loki |
| 125 | Devil May Cry |
| 126 | Di Gi Charat Nyo |
| 127 | Diamond Daydreams |
| 128 | Digimon Adventure 02 |
| 129 | Digimon Frontier |
| 130 | Digimon Tamers |
| 131 | Digimon: Data Squad |
| 132 | Dinosaur King |
| 133 | Dinozaurs: The Series |
| 134 | Divergence Eve |
| 135 | Dojin Work |
| 136 | Doki Doki Densetsu Mahoujin Guru Guru |
| 137 | Doki Doki School Hours |
| 138 | Dr. Rin ni Kiitemite! |
| 139 | Dragon Drive |
| 140 | Dragonaut - The Resonance |
| 141 | Duel Masters |
| 142 | E's Otherwise |
| 143 | Ef - a tale of memories |
| 144 | El Cazador de la Bruja |
| 145 | Elemental Gelade |
| 146 | Elfen Lied |
| 147 | Emily of New Moon |
| 148 | Emma: A Victorian Romance |

**Appendix A (continued).**

| | Title |
|---|---|
| 149 | Emma: A Victorian Romance Second Act |
| 150 | Engage Planet Kiss Dum |
| 151 | Ergo Proxy |
| 152 | Eureka Seven |
| 153 | Eyeshield 21 |
| 154 | F-Zero Falcon Densetsu |
| 155 | Fafner |
| 156 | Fantastic Children |
| 157 | Fate/stay night |
| 158 | Fighting Foodons |
| 159 | Fighting Spirit |
| 160 | Figure 17 |
| 161 | Final Approach |
| 162 | Final Fantasy: Unlimited |
| 163 | Flag |
| 164 | Fruits Basket |
| 165 | Full Metal Panic! |
| 166 | Full Metal Panic! The Second Raid |
| 167 | Full Moon O Sagashite |
| 168 | Fullmetal Alchemist |
| 169 | Futakoi |
| 170 | Futakoi Alternative |
| 171 | Futari wa Precure Splash Star |
| 172 | Futari wa Pretty Cure |
| 173 | Futari wa Pretty Cure Max Heart |
| 174 | Futatsu no Spica |
| 175 | G-On Riders |
| 176 | GUNxSWORD |
| 177 | Gad Guard |
| 178 | Gag Manga Biyori |

**Appendix A (continued).**

| | Title |
|---|---|
| 179 | Gaiking: Legend of Daikyumaryu |
| 180 | Gakuen Alice |
| 181 | Gakuen Heaven |
| 182 | Galaxy Angel |
| 183 | Galaxy Angel A |
| 184 | Galaxy Angel Rune |
| 185 | Galaxy Angel X |
| 186 | Galaxy Angel Z |
| 187 | Gallery Fake |
| 188 | Gankutsuou: The Count of Monte Cristo |
| 189 | Gantz |
| 190 | Gear Fighter Dendoh |
| 191 | Gekito! Crush Gear Turbo |
| 192 | Geneshaft |
| 193 | Genma Wars |
| 194 | Genshiken |
| 195 | Genshiken 2 |
| 196 | Getbackers |
| 197 | Getsumen To Heiki Mina |
| 198 | Ghost Hound |
| 199 | Ghost Hunt |
| 200 | Ghost Slayers Ayashi |
| 201 | Ghost Stories |
| 202 | Ghost in the Shell: Stand Alone Complex |
| 203 | Ghost in the Shell: Stand Alone Complex 2nd GIG |
| 204 | Gift ~eternal rainbow~ |
| 205 | Gilgamesh |
| 206 | Gin-iro no Olynssis |
| 207 | Ginban Kaleidoscope |
| 208 | Ginga Densetsu Weed |

**Appendix A (continued).**

| | Title |
|---|---|
| 209 | Girl's High |
| 210 | Girls Bravo |
| 211 | Glass Fleet |
| 212 | Glass Maiden |
| 213 | Glass MaskV 2005) |
| 214 | Godannar |
| 215 | Golgo 13 |
| 216 | Goshujin-sama Ninomiya-kun |
| 217 | Government Crime Investigation Agent Zaizen Jotaro |
| 218 | Grappler Baki Maximum Tournament |
| 219 | Gravion |
| 220 | Gravion Zwei |
| 221 | Gravitation |
| 222 | Great Dangaioh |
| 223 | Green Green |
| 224 | Grenadier |
| 225 | Gungrave |
| 226 | Gunparade March |
| 227 | Gunparade Orchestra |
| 228 | Gunslinger Girl |
| 229 | Gunslinger Girl -Il Teatrino- |
| 230 | Guyver: The Bioboosted Armor |
| 231 | H2O ~Footprints in the Sand~ |
| 232 | Haibane Renmei |
| 233 | Hakaba Kitar? |
| 234 | Hamtaro |
| 235 | Hanada Shonen-shi |
| 236 | Hanaukyo Maid Team: La Verite |
| 237 | Hanbun no Tsuki ga Noboru Sora |
| 238 | Hand Maid May |

