Velocity shifts in the creative economy: incumbent-entrant dynamics in the emergence of Japanese social games

Mirko Ernkvist*
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Abstract:
The Japanese innovation system has been characterized as more prone to disruptive innovation by incumbent firms rather than de novo entrepreneurial entrants (H. W. Chesbrough, 1999). We draw upon the notion that creative industry competition in a high velocity environment is fundamentally different from an environment of more moderate velocity, exploring the notion that velocity shifts following disruptive innovation could be a key underlying mechanism for transformation by entrants in institutional settings that favor incumbents. A higher velocity environment provides a cognitive barrier to incumbent firms’ R&D by making established design heuristics obsolete, introducing novel market analytic methods and shifting established industry logics towards speed, constant iteration and services. The velocity shift in the transition from video games to social games required new specialized assets and new ways of accessing customer preferences though real-time data mining techniques that also challenged engrained cognitive frames of how game design should be pursued. Unlike previous disruptive innovation in the game industry, social games enabled new entrants to rapidly become market leaders. The case points towards a more nuanced view of the influence of disruptive innovation during velocity shifts in creative industries. For studies of technological entrepreneurship, this implies that the velocity shifts following disruptive innovation could provide a previously overlooked important mechanism in understanding how entrants have been able to challenge incumbent firms in Japan.

Keywords: disruptive innovation, social games, velocity shifts, industry emergence

JEL codes: N85, O32, L26, L82, M12

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1 Introduction

As a multidimensional concept, the velocity of an industry shifts refer to the interrelated rate and direction of changes in product introduction, technologies, demand, competitors and/or regulation of an industry (for an overview, see McCarthy, Lawrence, Wixted, & Gordon, 2010). In previous studies, discontinuous technological change has frequently been identified as a potential key catalyst for velocity shifts that could alter both the speed and direction of change (Brown & Eisenhardt, 1997).

It has been proposed that velocity has become more important for competitiveness in the creative economy (Florida, 2011). This is perhaps most notable in the “digital native” sectors of the creative industries where discontinuous technological shifts have spurred new directions and rate of change. For example, design visualization and rapid prototyping have increased the rate and direction of product development, data analytics of users have enabled rapid iteration, monetization and service offerings of customers and the shift to internet services have increased velocity of IP development and appropriation (Dobusch & Schüßler, 2013). However, there is a prevailing gap in existing literature regarding how these discontinuous technology driven velocity shifts have affected incumbent and entrant industry dynamics in creative industry settings.

There is a large body of literature that has analyzed how factors that affect incumbent-entrant competitive dynamics during discontinuous innovation (Ansari & Krop, 2012; Danneels, 2004; Yu & Hang, 2010). More recently, incumbent-entrant analysis of discontinuous technological shifts has been conducted on creative industries. These studies imply that cognitive lock-ins are more important than technological lock-ins in creative industries, with incumbents experiencing cognitive lock-in in existing IP regimes, mental model of the value chain and existing interpretative frames of customers (Dobusch & Schüßler, 2013; Hadida & Paris, 2014; Mangematin, Sapsed, & Schüßler, 2014). Entrant firms have key role in introducing novel business models during these technological discontinuities by challenging established industry practices and contesting dominant industry logics (Hadida & Paris, 2014). At the same time, these studies also depict the barriers for entrants to introduce new business models in creative industries due to entrant’s possession of key complementary assets in the form of IP, control of the existing value chains and the lengthy process for reformist business model claims to gain legitimacy over the incumbents conservative claims. The mediating conditions that could enable entrants to rapidly transform established creative industries despite these barriers remain poorly understood.

1.1 Aim of the paper

The aim of this paper is to study how the velocity shift to social games in the Japanese game industry affected entrant-incumbent dynamics. It compares and contrast the response of incumbent and entrant firms to the shift to social games. The game industry provides a particularly suitable case to study velocity shifts in creative industries, with the high velocity discontinuous to social games enabling a shift in both the rate and direction of change in the industry. We propose that (i) the velocity shift following technological discontinuities provide an important, overlooked catalyst for entrant entrepreneurial transformation of creative industries, and that (ii) this could open up new opportunities for entrants even in national institutional contexts where existing financial barriers, business-
supplier relationships and low labor mobility have provided barriers for entrant entrepreneurship.

For the present study we are especially interested in a subset of the incumbent-entrant literature that link incumbent-entrant dynamics to the institutional environment, seen as key explanatory mechanism for incumbent’s advantages in relation to entrants in Japan. In a related research stream on complementary assets, research has also focused on how complementary assets could buffer incumbent firms from entrants during discontinuous technological shifts. Considering that complementary assets in the form of intellectual property provide a key asset for incumbent firms in creative industries, their role in is highly relevant in analyzing incumbent-entrant dynamics in the creative economy. These two research streams share the common assumption that disruptive technological shifts in Japan and industries where incumbent possess complementary assets are likely to provide advantages for incumbent firms over entrants. This paper challenges and modify some of these assumption though an empirical case study of the Japanese game industry’s shift to SG (social games). We propose that the shift towards a high velocity environment and the coupled nature of game IP’s as complementary assets with an interpretative frame of game development methodology from the video game industry were two previously overlooked aspects of the disruptive shift that enabled entrant firms to gain an advantage over incumbent video game firms in the shift to social games. We argue that the velocity shift influenced incumbent-entrant dynamics so that institutional factors that have been biased towards incumbent firms either turned into liabilities or diminished in influence.

The paper is organized as follows. Second 2 examines the existing incumbent-entrant literature for the Japanese context and connect it to the velocity of the game industry. Section 3 presents our research design and data collection. Section 3 describes the Japanese game industry before and during the disruptive shift to social games. Section 4 analyzes the incumbent-entrants response to the social games disruption. Section 5 summarizes the conclusions from the paper and its implication for the creative industry literature

2 Literature on incumbent-Entrant dynamics in Japan during technological shifts

2.1 Disruptive innovation and incumbent advantages over entrants in the Japan

Following the theory of disruptive innovation (C. M. Christensen & Bower, 1996), some studies have focused on how characteristics of the surrounding institutional environment of the firms could have an important influence on incumbent versus entrant dynamics following disruptive innovation. Notably, certain institutional characteristics could limit the available repertoire of strategies available for incumbents and entrants. Japan has struggled in the effort to promote entrepreneurial de novo startups, with previous studies pointing out both informal and formal institutional entrepreneurship barriers (Ibata-Arens, 2008; Lynskey, 2004; C. Storz, 2008b). The Japanese innovation system stands out as an example among developed nation in its bias of towards large incumbent firms over de novo startups in the innovation process. Some aspects of the Japanese institutional system put forward as favoring large incumbent firms are the importance of long-term business relationships, in-house R&D, low degree of employee mobility, financing biased towards
larger firms and a cooperative form of capitalism with relatively high entrant barriers for new entrants (Dore, 1986; Ibata-Arens, 2008; Jackson & Debroux, 2008; Lynskey, 2004; Motohashi, 2008; Schaede, 2000; C. Storz, 2008a). These perceived challenges for new entrants are also reflected in the data for Japanese entrepreneurship: during the last decade, Japan has ranked lowest among the countries in the Global Entrepreneurship Monitor in terms of total entrepreneurship activity and the perceived opportunities, intention and capabilities for entrepreneurship among its population (Hoshino, 2013).

