

The Japanese Gaming Cluster



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1. Japan Competitiveness

1.1 Country Background

Japan is an island chain-country between the North Pacific Ocean and the Sea of Japan which consists of 6,852 islands. The total land size is 377,915km² (62nd in the world), and about 70% of the land is mountainous.

Unlike the neighbor countries such as China, Indonesia and Russia, Japan virtually has no energy resources. Hence, the country has long been the world's largest importer of coal and liquefied natural gas, as well as the second largest importer of oil.

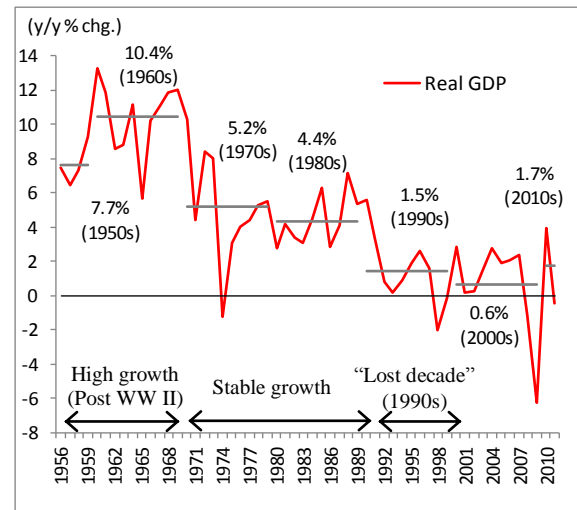
Currently, Japan has the 10th largest population in the world (about 128 million), which enables the country to enjoy a relatively large domestic market. This large domestic economy helped Japan develop many industries of its own, including the video game industry. However, from 2008, Japan's population is declining. In fact, Japan is the fastest aging country in the world. In 2010, ratio of seniors to total population was 23.1%, meaning that approximately one out of four people in Japan are above 65 years old. Hence, population aging is a critical problem for Japan than any other countries in the world.

For a well matured open-economy like Japan, good relationship with its neighbor countries is critical. In 2010, seven out of the top ten export partners were Southeast Asian economies, with China being the number one trading partner. Because the country's short economic growth is highly dependent on exports, maintaining a good relationship with neighbors is important not just politically but also economically.

1.2 The Economic Performance of Japan after WW II

Post WWII Japan experienced rapid growth. The rapid growth in the 1950s and 60s made Japan the biggest economy in Asia at that time. The country kept growing stably in the 1970s and 80s, although there were some fluctuations in growth due to the oil shocks. But in the beginning of 1990s, the country experienced the “burst of the bubble”, and went into a decade long stagnation.

Figure 1. Real GDP growth rate



Source: IMF, Bank of Japan

The years after 2000 are the mix of three things for Japan: Recovery from the “burst of the bubble”, huge business contraction and recovery from the global downturn in 2008, and the struggle against the huge uncertainty caused by the Great East Japan Earthquake.

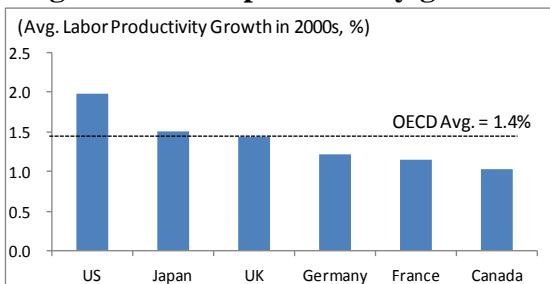
In March 2011, the country was unfortunately hit harshly by an earthquake and tsunami.

Although Japan is well known as a natural disaster prone country, the damages that were caused by this earthquake was beyond what many people had ever imagined. The direct damages to social infrastructure and private structures are estimated to be about \$215bn (3.5% of GDP).¹

What was even worse was the nuclear crisis at Fukushima Daiichi Nuclear Power Plant. The earthquake and tsunami destroyed the cooling mechanism of the reactors in the power plant and caused the nuclear fuel rods in some of the reactors to melt down. This accident made the government to decide to stop almost all of the nuclear power plants in the country at least temporarily. Hence, the Great East Japan Earthquake has created huge uncertainty for Japan's future growth, especially by creating electricity shortage risks.

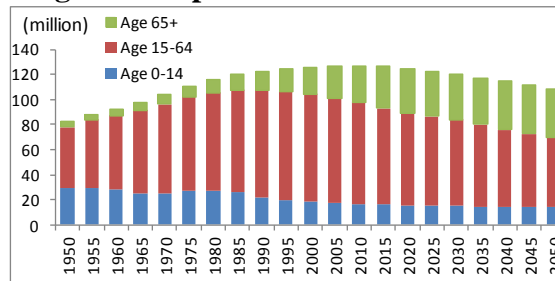
In addition to the aftereffects of the earthquake, the rapid aging also casts a shadow on Japan's future development. Although Japan's labor productivity finally returns to the OECD average in the 2000s, the country's working age population is expected to continue declining. In 1970, Japan was one of the youngest economies in OECD. But the country became the oldest economy only within three decades, because of its best-in-the-world longevity, one of the lowest birthrates, and relatively short baby boom after WW II. Unfortunately, the rapid aging trend is expected to continue for many years.