**Appendix A (continued).**

| | Title |
|---|---|
| 239 | Happiness! |
| 240 | Happy Lesson |
| 241 | Happy Seven |
| 242 | Haruka: Beyond the Stream of Time |
| 243 | Hare+Guu |
| 244 | Hataraki Man |
| 245 | Hatenkou Yugi |
| 246 | Hayate the Combat Butler |
| 247 | He is my Master |
| 248 | Heat Guy J |
| 249 | Hell Girl |
| 250 | Hellsing |
| 251 | Heroic Age |
| 252 | Hi no Tori |
| 253 | Higurashi no Naku Koroni Kai |
| 254 | Hikaru no Go |
| 255 | Himawari! |
| 256 | Himawari!! |
| 257 | Hime-sama Goyojin |
| 258 | Hit wo Nerae! |
| 259 | Hitohira |
| 260 | Honey and Clover |
| 261 | Honey and Clover II |
| 262 | Hoop Days |
| 263 | Hungry Heart - Wild Striker |
| 264 | Ichigo 100% |
| 265 | Idaten Jump |
| 266 | Ikki Tousen |
| 267 | Ikkitousen: Dragon Destiny |
| 268 | Immortal Grand Prix |

**Appendix A (continued).**

| | Title |
|---|---|
| 269 | Initial D: Fourth Stage |
| 270 | Innocent Venus |
| 271 | Inukami! |
| 272 | Inuyasha |
| 273 | Izumo: Takeki Tsurugi no Senki |
| 274 | Jagainu-kun |
| 275 | Jigoku Shoujo Futakomori |
| 276 | Jing: King of Bandits |
| 277 | Jubei-Chan 2: The Counter Attack of Siberia Yagyu |
| 278 | Junjo Romantica |
| 279 | Juusou Kikou Dancouga Nova |
| 280 | Jyu Oh Sei |
| 281 | Jyu shin Enbu - Hero Tales |
| 282 | Kage kara Mamoru! |
| 283 | Kaiba |
| 284 | Kaiji |
| 285 | Kakyuusei 2 |
| 286 | Kamen no Maid Guy |
| 287 | Kamichama Karin |
| 288 | Kamichu! |
| 289 | Kamisama Kazoku |
| 290 | Kannazuki no Miko |
| 291 | Kanokon |
| 292 | KanonV 1 |
| 293 | KanonV 2 |
| 294 | Karin |
| 295 | Kasimasi - Girl Meets Girl |
| 296 | Kaze no Stigma |
| 297 | Kaze no Yojimbo |
| 298 | Kekkaishi |

**Appendix A (continued).**

| | Title |
|---|---|
| 289 | Kamisama Kazoku |
| 290 | Kannazuki no Miko |
| 291 | Kanokon |
| 292 | KanonV 1 |
| 293 | KanonV 2 |
| 294 | Karin |
| 295 | Kasimasi - Girl Meets Girl |
| 296 | Kaze no Stigma |
| 297 | Kaze no Yojimbo |
| 298 | Kekkaishi |
| 299 | Kemonozume |
| 300 | KenIchi the Mightiest Disciple |
| 301 | Kenko Zenrakei Suieibu Umisho |
| 302 | Kiba |
| 303 | Kiddy Grade |
| 304 | Kidou Shinsengumi Moeyo Ken |
| 305 | Kikaider |
| 306 | Kikou Sen'nyo Rouran |
| 307 | Kimi ga Aruji de Shitsuji ga Ore de |
| 308 | Kimikiss pure rouge |
| 309 | Kino's Journey |
| 310 | Kishin Taisen Gigantic Formula |
| 311 | Kodomo no Jikan |
| 312 | Kogepan |
| 313 | Koi Kaze |
| 314 | Koi Koi Seven |
| 315 | Koi suru Tenshi Angelique |
| 316 | Kokoro Library |
| 317 | Kono Aozora ni Yakusoku wo |
| 318 | Kotetsushin Jeeg |