Despite these national-level characteristics, there also appears to be some exemptions to this pattern when the analytical lens shifts to specific industry sectors in Japan. A recent study have e.g. pointed out examples of successful entrepreneurial startups in Japan among internet companies and mobile internet services (Kushida, 2012). The mechanism and factors contributing to the de novo startup disruption in these sectors still remains largely unexplored. We believe that a closer case study of incumbent-entrant dynamics in these sectors could provide valuable lessons of the entrants curse for disruptive innovation in Japan and provide some indications of what conditions that could enable entrant firms to challenge incumbents. From a larger perspective, the case also relate to the question of if and how this selected new pattern indicates a change that is likely to be followed in other technology intensive Japanese industries or if it is a pattern that is highly context specific.

Given these characteristics of the Japanese innovation system, it is not surprising that innovation in Japan are more likely to be pursued by incumbent firms than startups even for disruptive innovation, a category of innovation that in other national institutional contexts has enabled the successful entrance of entrant firms (Ansari & Krop, 2012). The most thorough empirical support for this argument comes from the national comparisons of the disk drive industry; i.e. the industry that provided the original foundation for the theory of disruptive innovation. Unlike for U.S. disk drive firms where incumbent firms leadership was displaced by entrants during disruptive generational shifts, Japanese incumbents preserved their industrial leadership despite new generations of disruptive innovation (H. Chesbrough, 1999; H. W. Chesbrough, 1999; Chesbrough, 2003). In explaining this comparative differences, Chesbrough argued that three key institutional characteristics of the Japanese innovation system provided incumbent advantages over de novo entrants during disruption: (1) the underdeveloped venture capital market, (2) lack of labor mobility and (3) close buyer-supplier relationships. These characteristics in resource configuration of Japan acted as institutional constraints, limiting the menu of available configuration options available to entrants firms managerial response to disruptive innovation (Chesbrough, 2003). In a Japanese context where de novo entrants faced higher barrier to access expert skills, risk capital and customers (viz. incumbents), Japanese incumbents were more likely than their U.S. counterparts to eventually enter the new disruptive market and were more successful after entrance. The story is one of institutional lock in by incumbent where initial conditions of access to labor, capital and supplier have a “path dependent effect over the firm’s solution to subsequent entry decisions” into new, disruptive markets (Chesbrough, 2003, p. 662).

2.2 Specialized complementary assets and incumbent-entrant dynamics
Specialized complementary assets have also been found to be an advantage for incumbent firms during disruptive technological shifts by buffering incumbent firms from the competition of new entrants (Tripsas, 1997b). As an example, incumbent typesetter firms
with access to specialized complementary assets in the form of font libraries were able to successfully make discontinuous shift due to the value retained by these assets during technological shifts (Tripsas, 1997b). More recently, it has been proposed that specialized complementary assets not only act as an ex-post buffering for incumbent firms during discontinuous innovation, but also as an ex-ante cognitive frame that shapes how incumbent firms interpret the magnitude of their resource allocation and the direction of their technological trajectory (Wu, Wan, & Levinthal, 2013). As a cognitive frame, incumbents complementary assets could “induce the incumbent to choose a technical trajectory that can leverage its complementary assets but may be inherently less promising” (Wu et al., 2013).

In the context of creative industries, recent studies also support the notion that incumbents specialized complementary assets in the form of game IP’s both act as buffering and cognitive frame during technological discontinuities. The discontinuous shift to digital music provides an example of this. For example, the existing IP ownership by major incumbent music companies to some degree buffered them from the immediate competitive threats of entrants with novel business models. At the same time, incumbent also retained conservative cognitive frames that leveraged their existing IP’s during the discontinuous period, despite the proliferation of technologically promising reformist business models (Dobusch & Schüßler, 2013). These conservative and reformist business model interpretation remained relatively stable throughout a long period, with little active debate between conservative and reformist groups.

In creative industries with strong IP franchises spanning many products, conservative interpretation are reinforced by both producers and core users conservative view regarding how the use of IP in discontinuous new business model could risk the long term economic and cultural value of their IP’s (Maurer, 2008). Due to the culturally embedded nature of these IP’s, novel uses of IP’s are often interpreted based on their past uses by producers.

2.3 Predictions of competitive outcomes: a synthesis
Disruptive innovation in the Japanese industry and the theory of specialized complementary assets both provides a context in where Japanese incumbent firms are predicted to have an advantage over entrants. In the case of disruptive innovation, by drawing on a more advantageous institutional setting for labor, capital and customers that provides high entrance barriers for entrants. In the case of specialized complementary assets such as IP’s, by buffering incumbent firms from new entrants. Hence, the general prediction is that in a Japanese setting, industry incumbents will successfully manage technological discontinuities that are both disruptive and retain the value of their specialized complementary assets.

2.4 Velocity shifts and incumbent-entrant dynamics
Extant literature on high velocity environment have emphasized that they require different strategic decision-making, with increased emphasis on fast decision making processes, firm adaptation and product innovation (Brown & Eisenhardt, 1997; Eisenhardt & Tabrizi, 1995). Less is known how a high velocity shift in an existing industry affects incumbents-entrant dynamics. We explore the novel concept that discontinuous technological shifts that are accompanied by a shift to high velocity environment have a systemic influence that could shift incumbent-entrant dynamics in the favor of the later by (i) decreasing institutional
barriers for entrants and (ii) altering the role of complementary assets role as buffering and interpretative prisms in creative industries.
Figure 1: Velocity shift and associated shift in institutional barriers and cognitive frames

<table>
<thead>
<tr>
<th>Video Games: Medium velocity</th>
<th>Social Games: High velocity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional barriers for entrances</td>
<td>Institutional barriers for entrances</td>
</tr>
<tr>
<td><strong>Financial:</strong> High Video game publisher dominated financing</td>
<td><strong>Financial:</strong> Low Booking Attractive for venture capital</td>
</tr>
<tr>
<td><strong>Labor-market barriers:</strong> Medium Disruptive market of established game producers</td>
<td><strong>Labor-market barriers:</strong> Low New game producer from Scratch</td>
</tr>
<tr>
<td><strong>Supplier relationships:</strong> Medium Long-term relationships incumbent VG publishers and developers</td>
<td><strong>Supplier relationships:</strong> New Formation of new relationships. Telecom operators, data analytics &amp; 5G marketing</td>
</tr>
<tr>
<td>Creator driven: Based on engrained interpretative frames of game producers</td>
<td>Analysis driven development: Based on data-driven analysis</td>
</tr>
<tr>
<td>Development focus: Polishing of product over long development cycles</td>
<td>Development focus: Rapid development cycles; polishing during operation</td>
</tr>
<tr>
<td>User feedback: More based on interpretative enactment than analysis</td>
<td>User feedback: Data driven real-time analysis &amp; monetization and marketing</td>
</tr>
</tbody>
</table>
2.4.1 Velocity shifts and institutional barriers

2.4.1.1 Financing
Creative industry production have traditionally been characterized by a significant degree of pre-market uncertainty and high sunk-costs in development (Caves, 2000). Coupled, these factors have contributed to the financial advantages for major incumbent game companies in the video game industry though their financial resources and vertical control of the value chain (publishing, marketing, distribution). We propose that a shift to high velocity in the Japanese social game industry lowered the financial barriers for entrants by three mechanisms: lowering game development time and cost, making physical distribution obsolete and by making the industry attractive for venture capital and bootstrap funding.