Figure 2. Labor productivity growth



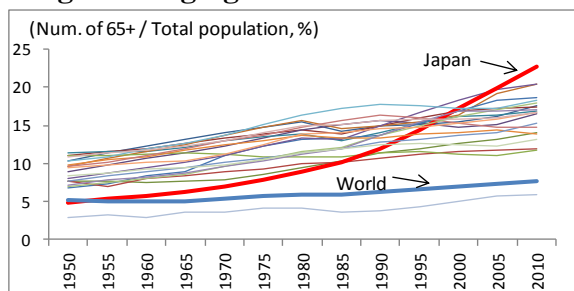
Source: OECD

Figure 3. Population Forecast



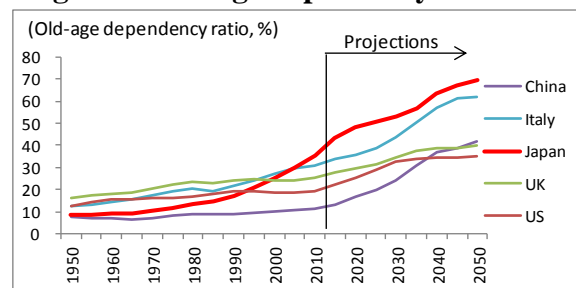
Source: National Institute of population and Social Security Research

Figure 4. Aging in OECD Countries



Source: United Nations

Figure 5. Old-age dependency ratio



Source: United Nations








Note: Old-age dependency ratio = over 65/15-64

1.3 Macroeconomic and Political Risks

On top of the huge challenges created by the after-effects of the earthquake and an aging population, Japan also faces challenges in its macroeconomic policy and politics. The government already has the highest debt levels among advanced economies, making further support from the government through macroeconomic policies difficult to expect. Moreover,

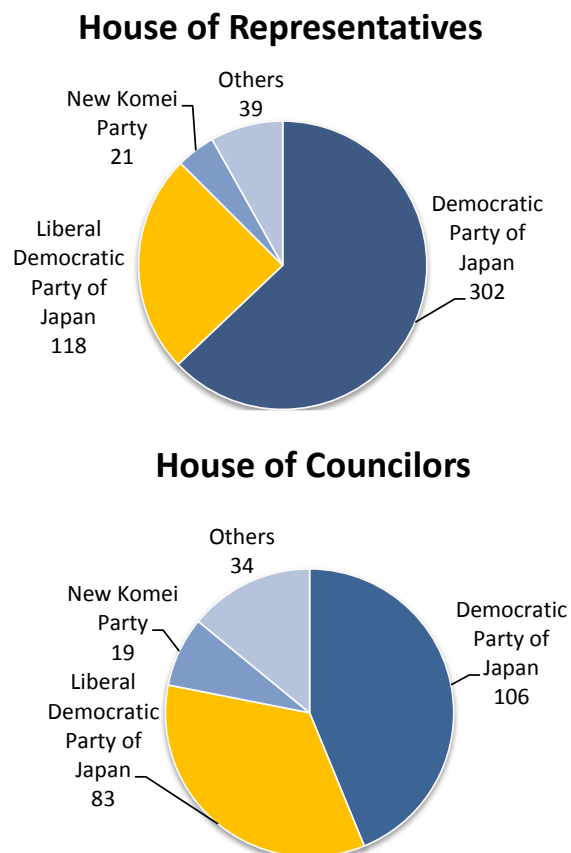
Japan lacks political leadership. After Prime Minister Koizumi, Japan has had six prime ministers in about six years. This lack of leadership has divided the citizens' vote and created a twisted Diet, which is slowing down the government's decision making process². Also, frequent changes in political leadership may lead to fiscal policy discontinuity, a key concern for many Japanese firms. For instance, Prime Minister Noda is particularly interested in restoring the country's fiscal sustainability. If the Noda Administration decides to further cut the government expenditure to improve the government's fiscal balance, it may also reduce the investment for improving the firms' competitiveness. Hence, whether the government can implement the appropriate long term strategies is becoming a bigger question for Japan.

Figure6. The list of Prime Ministers in Japan

	Name		Length of terms (months)
56 th	Junichiro Koizumi (LDP)		64
57 th	Shinzo Abe (LDP)		12
58 th	Yasuo Fukuda (LDP)		11
59 th	Taro Aso (LDP)		13
60 th	Yukio Hatoyama (DPJ)		9
61 st	Naoto Kan (DPJ)		16
62 nd	Yoshihiko Noda (DPJ)		7~

Source: The House of Representatives, The House of Councilors

Figure7. The “twisted Diet”



Source: Wikipedia

1.4 Social infrastructure

Japan has succeeded for the past decade both in human development and rule of law. First, Japan has had the longest life expectancy with an average of 82.3 years in 2005³. Combined with low birthrates, however, it may lead to accelerating the aging population. With respect to education, both primary and secondary enrollment is the highest in the world with a literacy rate of 100 percent. This has resulted in well-disciplined and educated engineers and researchers with robust basic academic skills, and in sophisticated consumers requiring high quality of goods and services. In addition, safety is an important criteria for business location. Among OECD members, Japan has the second lowest victimization rate following Spain in 2005⁴.