**Appendix A (continued).**

| | Title |
|---|---|
| 319 | Koutetsu Sangokushi |
| 320 | Kujibiki Unbalance |
| 321 | Kurau: Phantom Memory |
| 322 | Kure-nai |
| 323 | Kyo kara Maoh! |
| 324 | L/R: Licensed by Royalty |
| 325 | Lamune |
| 326 | Last Exile |
| 327 | Le Chevalier D'Eon |
| 328 | Legendz: Yomigaeru Ryuuou Densetsu |
| 329 | Lemon Angel Project |
| 330 | Les Miserables - Shoujo Cosette |
| 331 | Library War |
| 332 | Lime-iro Ryuukitan X |
| 333 | Lime-iro Senkitan |
| 334 | Love Hina |
| 335 | Lovedol ~Lovely Idol~ |
| 336 | Lovege Chu ~Miracle Seiyuu Hakusho~ |
| 337 | Loveless |
| 338 | Lovely Complex |
| 339 | Lucky Star |
| 340 | Maburaho |
| 341 | Macross Frontier |
| 342 | Madlax |
| 343 | Magical Girl Lyrical Nanoha |
| 344 | Magical Girl Lyrical Nanoha A's |
| 345 | Magical Girl Lyrical Nanoha Striker |
| 346 | Magical Kanan |
| 347 | Magical Meow Meow Taruto |
| 348 | Magical Shopping Arcade Abenobashi |

**Appendix A (continued).**

| | Title |
|---|---|
| 349 | Magikano |
| 350 | Mahoraba ~Heartful days~ |
| 351 | Mahoromatic - Automatic Maiden |
| 352 | Mahoromatic: Something More Beautiful |
| 353 | Majin Tantei Nogami Neuro |
| 354 | Major |
| 355 | Makai Senki Disgaea |
| 356 | Mamoru-kun ni Megami no Shukufuku wo! |
| 357 | Mao-chan |
| 358 | MapleStory |
| 359 | Maria Watches Over Us |
| 360 | Maria-sama ga Miteru ~Haru~ |
| 361 | Mars Daybreak |
| 362 | Master of Epic: The Animation Age |
| 363 | Medarot Damashii |
| 364 | MegaMan NT Warrior |
| 365 | Megaman Star Force |
| 366 | Meine Liebe |
| 367 | Mermaid Forest |
| 368 | Mermaid Melody: Pichi Pichi Pitch |
| 369 | Mezzo |
| 370 | Miami Guns |
| 371 | Midori Days |
| 372 | Minami-ke |
| 373 | Minami-ke: Okawari |
| 374 | Mirage of Blaze |
| 375 | Mirmo Zibang! |
| 376 | Misaki Chronicles |
| 377 | Mobile Suit Gundam 00 |
| 378 | Mobile Suit Gundam Seed |

**Appendix A (continued).**

| | Title |
|---|---|
| 379 | Mobile Suit Gundam Seed Destiny |
| 380 | Moetan |
| 381 | Mokke |
| 382 | Mon Colle Knights |
| 383 | Mononoke |
| 384 | Monster |
| 385 | MoonPhase |
| 386 | Moonlight Mile |
| 387 | Moribito - Guardian of the Spirit |
| 388 | Mouse |
| 389 | Mo~tto! Ojamajo Doremi |
| 390 | Mujin Wakusei Survive |
| 391 | Mushi-Shi |
| 392 | Mushi-Uta |
| 393 | Mushrambo |
| 394 | My-HiME |
| 395 | My-Otome |
| 396 | Myself ; Yourself |
| 397 | MAR |
| 398 | NANA |
| 399 | Nabari no Oh |
| 400 | Nanaka 6/17 |
| 401 | Nanatsuiro Drops |
| 402 | Naruto |
| 403 | Negima! |
| 404 | Nerima Daikon Brothers |
| 405 | NieA_7 |
| 406 | Night Head Genesis |
| 407 | Night Wizard The Animation |
| 408 | Ninja Nonsense |