2.4.1.2 Labor
The uncertainty of creative industry production have traditionally created an A list/B list of vertically differentiated skills (Caves, 2000), with a demand for a small subset of “star” creative labors with the cognitive skills to discern and create unique IP's. In the game industry, this has traditionally been reflected in the role of a subset of incumbent’s game producers and their role in the financial performance new game IP's (Mollick, 2012). In line with the general characteristics of the Japanese innovation system, labor mobility in the Japanese video game industry has been significantly lower than the US during the last decade (Cornelia Storz, Riboldazzi, & John, 2014). Within the Japanese video game industry, these low mobility pattern contributed to the accumulation of firm-specific human capital and innovativeness of games could increase though the systemic knowledge labors gained by moving between different functions within existing incumbent firms (Cornelia Storz et al., 2014). We propose that the high velocity shift to social games business model provided a cognitive discontinuity to existing video game production practices though two mechanisms: the cognitive shift from an interpretative to analysis based game development and a shift from long development cycles focused on polished, finished content to short development cycles focused on short development cycles with continuous development during operational service.

2.4.1.3 Supplier relationships
The video game industry has been characterized by relatively stable, long-term relationships between video game platforms and developers (Inoue & Nagayama, 2011), as well as between publishers and the developers (Balland, De Vaan, & Boschma, 2013). While the number of suppliers of software applications and digital tools for game development has increased during the last decades (Panourgias, Nandhakumar, & Scarbrough, 2014), we find that the Japanese video game industry largely have been reliant on in-house developed tools. Previous studies have found that high velocity environment are characterized by more heterogeneous network due to the need of firms to rapidly respond to changes (Nadkarni & Narayanan, 2007) We propose that the the high velocity shift to social games provided a discontinuous shift in supplier relationship, making some existing supplier relationships obsolete and created the need for the formation of new supplier relationships.

2.4.2 Velocity shifts and complementary assets
During technological platform shifts in the game industry, complementary
assets in the form of game IP’s had a dual role for incumbents as buffering and interpretative prisms. For example, existing IP’s a has been key factor in enabling Nintendo to retain market dominance in an industry with characterized by recurrent efforts by new entrant to enter the industry during these shifts (Peltoniemi, 2009). At the same time, the Nintendo’s IP has also provided a key interpretative prism during several of these shifts. For example, Nintendo’s IP process with close interaction between hardware and software development was instrumental in the how the company interpreted new forms of gameplay interaction with the Nintendo Wii during the shift to the 7th generation of video game consoles (2006-2007) (Ernkvist, 2012; Jones & Thiruvathukal, 2012; Subramanian, Chai, & Mu, 2011).

We propose that the velocity shift to social games altered the role of game IP’s as complementary assets. While video game IP’s remained a key asset in the social game environment, existing cognitive frames based the video game development made it difficult for incumbent game firms to take advantage of their advantages during the technological shift. We suggest that these cognitive frames were behind the focus on some incumbent’s strategic alliances with entrant social games companies for key game IP’s and the focus of Nintendo to refrain from adopting the social game business model with their game IP’s. With the discontinuity of social games creating both new users groups and a monetization based, service business models for games, conservative interpretative frames was reinforced by incumbents perceived risk towards the long-term economic and cultural value of their franchises.
3 Empirical data and method

3.1 Case selection
The emergence of social games Japanese game industry provides an especially good case of theoretical sampling (Eisenhardt & Graebner, 2007) to analyze incumbent-entrant dynamics in a Japanese creative industry with both disruptive innovation and specialized complementary assets. In addition, case studies that seems to be at odd with existing theoretical prediction are often fruitful for exploratory case studies with the potential to develop existing theory or develop new theory (C. M. Christensen, 2006; Eisenhardt & Graebner, 2007). Based on this notion, the case study gradually became evident as an interesting case based on the notion that its incumbent-entrant dynamics was at odds with existing literature of disruptive innovation in the Japanese institutional context as favoring incumbent over entrants. Furthermore, the industry case was also at odds with existing theories of industries with specialized complementary assets buffering incumbent firms against entrants during technological discontinuities (Game IP’s in the case of the game industry).

3.2 Data collection
The emergence of a new industry segment provides particularly methodological challenge for empirical data collection due to the relative lack of quantitative and qualitative data (Forbes & Kirsch, 2011). In this paper, we have tried to come to grip with some of these methodological challenges by combining qualitative interviews collected over time during the industry’s emergence with an industry dataset and secondary data.

3.2.1 Interviews
We conducted interviews with managers in the Japanese game industry during the period 2005-2013 (see Appendix 1 for a list of interviews). Company interviews was selected from the industry dataset with the aim to get coverage of both entrant and incumbent firms, developers as well as social game platforms operators. We also included interviews of other key informants of the industry, including social game VC firms, industry associations (CESA, JASGA) and industry analysts. Interviews were semi-structured with an emerging set of question that developed during the course of the research process. The first interviews were conducted with Japanese video game companies before the advent of the social game industry. Later rounds of interviews during the period 2011-2013 focused specifically on the emerging social game industry and included managers from both entrants and incumbent firms. By conducting interviews both prior to the arrival of SG and as the disruption it unfolded, we captured the process nature of disruption and limited some of the influence and biases in post-hoc descriptions of the disruptive innovation that has been raised by some scholars (C. M. Christensen, 2006; Van de Ven, 2007).

3.2.2 Industry dataset and surveys
To provide more descriptive data of the industry we constructed a comprehensive data set covering the entire Japanese game industry, including both video game firms and social game firms. The data set consists of entry date of the firms in the industry, key managers, the game platforms the firms have been developing games for, locational data and company size (see Appendix 2 for dataset construction). For the video game industry, we also draw upon
selected data from a CEO survey conducted in 2011 based on the dataset of video game companies. The CEO survey was distributed to a complete set of 289 Japanese video game developers during the period June-August 2011 using a 5 step mail and email process (Dillman, Smyth & Christian, 2009). 74 CEO’s responded to the survey, representing a response rate of 25.6%. The paper is also based on annual survey data on the Japanese video game industry and its users conducted by the industry association for video game companies, CESA.

3.2.3 Secondary data

Additional data has been collected for the larger and publicly listed game firms in the sample, including CEO letter to shareholders, transcripts from company quarterly earnings result briefings, financial reports and secondary press interviews with company key managers made though searchers in the leading game industry trade journals and business press. We also collected audio recordings and transcripts with key Japanese game industry managers from the major game industry conferences. Firm-level data were supplemented by aggregate industry-level data from the major trade associations covering the Japanese game industry (CESA, JOGA, JASGA, MCF) as well as market research firms covering the industry (Yano Research Institute, Seed-Planning, Enterbrain, Media Create and Mitsubishi UFJ Morgan Stanley Securities). News from the period was collected from trade publication, business press, company and industry-associations press releases, industry research firms and previous literature on the industry.

3.3 Analysis

In the analysis phase, the interviews were first coded with qualitative data analysis software (CAQDAS) based on a set of evolving key concepts related to the disruption process of social games. During this coding process, the role of the velocity shift during the disruption and its influence on incumbent-entrant firm dynamics became more evident. In a second-round coding, we refined the coding scheme to reflect on this key issue.

Based on the data sources, we constructed a timeline of the social game industry with events sorted into different themes related to key technological development, new platforms, industry regulation and policy, partnership, joint ventures and supplier relationship. With timeline coding categorized into entrant and incumbent firms, it was possible to analyze how incumbent-entrant dynamics evolved over time in the industry.
4 The Japanese game industry’s discontinuous technological shift to social games

4.1 Incumbency in the Japanese game industry prior to social games

Following the introduction of Nintendo Entertainment System in Japan in 1983, video game came to dominate the Japanese game industry. A new generation of hardware platforms has historically been introduced every 5-7 years, representing a moderate rate of technological velocity (Figure 2). Of these platform shifts, the introduction of Nintendo Wii in 2006 has been characterized as a new market disruptive innovation among scholars (C. Christensen & Anthony, 2007; Ernkvist, 2012; Kohlbacher & Hang, 2011; Subramanian et al., 2011). Despite these prior discontinuous technological shifts, the Japanese video game software market since the mid-1990s has been concentrated to 7 incumbent Japanese game firms: Nintendo, Namco Bandai, Konami, Capcom, Square Enix, SEGA and Sony Computer Entertainment (Figure 3). All of these firms except Sony Computer Entertainment had been in the Japanese video game industry since the mid-1980s. Together, the 7 incumbents represented 66-87% of the video game software sales in Japan during the period 1997-2011. This pattern was in line with the established notion that incumbent firms in the Japanese institutional system has an advantage over entrants during discontinuous technological shifts, including disruptive ones (H. W. Chesbrough, 1999).