1.5 Microeconomic competitiveness and national diamond analysis

Besides the macroeconomic and endowment factors mentioned above, this section examines microeconomic factors to determine the national competitiveness based on diamond analysis

framework as Porter

presents⁵. Based on

global ranking⁶,

Figure 8 illustrates

Japan's

competitiveness

diamond.

Figure8. Japan's competitiveness based on national diamond analysis

National Diamond Analysis (Overall 10th)



1.5.1 Context for Firm Strategy and Rivalry

Many tax expenditures that would usually be preferable from a specific individual or industry perspective may distort the Japanese economy. In 2009, 300 national tax expenditures existed and 134 of them had no expiration date. Effective corporate tax rate is the highest level in the world, nearly 40 percent, which may encourage businesses to locate overseas⁷. In addition, foreign direct investment (FDI) has been the lowest level in the world and Japan has been losing opportunities to increase productivity and job creation by FDI. The Japanese government estimates that high corporate tax rate and appreciation of currency may discourage foreign companies to invest in Japan⁸.

1.5.2 Demand Condition

Due to aging consumers, the domestic market has been shrinking. Elderly people typically spend less on leisure activity and more on health care. Although sophisticated customers are good in terms of business training, by requiring better quality, domestic companies are often criticized that they focus on domestic consumers too much and fail in foreign markets where consumer tastes may differ. It is also called the Galapagos phenomenon, named after a solitary island in Ecuador.

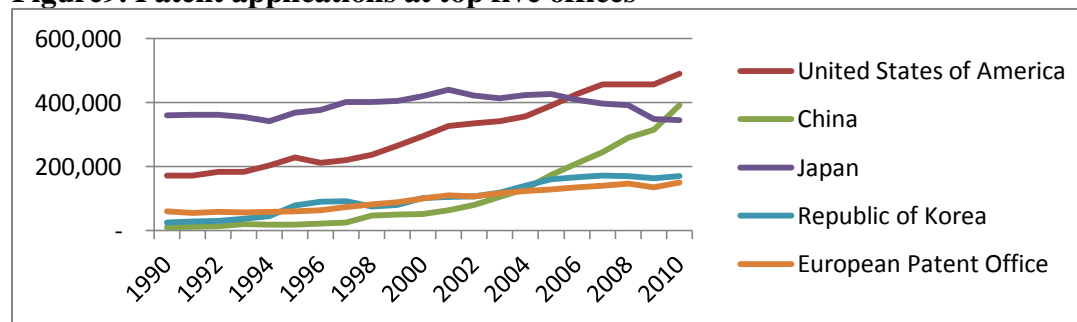
1.5.3 Supporting and Related Industry

Japan has one of the most developed clusters in manufacturing such as automotive and electronics. For example, Aichi prefecture has an automotive cluster where Toyota and its suppliers are located. In addition, there are various related clusters such as machine tools, ceramics, iron and steel⁹. Collaboration among these related clusters has also helped innovation and new businesses development.

1.5.4 Factor Condition

Many well-educated engineers and scientists have an advantage for innovative activity. The number of utility patents in Japan has been the second largest in the world following the U.S. As a result, Japan could develop various industries including the game industry through innovations. However, as Figure 9 illustrates, recently China replaced its position and became the second largest patent applicant in the world.

Figure9. Patent applications at top five offices



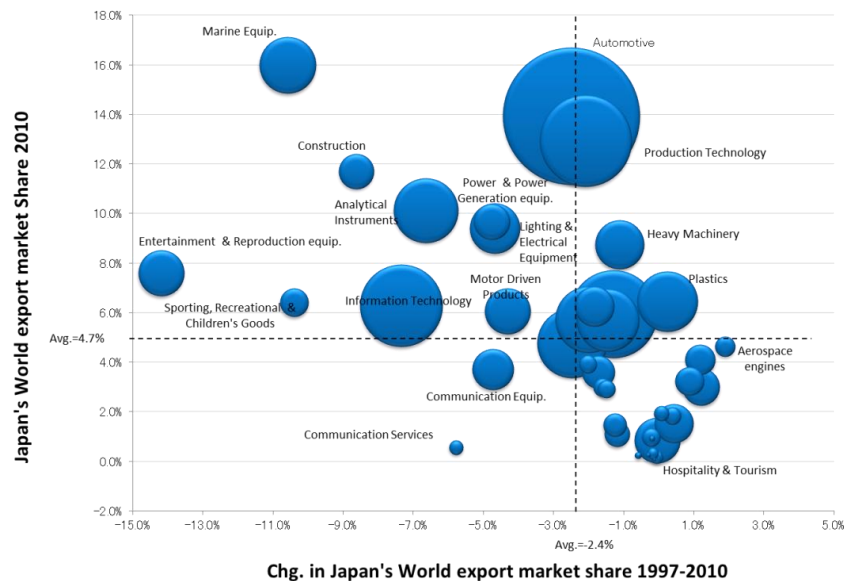
Source: WIPO(2011)