**Appendix A (continued).**

| | Title |
|---|---|
| 409 | Ninja Scroll |
| 410 | Nishi no Yoki Majo - Astraea Testament |
| 411 | Nodame Cantabile |
| 412 | Noein - to your other self |
| 413 | Noir |
| 414 | Oban Star-Racers |
| 415 | Oh! Edo Rocket |
| 416 | Ojamajo Doremi # |
| 417 | Ojamajo Doremi DOKKAAN! |
| 418 | Oku-sama wa Joshi Kousei |
| 419 | Okusama wa Maho Shojo |
| 420 | Onmyou Taisenki |
| 421 | Otogi Zoshi |
| 422 | Otogi-Jushi Akazukin |
| 423 | Ouran High School Host Club |
| 424 | Over Drive |
| 425 | Overman King Gainer |
| 426 | Pani Poni Dash! |
| 427 | Panyo Panyo Di Gi Charat |
| 428 | Paradise Kiss |
| 429 | Parappa the Rapper |
| 430 | Patapata Hikousen no Bouken |
| 431 | Peacemaker |
| 432 | Peach Girl |
| 433 | Persona -trinity soul- |
| 434 | Petite Princess Yucie |
| 435 | PetoPeto-san |
| 436 | Piano |
| 437 | Pilot Candidate |
| 438 | Planetes |

**Appendix A (continued).**

| | Title |
|---|---|
| 439 | Platinumhugen Ordian |
| 440 | Please Teacher! |
| 441 | Please Twins! |
| 442 | PoPoLoCrois |
| 443 | Pokemon Advance |
| 444 | Potemayo |
| 445 | Princess Princess |
| 446 | Princess Resurrection |
| 447 | Prism Ark |
| 448 | Project ARMS |
| 449 | Project Blue Earth SOS |
| 450 | Pugyuru |
| 451 | Pumpkin Scissors |
| 452 | R.O.D -The TV- |
| 453 | RahXephon |
| 454 | Ramen Fighter Miki |
| 455 | Rave Master |
| 456 | Ray |
| 457 | Real Drive |
| 458 | Red Garden |
| 459 | Reideen |
| 460 | Rental Magica |
| 461 | Requiem from the Darkness |
| 462 | Ring ni Kakero |
| 463 | Ring ni Kakero 1: Nichibei Kessen Hen |
| 464 | Robonimal Panda-Z: The Robonimation |
| 465 | Rocket Girls |
| 466 | Rockman.EXE Axess |
| 467 | Rockman.EXE Beast |
| 468 | Rockman.EXE Stream |

**Appendix A (continued).**

| | Title |
|---|---|
| 469 | Romeo x Juliet |
| 470 | Rosario + Vampire |
| 471 | Rozen Maiden |
| 472 | Rozen Maiden: Tr채umend |
| 473 | Rumbling Hearts |
| 474 | Rumiko Takahashi Anthology |
| 475 | Run=Dim |
| 476 | Rune Soldier |
| 477 | Ryusei Sentai Musumet |
| 478 | S.A |
| 479 | Sadamitsu the Destroyer |
| 480 | SaiKano |
| 481 | Saint Beast |
| 482 | Saiyuki |
| 483 | Saiyuki Gunlock |
| 484 | Saiyuki Reload |
| 485 | Sakura Wars |
| 486 | Salaryman Kintaro |
| 487 | Samurai Champloo |
| 488 | Samurai Deeper Kyo |
| 489 | Samurai Gun |
| 490 | Sasami: Magical Girl Club |
| 491 | Save Me! Lollipop |
| 492 | School Days |
| 493 | School Rumble |
| 494 | School Rumble Nigakki |
| 495 | Seto no Hanayome |
| 496 | Seven of Seven |
| 497 | Shakugan no Shana |
| 498 | Shakugan no Shana Second |

**Appendix A (continued).**

| | Title |
|---|---|
| 499 | Shaman King |
| 500 | Shattered Angels |
| 501 | Shigofumi: Letters from the Departed |
| 502 | Shingu: Secret of the Stellar Wars |
| 503 | Shinigami no Ballad: momo the girl god |
| 504 | Shining Tears X Wind |
| 505 | Shinseikiden Mars |
| 506 | Shion no Oh |
| 507 | Shonen Onmyouji |
| 508 | Shuffle! |
| 509 | Shuffle! Memories |
| 510 | Shugo Chara! |
| 511 | Shura no Toki |
| 512 | Shutsugeki! Machine Robo Rescue |
| 513 | Simoun |
| 514 | Sister Princess |
| 515 | Sister Princess: Re Pure |
| 516 | Sisters of Wellber |
| 517 | Sketchbook ~full color'S~ |
| 518 | Sky Girls |
| 519 | Solty Rei |
| 520 | Someday's Dreamers |
| 521 | Sonic X |
| 522 | Soul Eater |
| 523 | Soul Link |
| 524 | Speed Grapher |
| 525 | Spice and Wolf |
| 526 | Spider Riders |
| 527 | Spiral |
| 528 | Star Ocean EX |