Figure 2: Rate and direction of technological change in the Japanese video game industry
A high number of smaller Japanese video game developers entered the market during the second half of the 1980s and 1990s (De Vaan, Boschma, & Frenken, 2013). However, these entrants were not able to disrupt the industry leadership of the 7 incumbents during the period. To a large extent, they have remained in a supplier relationship to the incumbent game companies. Incumbents possession of complementary assets in the form of game IP and vertically integrated value chain of development, publishing and distribution (Figure 4) contributed to the continued dominance of the 7 incumbents during prior discontinuous technological transitions.

### Table 1: Business structure and complementary assets of incumbent Japanese video game companies

<table>
<thead>
<tr>
<th>Video</th>
<th>Year founded</th>
<th>Company business segments (million ¥ in revenues)</th>
<th>Top 3 video game IP's (million games based on IP sales Japan ,2010)</th>
<th>Key complementary assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nintendo</td>
<td>1889</td>
<td>Games (1,014,345)</td>
<td>1. Wii Sports (75.7 mil.)** 2. Super Mario Bros. (40.2 mil.)** 3. Tetris (30.3 mil.)**</td>
<td>-Game IP -Proprietary video Game Hardware</td>
</tr>
<tr>
<td>SquareEnix</td>
<td>1986 (Square); 1975 (Enix)</td>
<td>Digital entertainment (64,200), Amsuement (45,000), Publication</td>
<td>1. Dragon Quest (52.0 mil.) 2. Final Fantasy (48.0 mil.) 3. SaGa (9.2 mil.)</td>
<td>Game IP</td>
</tr>
</tbody>
</table>
Incumbent firms that could appropriate specialized complementary assets that retain their value during disruptive technological change are less likely to be overthrown by entrants (Tripsas, 1997a). Video game incumbents possessed specialized complementary assets in the form of well known game IP’s that has retained value during technological shifts, providing advantages of competitive differentiation and familiarity in a market characterized by high development sunk costs and pre-market uncertainty. Well known game IP franchises became valuable specialized complementary assets that extended technological platforms and developed into new iterations that could span over a decade. Some established game IP’s from incumbent Japanese game companies involve over a dozen of titles, many with a history ranging back to the 1980s and sales in excess of 10+ million units (Table 1). Similar to IP’s in other entertainment industries, these complementary assets were also used strategically for other related products and services (Consalvo, 2006).

With game IP perceived as a key complementary asset, incumbent video game companies developed specific IP appropriation strategies to increase economics of scope between different products and maximize the long-term value of the assets. An example was Bandai Namco’s “IP axis” strategy, whereby game IP’s that in many cases have been launched 30-40 years ago remain core nexus for a wide range of products (Bandai Namco Annual Report, 2013:14). Nintendo was another notable example of how game IP’s as a complementary asset were valuable during technological transitions. Although Nintendo released a relatively few games of the total number of video game titles released on the
market each year, the well-known IP’s of the company and resources that they could devoted to each project contributed to the company’s ability to sell more units of each of their titles than the other incumbent video game firms (MediaCreate, 2002-2009). The game IP’s retained their value over the technological shifts and the company used them to help establish its market for new video game platforms (Subramanian et al., 2011).
Figure 4: Business model and market structure

### Video Games

- **Development costs**
  - Wii: ¥693 million
  - PS3: ¥1,320 million yen
  - Xbox 360: ¥1,050 million yen

- **Product development**
  - 18-36 months

- **Post-launch service**
  - No or minor updates

- **Development kit**
  - Platform publishing approval

### Social Games

- **Development costs**
  - Approx. ¥30 million

- **Development kit**
  - User demographic:
    - 1/5 paying users, 4/5 free players
    - Top spenders: males in their 30s and females in their 50s
    - 54% of SG players report increased VG playing

### Platforms

- **VG developers**
- **VG Publishers**
- **VG Hardware platforms**:
  - Sony, Microsoft

- **SG developers**
- **SG Platforms**
  - SG platform game development: 50% of virtual content
  - Consumption (Apps, Cards)

### Intermediary

- **Distributor & retailers**
  - Providing physical games
  - Providing downloadable games

- **VG consoles**
- **VG handheld devices**

### User

- **Mobile phone carrier**
  - 1 Virtual item & services payment
  - Credit card, web money, bit cash

- **Mobile feature phones**, **Smartphones**, **Tablets**, **PC**

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**Gross revenue breakdown for 3rd party VG**
- Developer & Publisher: 40%
- Platform holder: 20%
- Distributor: 15%
- Retailer: 35%

**Gross revenue breakdown for 3rd party mobile SG**
- Developer: 70%
- Platform holder: 20-30%
- Mobile phone carrier: 9%
4.2 The social game disruption and shifting entrant-incumbent dynamics

4.2.1.1 SG as a disruptive innovation
The social game market grew rapidly after the two leading mobile social games companies (GREE, DeNA) opened up their platforms for external developers in 2010 (Figure 5). In 2013, social games had surpassed the size of video game market in Japan.

Social Games had the key elements of a new market disruption (C. M. Christensen, 2006; Schmidt & Druehl, 2008). While being inferior and less complex than video games on many primary dimensions of game software performance (e.g. graphics, animation, complex game play mechanics), they had new performance attributes that attracted new market segments. Some of the more important of these attributes were: the social network dimension of the games, the leveraging of the users social network, monetization through virtual items and services, and the versatility of access through mobile phones (Lehdonvirta & Ernkvist, 2011). At the same time social games also had elements of a low-end market disruption: the basic access to the social games themselves were offered for free, with revenues generated from a smaller subset of users (ca 20%) that paid for additional virtual items and services (Figure 4) Characterizing for disruptive innovation, the performance of SG increased over time along these performance dimensions though the rapid technological development of smartphones. Based on market surveys, SG in Japan provided a disruptive encroachment of the market by simultaneously expanding the game market and drawing away players from the existing video game market (Figure 4). Older demographics outside the traditional “hardcore” player demographics (housewives and office workers) represented the main users and sources of monetization (Enterbrain, 2011).