Aging population has had an impact on domestic labor shortage after the baby-boomers' retirement. Since Japan has not actively accepted immigrants, women are expected as the main additional labor force. Nevertheless, under the current systems women have faced difficulty to come back to work after they got married in their 30s or 40s¹⁰.

1.6 National Cluster mapping and industrial structure

Figure 10 illustrates the global export market share that implies two things. First, Japan is by and large a country of manufacturing. In particular, Automotive is the largest exporting industry which accounts for half of GDP growth in 2007. However, export market share for the past 13 years on average has been declining.

Figure10. Cluster mapping



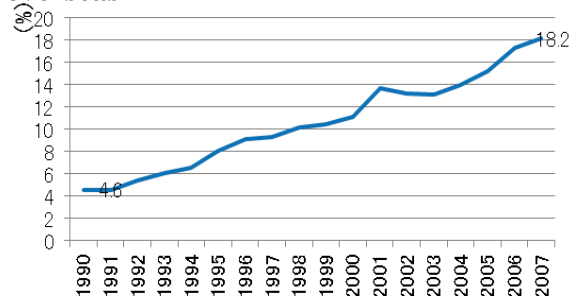
Source: ISC

In addition, figure 11 and 12 reinforce the statement that manufacturing seems less competitive.

Outsourced overseas manufacturing is now four times as much as it was two decades ago.

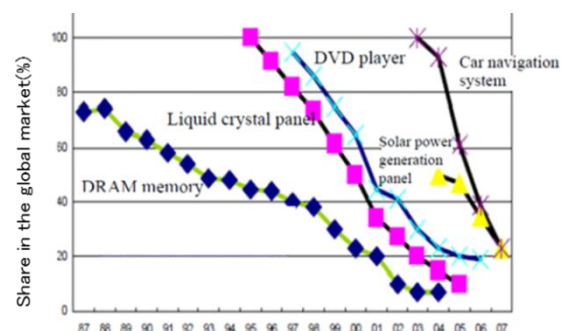
Market share in electronics where Japanese companies used to be competitive has also been declining.

Figure 11. Ratio of manufacturing output in overseas



Source: Economic and Social Research Institute (2011)

Figure 12. Market share in electronics



Source: METI (2010)

As also seen through the national diamond analysis, several microeconomic factors could explain deindustrialization. For example, the shrinking domestic market by aging population, distortive

and high corporate tax rates may encourage this trend. In addition, endowment factors such as geographic conditions prone to national disaster may also accelerates the reorganization of supply chains overseas.

1.7 Government cluster policy since 2001

In 2001 Ministry of Economy, Trade and Industry (METI) initiated a industrial cluster policy to strengthen domestic clusters. They identified 18 nation-wide clusters such as biotechnology and IT, led in collaboration with 10,200 SMEs and more than 560 universities with financial support for events such as business matching. As a result, it launched 70,000 new businesses. Although there were some achievements, it had little actual impact on cluster development. For example, the biggest advantage to participate for a company was to obtain information about government support and subsidies (63.2%). Few wanted to invest in new R&D projects (22.5%) or new products/services (22.3%). Also, the biggest spillover effect for the company was for their name to be known better (40%) and only few achieved increases in market share (9%), profit (6%), or workforce (4%). In addition, METI allocated only 184 million dollars in FY2009 for the cluster development, which was small¹¹.

1.8 Cool Japan Movement

The dominant image of Japan used to be manufacturing, high technology or quality. Recently, fashion, food, manga, and animation are popular images overseas. In 2003, Time magazine featured 21-pages special report on Japanese pop culture. Japan Expo was held in France in 2011, the largest Japanese contents event in Europe to introduce Japanese pop culture, where 200,000 people visited for four days. These movements have been indicated as high potential opportunities to overcome the declining competitiveness of manufacturing.