**Appendix A (continued).**

| | Title |
|---|---|
| 529 | Starship Operators |
| 530 | Steel Angel Kurumi 2 |
| 531 | Stellvia |
| 532 | Stratos 4 |
| 533 | Strawberry Eggs |
| 534 | Strawberry Marshmallow |
| 535 | Strawberry Panic! |
| 536 | Submarine Super 99 |
| 537 | Sugar Sugar Rune |
| 538 | Sugar: A Little Snow Fairy |
| 539 | Sukisho |
| 540 | Sumomomo Momomo |
| 541 | Super GALS |
| 542 | Super Kuma-san |
| 543 | Super Robot Wars OG Divine Wars |
| 544 | Suteki Tantei Labyrinth |
| 545 | Suzuka |
| 546 | Sweet Valerians |
| 547 | Tactical Roar |
| 548 | Tactics |
| 549 | Tales of Agriculture |
| 550 | Tales of Eternia |
| 551 | Tantei Gakuen Q |
| 552 | Tenchi Muyo! GXP |
| 553 | Tengen Toppa Gurren Lagann |
| 554 | Tenjho Tenge |
| 555 | Tenshi na Konamaiki |
| 556 | Tenshi no Shippo Chu! |
| 557 | Tetsujin 28th |
| 558 | The Cosmopolitan Prayers |

**Appendix A (continued).**

| | Title |
|---|---|
| 559 | The Daichis - Earth Defence Family |
| 560 | The Familiar of Zero |
| 561 | The Galaxy Railways |
| 562 | The Law of Ueki |
| 563 | The Melancholy of Haruhi Suzumiya |
| 564 | The Melody of Oblivion |
| 565 | The Prince of Tennis |
| 566 | The Skull Man |
| 567 | The SoulTaker |
| 568 | The Story of Saiunkoku |
| 569 | The Story of Saiunkoku Second Series |
| 570 | The Super Milk-chan Show |
| 571 | The Third: The Girl with the Blue Eye |
| 572 | The Tower of Druaga: the Aegis of Uruk |
| 573 | The Twelve Kingdoms |
| 574 | The Wallflower |
| 575 | The World of Narue |
| 576 | This Ugly Yet Beautiful World |
| 577 | To Love-Ru |
| 578 | ToHeart - Remember my memories |
| 579 | ToHeart2 |
| 580 | Tokimeki Memorial ~Only Love~ |
| 581 | Tokko |
| 582 | Tokyo Mew Mew |
| 583 | Tokyo Tribe 2 |
| 584 | Tokyo Underground |
| 585 | Touka Gettan |
| 586 | Transformers: Armada |
| 587 | Transformers: Cybertron |
| 588 | Transformers: Energon |

**Appendix A (continued).**

| | Title |
|---|---|
| 589 | Transformers: Robots in Disguise |
| 590 | Trinity Blood |
| 591 | Tsubasa: RESERVoir CHRoNiCLE |
| 592 | Tsukihime, Lunar Legend |
| 593 | Tsuyokiss - Cool x Sweet |
| 594 | Tweeny Witches |
| 595 | UFO Ultramaiden Valkyrie |
| 596 | Ultimate Girls |
| 597 | Ultimate Muscle |
| 598 | Ultra Maniac |
| 599 | Uta~Kata |
| 600 | Vampire Knight |
| 601 | Vampiyan Kids |
| 602 | Vandread |
| 603 | Vandread: The Second Stage |
| 604 | Venus Versus Virus |
| 605 | Viewtiful Joe |
| 606 | Wagaya no Oinarisama. |
| 607 | Wandaba Style |
| 608 | Wangan Midnight |
| 609 | Welcome to the NHK |
| 610 | When They Cry - Higurashi |
| 611 | Wind: A Breath of Heart |
| 612 | Windy Tales |
| 613 | Witch Hunter Robin |
| 614 | Witchblade |
| 615 | Wolf's Rain |
| 616 | W~Wish |
| 617 | X |
| 618 | XXXHOLiC |