Figure 5. Japanese game market by segment, 1996-2012

4.2.1.2 SG and shifting incumbent-entrant dynamic

The shift to social games provided a significant shift in incumbent-entrant dynamic. None of the major Japanese SG platform firms that established the market came from the existing incumbent Japanese game firms. Instead, they were entrepreneurial startup firms or entrants from Internet service sector (Table 2). These entrant firms were not only incumbent platform holders, but also leading developers for their platforms though in-house or partnership development of social games.

| Table 2: Major SG platforms in Japan |

\(^2\) Sales of advertisements are not included
<table>
<thead>
<tr>
<th>SNS Platform</th>
<th>Company, industry background (B), founding year (F)</th>
<th>Founder, year born and professional background</th>
<th>User base 2013 (million)</th>
<th>Revenue sharing (platform holder : developer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixi</td>
<td>mixi, Inc B: internet services F:2000</td>
<td>Kenji Kasahara (b.1975 internet services)</td>
<td>27.11</td>
<td>20% : 80%</td>
</tr>
<tr>
<td>Mobage</td>
<td>DeNA Co., Ltd B: internet services F:1999</td>
<td>Tomoko Namba (b. 1962, management consultancy)</td>
<td>39.98</td>
<td>30% : 70%</td>
</tr>
<tr>
<td>GREE</td>
<td>GREE, Inc, F: 2004</td>
<td>Yoshikazu Tanaka (b. 1977) internet services</td>
<td>30.19</td>
<td>30% : 70%</td>
</tr>
<tr>
<td>Ameba</td>
<td>CyberAgent, Inc B: internet services F: 1998</td>
<td>Susumu Fujita (Advertisement, media, internet service, b. 1973), Yusuki Hidata (b. 1974)</td>
<td>22.02</td>
<td>N/A</td>
</tr>
<tr>
<td>Line</td>
<td>NHN Japan B: internet services F: 2000</td>
<td>Akira Morikawa (mobile content, b. 1967)</td>
<td>30</td>
<td>N/A</td>
</tr>
<tr>
<td>D Game</td>
<td>NTT Docomo B: mobile telephone operator, F: 1991</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Source: Company interview, SG company database, Companies’ Press Releases; Company Annual Reports, Seed Planning (2012), founder press interviews.

There was also a significant shift towards entrepreneurial entrants when taking into account the entire ecosystem of game developers in Japan. Entrants outside the existing video game industry dominated the subsequent emergence of the complementary social game developers that entered SG platforms when they opened up during 2009/2010. In the beginning of 2012, only 1/10 of the total number of complementary SG developers for smartphones had an operational background in the video game industry (author’s database). Instead, a large number of entrepreneurial startup companies and companies that had been involved with Internet services were able to establish themselves as SG developers. An indication of the dominance of young firms in the social games industry was that at the end of 2011, around 4/5 of Japanese SG developers in Japan were companies founded during or after the year 2000.

5 Velocity shift and its influence on incumbent-entrant dynamics in the shift to social games

Figure 6: Social game industry timeline of entrant & incumbents

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3 As of March, 2012
4 data from Seed Planning (2010), about 10% of gross sales will be charged as settlement payments by platform holder
5 domestic number
5.1 Why incumbents struggled

As a buffering complementary asset, existing video game companies’ IP were still valuable in the shift for incumbent video game companies. However, as a prism they were a source of interpretative inertia related to the coupled nature of game IP’s as specialized complementary assets. For video game companies, the game IP’s were closely integrated with specific interpretative frames of game development from the video game industry that in many instances were incompatible with social game development. For a company like Nintendo this integrative coupled nature was even more pronounced as it interpreted its game software to be closely integrated with its hardware in its competitive ability to produce unique game IP’s. The company’s management interpreted them as inherently interconnected during technological shifts (Subramanian et al., 2011, p. 236).

Hence, it is more appropriate to view game IP’s as a coupled complementary assets with strong interpretative frames. The IP owner put constrains its use, needs to balance novel uses with the demands from the more dedicated user fans and has to balance the potential tension between short term exploitation and long term value (Maurer, 2008).

In the video game industry, the games producer had large amount of control over the IP in the different parts of the game development process. It was a process largely driven by the creator pushing his idea to the market. During the lengthy development period, often spanning 1.5-3 years, changes based on user feedback was mostly limited to the last stages of the game development process where usually more minor changes was made before the finished game was shipped to the public. Some of our interviews claimed that this creator driven game development culture was especially strong in Japan compared to other countries. Survey data from CEO’s of Japanese video game developer supports the notion of a largely creator driven development process (Table 3). Even with a large number of user feedback methods available, Japanese video game companies used them sparsely during the game development process. Video game developers own employees were the major sources of feedback during the game development process and user playtesting was only used at the last stages of development. More analysis driven methods such as focus group tests and user survey were only used by 1/5 of the responding video game developers.
Table 3: Experience with different forms of user feedback in video game development during the last 3 FY (2009-2011)

<table>
<thead>
<tr>
<th>Experience of the method (any stage of development) (%)</th>
<th>Experience of the method during concept/prototyping phase (%)</th>
<th>Experience of the method during Alpha phase (%)</th>
<th>Experience of the method during Beta phase (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Playtesting with users (excl. company employees)</td>
<td>66.2</td>
<td>16.9</td>
<td>24.6</td>
</tr>
<tr>
<td>Playtesting with company employees</td>
<td>80</td>
<td>46.2</td>
<td>61.5</td>
</tr>
<tr>
<td>Focus group test</td>
<td>21.5</td>
<td>4.6</td>
<td>13.8</td>
</tr>
<tr>
<td>User interviews</td>
<td>21.5</td>
<td>9.2</td>
<td>9.2</td>
</tr>
<tr>
<td>User surveys</td>
<td>27.7</td>
<td>18.5</td>
<td>3.1</td>
</tr>
<tr>
<td>Internet forum feedback analysis</td>
<td>26.2</td>
<td>15.4</td>
<td>0</td>
</tr>
<tr>
<td>Media feedback</td>
<td>27.7</td>
<td>6.2</td>
<td>4.6</td>
</tr>
<tr>
<td>Informal field studies of users (e.g. during game shows, company events)</td>
<td>44.6</td>
<td>1.5</td>
<td>10.8</td>
</tr>
</tbody>
</table>

N=65 Japanese video game developer CEO.
Source: Author's survey conducted 2011/12

Many incumbent video game developers found it challenging to adopt their game IP’s to the social game platforms data-driven development method. Initial effort for incumbent video games to enter the social game industry with their existing game IP failed in many instances, an effort that many of our industry informants viewed as an inability to cope with social games focus on constant iterations in the post-launch service phase. With an engrained focus on major creator driven innovation during the development phase, they found it challenging to release games that differentiated themselves in the data driven operational service phase rather than development.

“Traditional video game companies have already tried entering the social game business since the social game platforms opened [for development]. They released games, but those games did not become hit. Traditional video game companies thought that games must be innovative. While other social game companies kept releasing Kaito Royale kind of games and made money, those traditional video game companies still thought that imitations wouldn’t work, that they must release innovative games. For example, Namco Bandai released several social games based on its own IP’s such as “Ridge Racer”, but they all failed. I think they failed because they stuck to their way of thinking.” (Interview, Games Industry Analyst)

The result of the initial entrance strategy was that some incumbent video game firms realigned their strategy in an effort to unbundle their game IP from their game established development methodology. As depicted in Figure 6, incumbent video game firms responded by a combination of 2 main strategies: (1) partnerships or joint ventures with the major entrant social game platforms (Bandai Namco, Square Enix, Capcom) or (2) creation of separate new business units focused on social games (Sega, Capcom). In the case of Konami, they managed to successfully enter the social game industry by expanding their existing digital game division, while Nintendo were reluctant to enter the market until 2014, but then
with a strategy to use the social game platform solely as a marketing platform for its video game business.

From the perspective of disruptive innovation theory, strategies based on separate business units have often been described as a solution to overcoming the different resource allocation requirements of existing and disruptive businesses with different user preferences (C. M. Christensen, 2006). This was also one the underlying strategic imperative of Sega and Capcom’s new business units. Capcom with a large number of hardcore users of its IP’s created a separate business unit under the Beeline brand as a way to overcome the conflicting preferences between existing hardcore users of its video game IP’s and the more casual users of social games, noticing that “the reason for creating a second brand is because Capcom brand games have an image of difficult and complexity about them, creating high barriers preventing light users from casually purchasing a download” (Capcom Annual Report, 2013:27). However, the case of Sega also revealed a different strategic imperative for a separate business unit, based on the notion that it was the velocity shift to social games and its associated new development methodology that was a key underlying challenge of the disruptive innovation. Hence, both the velocity shift and the different user base with more “casual” preferences were perceived as a key challenge for these companies.