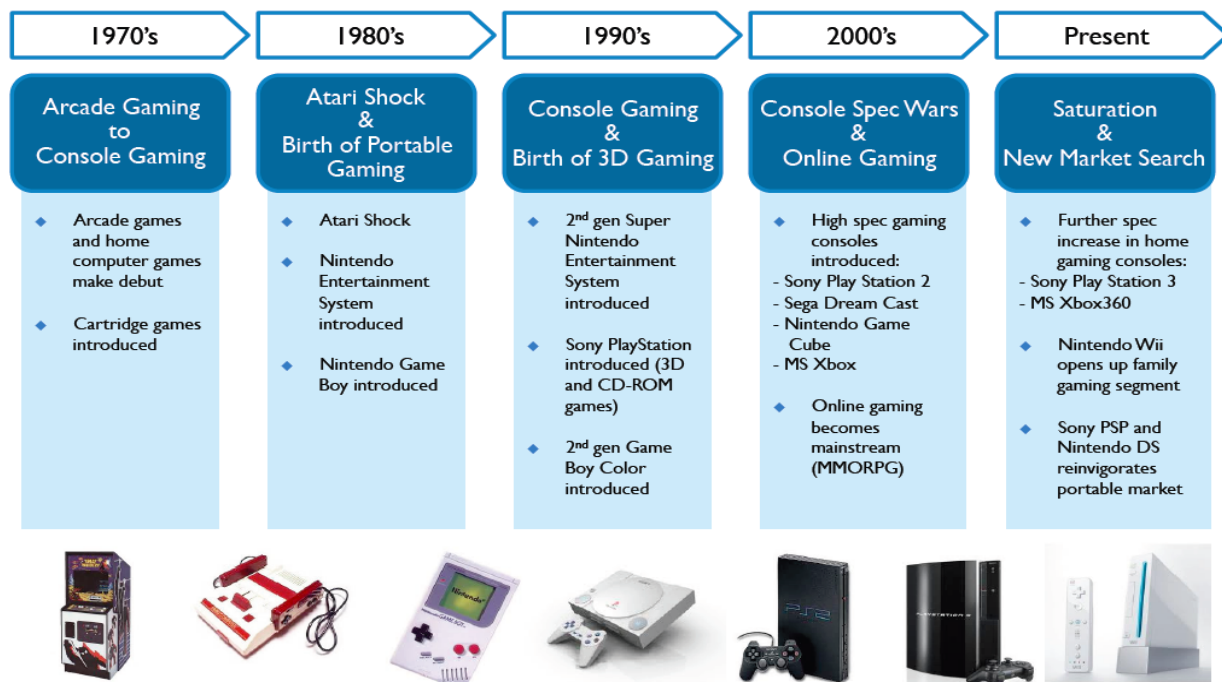
The government launched the “Cool Japan Strategy” in 2011, aiming to increase the global market share in media, contents, food, and fashion from 80 to 110 billion dollars by 2020. They suggest that more strategically robust expansions to foreign markets are necessary, as the movement has not always led to profits for Japanese companies, except few cases such as Pokemon¹².

2. Japan gaming cluster

2.1 Historical Overview

The birth of the gaming industry can be traced back to the 1970’s when arcade games and computer games first made their debut. The Magnavox Odyssey and Atari Pong pioneered the first home console gaming systems until the “Video game crash of 1983”, or what is known as the “Atari shock”. We also see the earliest examples of video games influencing major media content from Disney’s release of the movie “Tron” (1982) at this time.

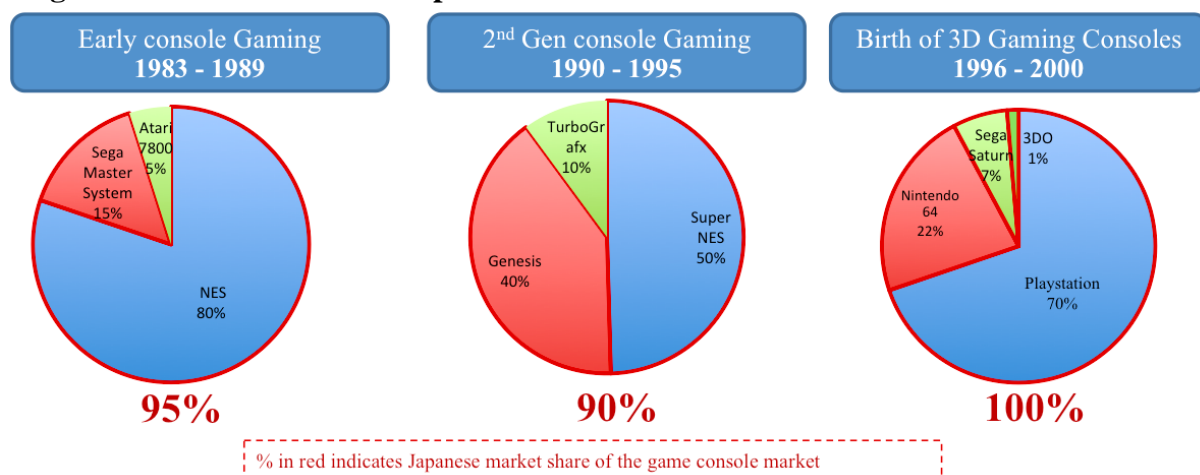
Figure13. History of the Console Gaming Industry



Japan's influence started at a similar time when the Nintendo Entertainment System (or initially the Nintendo Family Computer: "Fami-Com") was introduced. Global sales reached over 60 million units¹³, and console gaming was established as a legitimate business. With Nintendo also diversifying into portable console gaming with the Gameboy, it is safe to say that "console-gaming" in the 80's was synonymous with Nintendo, until Sega entered the console market in 1989.