**Appendix A (continued).**

| | Title |
|---|---|
| 619 | Xenosaga: The Animation |
| 620 | Yakitate!! Japan |
| 621 | Yami to Boshi to Hon no Tabibito |
| 622 | Yes! Precure 5 |
| 623 | Yomigaeru Sora - RESCUE WINGS - |
| 624 | Yoshimune |
| 625 | Yoshinaga-san'chi no Gargoyle |
| 626 | You're Under Arrest Second Season |
| 627 | You're Under Arrest: Full Throttle |
| 628 | Yu-Gi-Oh! Duel Monster GX |
| 629 | Yugo the Negotiator |
| 630 | Yumeria |
| 631 | Zaion: I Wish You Were Here |
| 632 | Zatch Bell |
| 633 | Zegapain |
| 634 | Zero no Tsukaima: Futatsuki no Kishi |
| 635 | Zettai Seigi Love Pheromone |
| 636 | Zettai Shonen |
| 637 | Zipang |
| 638 | Zoids Genesis |
| 639 | Zoids/ZERO |
| 640 | Zoku Sayonara Zetsubo Sensei |
| 641 | Zombie-Loan |
| 642 | iDOLM@STER: XENOGLOSSIA |
| 643 | s-CRY-ed |
| 644 | true tears |
| 645 | xxxHOLiC: Kei |

# APPENDIX B

## LIST OF ANIMATION STUDIOS
## (alphabetical order)

| | Company Name |
|---|---|
| 1 | 81 Produce |
| 2 | A.C.G.T. |
| 3 | Actas |
| 4 | AIC |
| 5 | Aniplex |
| 6 | Answer Studio |
| 7 | Arms |
| 8 | Artland |
| 9 | Asahi Production |
| 10 | Asia-Do |
| 11 | Asread |
| 12 | Bandai Visual |
| 13 | Beat Frog |
| 14 | Bee Train |
| 15 | Bones |
| 16 | Brain's Base |
| 17 | Diomedea |
| 18 | Dogakobo |
| 19 | E&G Films |
| 20 | Front Line |
| 21 | Gainax |
| 22 | Gansis |
| 23 | Genco |
| 24 | Gonzo |
| 25 | Group TAC |
| 26 | Hal Film Maker |
| 27 | Idea Factory |
| 28 | Imagin |

**Appendix B (continued).**

| | Company Name |
|---|---|
| 29 | Ishimori Entertainment |
| 30 | J.C. Staff |
| 31 | Kyoto Animation |
| 32 | Madhouse |
| 33 | Magicbus |
| 34 | Manglobe |
| 35 | Mdeiaworks |
| 36 | Mook Animation |
| 37 | Nippon Animation |
| 38 | Nomad |
| 39 | OLM Digital |
| 40 | Omnibus Japan |
| 41 | Palm Company |
| 42 | Planet Entertainment |
| 43 | Production I.G. |
| 44 | Production Reed |
| 45 | Pure Magic |
| 46 | Radix |
| 47 | Robot |
| 48 | Satelight |
| 49 | Seven Arcs |
| 50 | Shogakukan Music & Digital Entertainmen |
| 51 | Soft Garage |
| 52 | Studio Comet |
| 53 | Studio Deen |
| 54 | Studio Egg |
| 55 | Studio Fantasia |
| 56 | Studio Flag |
| 57 | Studio Gallop |
| 58 | Studio Hibari |

**Appendix B (continued).**

| | Company Name |
|---|---|
| 59 | Studio Izena |
| 60 | Studio Kyuma |
| 61 | Studio Matrix |
| 62 | Studio Pierrot |
| 63 | Studio Plum |
| 64 | STUDIO4℃ |
| 65 | Sunrise |
| 66 | Tatsunoko |
| 67 | Telecom Animation Film |
| 68 | Tezuka Productions |
| 69 | TMS |
| 70 | TNK |
| 71 | Toei |
| 72 | Tokyo Kids |
| 73 | Trans Art |
| 74 | Triangle Staff |
| 75 | Two Thousand Creators.com |
| 76 | ufotable |
| 77 | Vega Entertainment |
| 78 | Viewworks |
| 79 | We've Inc |
| 80 | Wonder Farm |
| 81 | Xebec M2 |
| 82 | Yumeta |
| 83 | Zexcs |