"Our competition used to be the so-called large game makers, outfits that had the same speed and methodology we had. With the advent of the iPhone and social gaming, our competition became smaller-scale outfits and companies that were venture capital successes, and we couldn’t keep up at all in speed. Sega has the money, the brand name and the talent, and the only reason we couldn't beat these companies was speed." Haruki Satomi, President, Sega Networks (Polygon, 2012)

A number of joint ventures and partnerships between established video game companies and major social game platform holders were created during this second entrance strategy phase. Within these JV ventures, SG platform holders had the key role in operational service and game developments, while incumbent video game developers were the provider of selected established game IP’s. Even in these cases, our analysis indicates that it was both the social game platforms ability to handle the high velocity of operational service and the different user preferences that was a key factor behind this collaborative entrance strategy.

“We [Social Game Platform holder] know how to operate, to iterate customer feedback, run events, so we’re a service company not a production company. But the console game guys, they know how to create games that are emotionally appealing and how those user interface works. How to build stories, not just numbers like we do. That’s exactly what we’re doing, we’re cooperating with them, sharing their power and strength. Console companies, they have [game] IP, we don’t have our own strong IP. IP’s very strong [reason for JV’s with video game companies].” Manager, Social Game Platform holder

Our interviews indicates that the challenge to combine velocity differences in game development methodology between video game firms and social game platforms holders has been a challenging aspect of these JV’s and partnerships. As an example, one platform holders described the challenges in a partnership with a video game companies due to the differences in interpretation between two diverging sets of users as well as the velocity of game development.

“Video games and social mobile games, we were friends originally, but the fans hate each other. So there is a cultural gap...We had this video game developer made the game XXX, but we advised them and designed some parts of it.
And of course they expect 1-year [development] cycle but we said, "Hey, 3 to 4 months." If they [video game companies] try to be perfectionists we'll say, ‘we can just release it and make adjustments later’. Yes, that kind of things happens.” Manager, SG Platform holder

When analyzing the challenges faced by incumbent video game firms in the social games disruption, the key barrier to entering social games were not primarily based on the resource allocation process to the disruptive technology with its different user base. Although incumbents did not pioneer the market, the majority of them devoted extensive resources to social games once the platforms was opened. Instead, it was the challenges by established video game creators to change cognitive frames about game development. The case of incumbent video game firm Konami illustrates this. The firm was one of the more successful incumbent firms that early on dedicated 200-300 people to social game development, combined with dedicated resources for developing data-mining and analysis (author's interview). However, the cognitive shift was challenging for established video game creators, as exemplified of the barriers of one of the firms prominent creators of a number of video game IP’s who left the company in 2014:

"The more hardcore the game... the less suitable it is for the casual market. Unfortunately, I'm good at making core experiences, so it was two years of making a game that leaned too 'hardcore' for the social market. So it was canceled. Then I'd try again and be canceled. And again and be canceled. That happened several times, more because my natural style is more akin to a hardcore game... My style of creation, the sort of game experiences I'm really good at don't fit that [social game] trend. There was a little frustration on my part trying to make that leap. I think a lot of [video game] creators are unable to make that leap.” Koji Igarashi (McWerthor, 2014)

The coupled nature of their game IP with their other businesses is likely to have contributed to the reluctance of incumbent firms to enter the social game industry through the creation of separate business unit. Firms such as Bandai Namco and Konami had a closely integrated IP development where the firms tried to integrate all game development efforts around single game IP’s. The strategy that Badai Namco labeled “IP Axis Strategy” revolved around development focused on IP that then was orchestrated and controlled for release within a large number of different game and related entertainment products. The company described ho “The know-how needed to unify and control IP with this group wide comprehensive producer policy is a distinctive strength of the Bandai Namco Group (Banda Namco Annual Report, 2013:15). With such a closely integrated IP strategy, a separate business unit was a less attractive option.

For the combined game software and hardware firm Nintendo, its game IP’s also was closely integrated with proprietary hardware development. Although Nintendo is the company with the most well-known and highest selling game IP’s in the Japanese game industry, its management was reluctant to enter the social game industry. With its game hardware and game software development closely integrated, its game IP was more coupled to the existing video game market than other incumbent video game firms that only focused on software. When it eventually announced the intention to enter social games platforms in 2014, it was with an intention to use the social game platforms as a marketing opportunity to draw new players to its own video game hardware. The CEO expressed the challenge of how the company’s IP’s and development methodology would be affected by the velocity shift of social games as a major contributing factor to the reluctance to enter the social games market.
5.2  Why entrants succeeded
To a significant extent, entrants in the social game industry succeeded by developing a business model that from the onset could take advantage of the velocity shift of social games. The velocity shift was also instrumental in lowering institutional barriers to entrant’s disruption in Japan that had characterized incumbents’ disruptive advantages in other industries: the underdeveloped financial market for entrants and lock-ins due to established long-term employee contracts and supplier relationships.

5.2.1  Entrant’s advantages in a high velocity environment
We argue that a previously overlooked aspect in the changing entrant-incumbent dynamics following the disruptive shift to social games was the key role of the accompanying velocity shift from a moderate to high velocity environment in the game industry. More recently, there has been an emerging stream of literature in strategy field that arguing that competition in high velocity environment is fundamentally different from competition in moderate or slow speed environments (D’Aveni, Dagnino, & Smith, 2010). High velocity environment tend to favor strategies of agility: dynamic maneuvering rather than static positioning, continuous rapid adaptation to the changing environment, and continuous evaluation of action rather than formal planning (D’Aveni et al., 2010; Grimm, Lee, & Smith, 2006). Furthermore, firms in high technology industries with customer agility to rapidly sense and respond to market opportunities have higher performance (Roberts & Grover, 2012). However, this notion of changing competitive dynamics in high velocity environment has thus far not been thoroughly integrated in the literature of discontinuous technological shifts.

The analysis of the disruption of social games indicates that the accompanied velocity shift of product innovation had a key role in shifting the competitive advantages to entrants in Japan. We argue that the velocity shift of product innovation involved seemingly by itself created a cognitive contradiction in the shift from interpretative game development towards rapid analysis that was a main cause of inertia for incumbent firms.

While the innovation process in creative industries in general is characterized by managerial challengers to balance different interests, there is an especially pronounced tension between creator based market construction and demand analysis (Lampel, Lant, & Shamsie, 2000; Lester & Piore, 2009). Changes in the way an industry collect and analyze information on users could produce radical shifts in the interpretation of market, revealing how much developers cognitive picture of the market is based in the methods that they use to construct that picture in the first place (Anand & Peterson, 2000). The velocity shift in the social game disruption introduced a business model where the focus shifted from intuition based creation of innovation more towards analysis-driven real-time responses of user needs. In the social game disruption, this shift towards analysis-based, data driven game development was difficult for many established video game developers due to its novel elements of data-analysis driven development focused on user-driven small innovative iteration rather than large creator driven pushes and the focus on speed in development (Table 4).
Table 4: Examples of cognitive velocity shift contradictions between video games and social games

<table>
<thead>
<tr>
<th>Number</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>“Social games and video games are seemingly antithetical when it come to the beliefs about games...SG are web service, contrastingly consumer game are almost art work. There were some employees from video game company X who had resistance to accept our beliefs [about social games]. It took a lot for them to understand the business idea [of social games].”</td>
</tr>
<tr>
<td>2.</td>
<td>“It seems difficult shifting to the work in high speed. The way of thinking and working process is quite different between these games. [Video] Games such as PlayStation develop over one year and then release the game which you can’t change, on the other the social game that we make many changes after the game was released.”</td>
</tr>
<tr>
<td>3.</td>
<td>“Internet services require developers to operate and update the service constantly, which GREE and DeNA were used to doing. So their speed of developing and releasing social games is very fast. Traditional video games required 2-3 years to develop, while social games need to be updated every week and every month. That is very difficult for traditional video game companies to catch up with. When social game market emerged, it was very advantageous for start-ups and companies that were providing Internet services.”</td>
</tr>
</tbody>
</table>

Sources: 1. Author’s interview, 2 CESA survey of Japanese video game developers (average game development costs 2004-2012), 3. Author survey

Many entrants in the social game market were companies that had experience from Internet services and could adopt this method to the social game markets data-driven development. By building up competence around analysis and high velocity game development and operation, social game companies were able to constantly adopt their games to the rapidly changing market.