The evolution of console gaming was accelerated in the 1990's. Technical upgrades were made every few years, implying the forthcoming of spec wars in the next decade. For example, the Nintendo Entertainment System was upgraded to the Super Nintendo Entertainment System, and 3D technology was applied with the entrance of Sony's Playstation, with other manufacturers following the pack. When we view the first two decades after the birth of console gaming from a country perspective, Japanese console manufacturers dominated the global market¹⁴, holding an average share of 95%¹⁵.

Figure 14. Market Share of Japanese Console Manufacturers

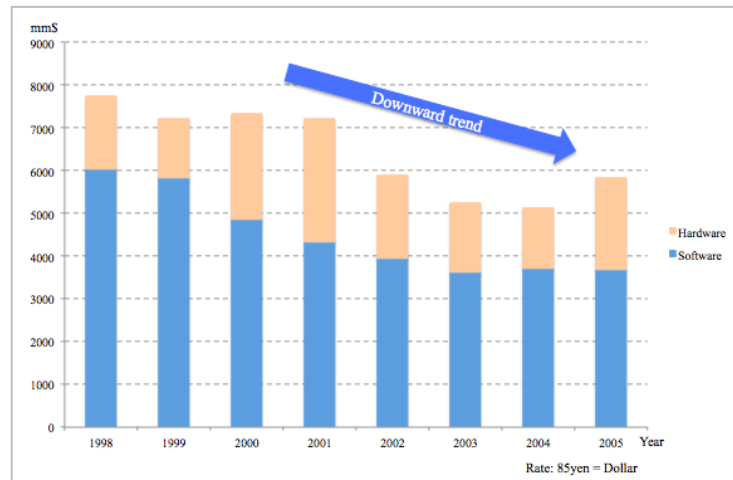


Source: Sony, Nintendo, Microsoft, GamePro

2.2 A New Trend

The spec competition continued to intensify in the 2000's in addition to the entrance of the Microsoft Xbox, the first non-Japanese console manufacturer to hold a significant market share (12% globally: 2001-2005¹⁶). By this time, Sony's Playstation was about to progress to its third

Figure 15. Domestic Console Hardware and Software Sales



Source: CESA

model and the conventional console gaming market was mature. Some manufacturers started to look for new markets with consoles that used new recognition and interface technology such as the Nintendo Wii. The main reason for this, especially in the Japanese market, was due to market trends indicating a decline of the domestic gaming market. The total Japanese market of consoles and software sales was about \$7.8 billion in 1998 had declined to \$5.8 billion by 2005 with a CAGR of -3.5%. The decline has continued today with the domestic gaming market (consoles and software) at approximately \$5 billion in 2010.¹⁷ The biggest contributor to the decline here is the slowdown in domestic software sales. When looking at this together with the fact that Japan's population is aging, and that the main game players in Japan are in their late 20's and 30's, one hypothesis we can draw is that the industry is now serving a segment which cannot allocate as much share of their time for games. Therefore, they have the console gaming machines but they are not playing them as much as they used to. This has led to a phenomenon known as the "departing from games". Therefore, manufacturers like Nintendo have started to look for new

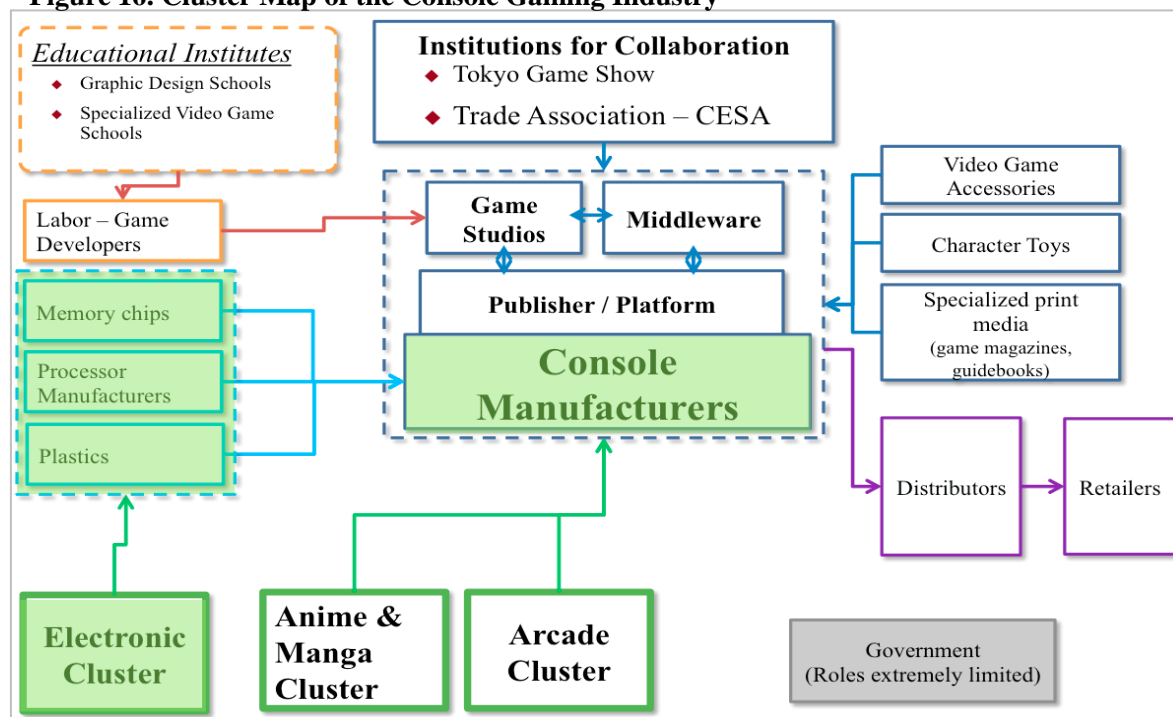
customers, such as the lighter gamers which were attracted to the simple and intuitive gaming styles of the Wii.