“The know-how is pretty different in doing consumer games [i.e. video games] and social games. A consumer game is more like art. Social game and online game are more like science. E.g. ratio here and ARPU [average revenue per user]; this is data analysis. We check the data to see what we need to change. There are artist talents in [video] gaming companies, but there is no data [analysis] talent. We have both. I think that it is very tough to change company cultures. We are not that afraid of consumer game companies”. CEO SG developer, December 2, 2011

5.2.2 Lower barriers to entrant financing and new supplier relationships

Following the deregulation of Japan’s telecommunication sector at the end of the 1990s, mobile Internet services provided through NTT Docomos i-mode and similar competing alternatives became the source of a rapidly growing ecosystem of third-party Internet service firms. As an operator-centric service, i-mode was depending on the ability of operators to orchestrate the hardware developers and large ecosystem of content providers and services of the platform (Funk, 2009; Kushida, 2012; Tee & Gawer, 2009). The operator centric influence was higher in Japan than other countries, providing Japan with a country-specific internet mobile system that at the same time had elements of a high degree of competition among local content providers (Kushida, 2012).

Financial entry barriers were low for entrepreneurial content providers in i-mode. The system was largely biased towards Internet content providers of “official” content, rather than “unofficial” Internet content. This was content that provided ease of access through inclusion in the i-mode portals access menu. At the same time the payment business model of official content providers was lower as they could charge their services though the
telecommunication operators billing system for a share of the revenues (approximately 9%, Figure 4) [Kushida, 2012, p. 22].

During the first decade (2000-2009), mobile games and ring-tones dominated the mobile content service market in Japan. The rapid growth of the sector had already developed an ecosystem supporting entrepreneurial startups when the social game industry emerged. Telecommunication operators had developed into significant financial investors in mobile content firms and mobile content providers became one of the primary source of venture capital investments to support their growth in a country that otherwise was characterized by relatively small involvement of VC. Hence, when entrant social game firms established relationship with telecom operators as official content services in 2006/2007, it was already in a sector specific system where rapid entrepreneurial growth was supported by the business model of mobile Internet services (operator billing, “official” portal) and established opportunities to startup venture financing. The key supplier relationship with telecom operators was new for the game industry, hence a relationship where incumbent video game firms did not have any advantages over entrants in the disruption with their established supplier relationships.

As the social game sector developed, the new entrant SG platforms themselves also started VC funds, further strengthening financing opportunities for entrants in the sector (Figure 6). Our interviews indicates that a large number of entrant social game firms also grew though bootstrapping. The shift from the video game industry’s focus on incumbent game publisher financing to social games venture capital and bootstrapping was directly related to the new business model of social games and its high velocity environment. In the disruptive shift to social games, several of the complementary advantages that incumbent video game publisher based financing had for video games was made obsolete (packaged goods publishing, distribution and marketing channels). At the same time, the high velocity and business model characteristics made it possible for social game companies to use specialized marketing companies servicing the games with player acquisition & cross promotion while allowing entrants to retain their game IP rights (Segerstrale, 2013). These were also specialized supplier of social games marketing analytics that incumbent video game firms lacked prior supplier relationships. In addition, relationships with the new SG platform leaders provided a strategically important source of marketing service knowledge for entrant firms, a close “club” like relationship:

“Have a good communication with the SG platform is key. The current application or what kind of application we should have in the future is maybe something you can learn from daily discussion with platforms. And if you are a member of the club, then you will learn from platform which part of your game is having a problem.”
CEO, SG developer

With low development costs and rapid development cycles, entrants could rapidly gain the revenues to grew with bootstrapping or VC. Consistent with previous studies of the Japanese VC industry (Eberhart, 2009), SG firms indicated that they took a relatively passive stance in the management of the companies they invested in.

“In most cases, venture capitals in Japan only invest the money and watch the company grow. ...What they do is basically offering some management advices. They [VC] do have a lot of knowledge about the social game industry. But we [game firms] have more practical experience in developing social games. So if the VC says we have to do this,
we have to make this kind of game, we just politely ignore them and do what actually will be successful.”  CEO, SG company

5.2.3 Cognitive frame shift and entrants lack of inertia of immobile labor markets

While there is evidence that the immobility of labor market skills have provided barriers for entrant Japanese firms to pursue disruptive innovations in other industries (H. W. Chesbrough, 1999), we argue that the social game industry disruption was significantly different due to the shift towards a high velocity, analytical-based development methodology that made skill transfer from the video game industry challenging from a cognitive, rather than skill-based perspective. Entrant social games firms focused on recruiting new employees that from the start learned how to work with an analytical and data-driven game development model focused on constant data driven improvement during the operational service and rapid game development processes that were focused on minor improvements of existing games.

While entrant game companies also hired employees with prior experience, they were also emphasizing the need to integrate producer without prior experience from the video game industry. One of the major social game platform entrants described this as the velocity shift of the industry made it emphasize on generalists that could change rapidly rather than focused on specialists with more engrained competence.

“For human resource, rather than specific background we tend to focus on their [developers] basic competence because our industry changes so quickly all the time. And one day your competitor’s winning but 3 months later, their market share is turning. So we have to have people who are flexible and people who are not bound to just one specific career. People like to say that we have many high skilled generalists.

Manager, SG Platform company
6 Conclusions

By developing the concept of (1) velocity shifts and (2) coupled nature complementary assets, we have advanced an alternative explanation to entrant-incumbent dynamics in the game industry. By linking the literature on technological change with institutional innovation system literature, we have proposed that discontinuous technological changes accompanied by velocity shifts in creative industries affect different institutional system in diverging ways.

First, our case of the game industry provides an alternative explanation for the mechanism behind the challenges with disruptive innovation in Japan. The velocity shift that accompanied the disruptive shift to social games in Japan was key in shifting the competitive advantages to entrants over incumbent firms, by simultaneously decreasing institutional barriers for entrant firms and enabling them to leverage their advantages of speed and rapid response to market changes.

Incumbents enjoyed advantages compared to entrants in the video game era related to financing of lengthy and costly game development projects, relative immobility of skilled game creators and well established game IP’s that was closely connected to their creator driven game development method. However, the velocity to social games involved a shift towards a different analysis driven game development methodology focused on rapid game development and focus on data-driven operational service.