2.3 Cluster Map for console gaming

When we portray the Japanese console gaming industry as a cluster map, it is immediately clear that the console manufacturers have acted as the center of gravity for this industry. The related constituents have been built around this centerpiece.

The existence of the electronics cluster was an enormous contributor that fed into the technological strengths of the console manufacturers. Game studios also played a large role as an important partner to console manufacturers. However, they were able to expand internationally and become significant, because the console manufacturers had paved the paths for them abroad. Another unique partner that the Japanese console gaming cluster has is the strong ties with other content related industries such as animations, comics, and character toys. For example, the gaming industry and animation industry frequently share characters.

Figure 16. Cluster Map of the Console Gaming Industry



Interestingly, the console gaming cluster has minimal, if at all, participation of the government as a constituent. One reason is because the early console gaming industry was not thought of as a strategic industry by the government. It is only in recent years that government attention has been shifted towards this area, especially in relation to the “Cool Japan” initiatives. Another notable point is that an IFC was not instrumental in the early development of the cluster. CESA, the IFC of this cluster, was not formed until 1996.

From looking at this cluster, we can observe how the console manufacturers drove the cluster and built the platform for the industry to advance. This platform was developed on top of the strong foundations of that the electronic clusters Japan had built.

2.4 Diamond Analysis for console gaming

Figure 17 illustrates the diamond analysis for Japanese console gaming cluster. Of four conditions, we think related & supporting industries played the most important role in developing the gaming cluster.

Figure 17. Diamond analysis for Console Gaming



2.4.1 Related & Supporting Industries

The existence of related and supporting clusters which were globally competitive was most crucial in developing the Japanese gaming cluster.

[Electronics cluster (Market size \$563bn; 2009)¹⁸]

The Japanese electronics cluster was in a leading position and had number one market share in semiconductors, electronic components and crystal display panels. The proximity to these leading electronics players enabled console game hardware manufacturers to access to the most sophisticated and tailored electronic components quickly and cheaply. Nintendo took a unique strategy of outsourcing all the manufacturing to external suppliers. For instance, Nintendo sourced IC chips from Japan IBM, LSI from NEC, controlling ICs from Sanyo and Hoshiden, and Tabuchi electronics assembled the components. These are all Japanese electronics company. By outsourcing all the manufacturing and component development, Nintendo could focus on research and development on innovative products and maintain high profitability (operating profit above 20% in 90s and 2000s¹⁹).

[Animation (Market size \$2.9bil; 2005)²⁰/Comics (Market size \$6.3 bil; 2005)²¹ /Character business (Market size \$30bil; 2009)²²]

Japanese animation/comics/character business clusters are globally competitive clusters with huge domestic demand. For instance, Japanese people, regardless of age, love to read comic books, and the market size of comics (“Manga”) in Japan is \$6.3bil, whereas in the U.S. it is only \$680mil. “Hello Kitty” is a fictional character created by Sanrio and their goods are sold in more than 70 countries. Sanrio’s product sales and license revenue is estimated at around \$3.8bil.²³ The gaming industry and these clusters have strong

Figure 18.
Anime/Character Example



synergy; many games are created based on anime or manga characters and, in turn, many game titles turn into anime and manga series. Pokemon is a prime example of this successful synergy between these clusters. Pokemon was first developed as a video game but was subsequently merchandised the characters into anime, movie, manga, trading cards, and toys. Cumulative sales of Pokemon game reached 2 million copies and Pokemon related products sales reached \$38bil.²⁴