With the shift, entrant’s barriers financial barrier to development was significantly lower, enabling growth through VC investments and bootstrapping. The new social games business model created the need for new supplier relationships, limiting the role of incumbents established supplier relationship in the industry. Perhaps most importantly, the role of incumbents existing skills of game creators became a less important competitive advantage, not because their skills per se was made obsolete, but because the velocity shift required a different cognitive frame of how game development method that put priority to analysis driven operational service and rapid game development. Our study indicates that this shift from medium velocity, creator driven game development towards high velocity, analysis driven game development provided a significant barrier for incumbent video game companies and their established game creators. From this perspective, the reluctance and late entrance of incumbent video game firms into social games in Japan was not simply a challenge of resource allocation to a different user base as traditional disruptive innovation theory posit, but a challenge of shifting development methodology from a creator driven to an analysis driven model that in many instances was incompatible with each other and involved a number of tensions.

Even if the disruptive shift to social games involved a shift to a new user group with new market preferences that was different from the established video game market, we have argued that the mechanism behind this challenge seems to have been of different nature than the resource allocation problem proposed by the theory of disruptive innovation (C. M. Christensen, 2006; C. M. Christensen & Bower, 1996). The social games market was not primarily a challenge for incumbent video game firms due to the difficulties with resource allocation to the new market, but more due to the cognitive challenges for incumbent video game firms creator and managers to shift to a market with a completely different game development method. In this sense, the barriers were more related to the challenge between changing from a creator driven innovation method to one based on analytics (Lester & Piore, 2009).
Secondly, we have argued that complementary assets in the game industry not only acted as a buffering mechanism for incumbent firms during the social game disruption as proposed by the theory (Tripsas, 1997a). Complementary assets was also as a interpretative frame, with game IP’s as an asset coupled with development methodology from the video game industry and views of how a shift to social game would affect the long-term value of these assets. While the notion that complementary assets could buffer incumbent firms during technological discontinuities is well established (Tripsas, 1997a), the notion that complementary assets also act as an interpretative frame for incumbent firms in its trajectory choices has been proposed more recently (Wu et al., 2013).

While incumbent video game firms had access to valuable complementary assets in the form of game IP’s that remained valuable in the social game industry, the challenge they encountered was that these IP’s also were coupled with a cognitive frame closely linked to video game development methodology, video game creators and the established user base of video game users. The coupled nature of game IP’s made it difficult for video game firms to simply enter the social game market though a separate business unit, one of the commonly prescribed solutions of the innovators dilemma (C. M. Christensen, 2006). In the case of incumbent Nintendo that choose a different technological trajectory without direct involvement in the social games business model, game IP’s was coupled to the close integration of both unique hardware and video game software development. The incumbent interpreted the established social game business model as both a threat to the long-term value of its game IP’s and incompatible with the proprietary hardware-software methodology that management interpreted as a core underlying foundation for the companies’ ability to generate game IP’s with unique experiences. For other incumbent video game firms, the shift to social games generated tension among the senior video game creators that had been the long-term key competence for the generation and retention of game IP’s.

We found evidence of this tension also in cases where video game firms collaborated with entrant social game firms in the development of social games, with different interpretations of game development and operational service as a challenge to the collaborations.

While this has been a study of a single creative industry with associated limits to generalize, the result provides avenues for further research on competitive entrant-incumbent dynamics in creative industries. The notion that a shift to high velocity during disruptive innovations limits institutional barriers for entrant firms in relation to incumbents might be interesting to study in other creative industries that have seen a similar velocity shifts. For example, the shift in cognitive frames from interpretation to analysis might be applicable to how entrants have also established a leading global position in countries that previously had a peripheral role in game development, with the growth of online games in South Korea and China as notable examples (Ström & Ernkvist, 2012, 2014; Wi, 2009).
## 6.1.1.1.1 Appendix 1. List of game industry interviews

Method: Semi-structured interviews, 60-110 minutes long.

<table>
<thead>
<tr>
<th>Type of organization</th>
<th>Position of interviewee(s)</th>
<th>Date</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry association</td>
<td>Executive Director</td>
<td>October 2005</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Major video game company</td>
<td>1. Game Designer</td>
<td>November 2005</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Major video game company</td>
<td>1. Manager, Public Relations Department, 2. Manager President Office, 3. Manager Public Relations Department, 4. Manager Konmai Game School</td>
<td>November 2005</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Game developer</td>
<td>President</td>
<td>November 2005</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Government trade organization</td>
<td>Manager, Inward business division</td>
<td>November 2005</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Major video game company</td>
<td>Manager, Corporate Communication Department</td>
<td>November 2005</td>
<td>Kyoto</td>
</tr>
<tr>
<td>Game industry analyst company</td>
<td>President</td>
<td>November 2005</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Major video game company</td>
<td>Deputy Senior Vice President, General Affairs &amp; Human Resources Division</td>
<td>November 2005</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Industry Association</td>
<td>Executive Director</td>
<td>December 2005</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Game developer</td>
<td>1. Manager, Overseas Operations, 2. Manager, Corporate Planning Department</td>
<td>December, 2005</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Game industry analyst company</td>
<td>Global Marketing and Strategic Planning Manager</td>
<td>October 2007</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Industry association</td>
<td>1. Manager, 2. Manager</td>
<td>May 2010</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Game developer</td>
<td>President</td>
<td>December 2010</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Game developer</td>
<td>President</td>
<td>May 2011</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Game developer</td>
<td>1. President, 2. Assistant Producer</td>
<td>May 2011</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Game developer</td>
<td>HR Lead</td>
<td>August 2011</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Major video game company</td>
<td>1. Senior Manager, Corporate Task Force Department 2. Manager, Corporate Task Force Department</td>
<td>December 2011</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Developer</td>
<td>Engineer</td>
<td>2011.11.24</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Developer</td>
<td>CEO</td>
<td>2011.11.25</td>
<td>Tokyo</td>
</tr>
<tr>
<td>SG Platform Holder</td>
<td>1. Executive Officer of Alliance Division 2. Employee at Alliance Division</td>
<td>2011.11.28</td>
<td>Tokyo</td>
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<tr>
<td>Developer</td>
<td>CEO</td>
<td>2011.11.29</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Developer</td>
<td>President &amp; CEO</td>
<td>2011.12.02</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Social Game Trade Journal</td>
<td>Industry Analyst</td>
<td>2011.12.08</td>
<td>Tokyo</td>
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<td>Consulting Firm</td>
<td>Consultant</td>
<td>2011.12.09</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Developer</td>
<td>COO</td>
<td>2011.12.13</td>
<td>Tokyo</td>
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</table>
### 6.1.1.2 Appendix 2. Game industry dataset construction

The database for this research consists of companies from the video game and social game industry in Japan.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Date</th>
<th>Number of companies</th>
</tr>
</thead>
<tbody>
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<td>Social game industry</td>
<td>2012</td>
<td>255</td>
</tr>
<tr>
<td>Video game industry</td>
<td>2012</td>
<td>289</td>
</tr>
</tbody>
</table>

**Social game companies:** There was no publicly available dataset of the social game industry in Japan. Thus this part was first started building based on a company lists that SG platforms had released. Then new companies were added into the dataset by searching news in gamebiz.jp and through the game lists in major SNS platforms on smartphone and PC where the individual game is associated with its’ developer’s name. Companies’ detailed information were obtained from each company’s website. We further complemented and cross-checked data with JASGA (Japan Social Games Association) membership list.

**Video game companies:** this part was using a database set of Japanese game developers that first were developed by Fujihara (2010) and later updated and expanded for a CEO survey project by the author in 2011/12. The database was cross-checked, developed, and updated through information from each company’s Internet homepage.

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6 The list includes companies who decide to develop social games on smartphone in GREE platform.
6.2 References


Segerstrale, Kristian. (2013, June 17). Why gaming is still a great bet for investors.