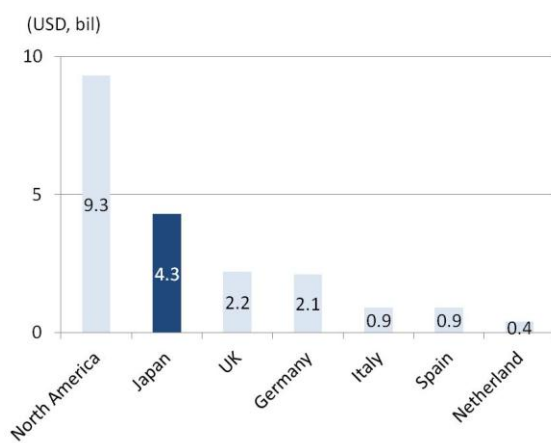
[Video arcade cluster (Market size \$8.4bil; 2009)²⁵]

There are more than 20,000 video arcades in Japan, versus only 4,000 in the U.S.²⁶ Game makers could identify successful games in the arcade and turned them into home video games. Taito's revolutionary arcade game "Space invader" is a symbolic example. Many sequels and related games were launched on the console. Space invader can be said as one of the catalysts to Japan's console gaming boom.

2.4.2 Demand Condition

Japan has huge demand for gaming. As we can see in figure 19, Japan is the second largest market for game software, and per capita consumption is the highest in the world. More than 10% of people below 30 years old play video games more than 2 hours per day²⁷. Japanese gamers are also very sophisticated consumers and willing to play the latest products. Computer

Figure 19. Software sales



Source: CESA

Entertainment Supplier's Association (CESA) hosts Tokyo Game Show every year and more than 180 thousands consumers visit the show. There are many gaming magazine (e.g., Famicom Tsushin, weekly circulation of 500 thousands²⁸) and consumers can see the ratings and reviews for all the latest software.

2.4.3 Context for Firm Strategy and Rivalry

[Hardware] As described in previous chapter, Japanese makers like Nintendo and Sony

dominated the global hardware market, having more than 95% market share before the entrance of Microsoft in 2004.²⁹ Intense rivalry between Nintendo, Sony and SEGA led to the rapid cycle of new product development, and new products were launched every several years. As a result they successfully developed innovative products like the PlayStation and the Wii.

[Software] Software developers and hardware makers had strong connection. One of the key

lessons from the failure of Atari was that the quality control of software is critical. Atari disclosed the specs of the hardware so that everyone could develop the software, which resulted in the poor quality of software and loss of customers. In contrast, Nintendo did not disclose the spec and all the software developers had to have a license agreement, and buy specialized development tools from Nintendo. All software needed approval from Nintendo to launch.

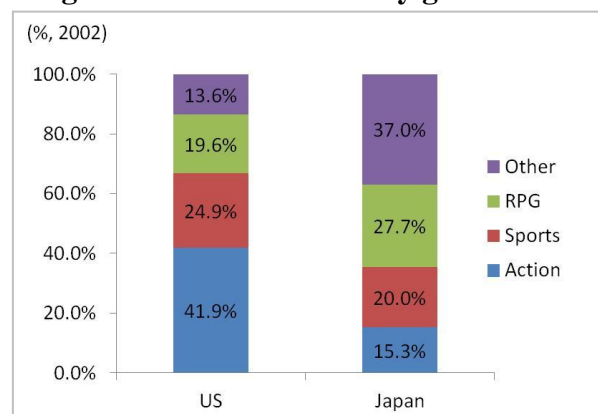
Therefore, the physical proximity and tight relationship with the Japanese hardware makers were beneficial for Japanese game developers. More than 100 software developers competed and developed globally successful products like

Super Mario Brothers and Pokemon.

Japanese software developers are facing several issues. First, they are slow in adapting to global taste. As shown in Figure 20, Japanese and American consumers have different tastes in gaming. Ironically, because Japan was such a large market, Japanese software developers can

ignore foreign markets and many did not expand their studios in other regions nor hire foreign developers. This led to a loss of global competitiveness. Second, game development cost is sky

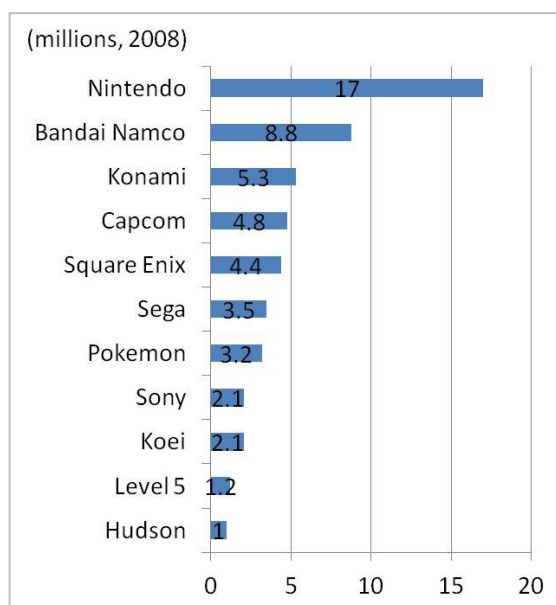
Figure 20. Software sales by genre



Source: Tokyo University

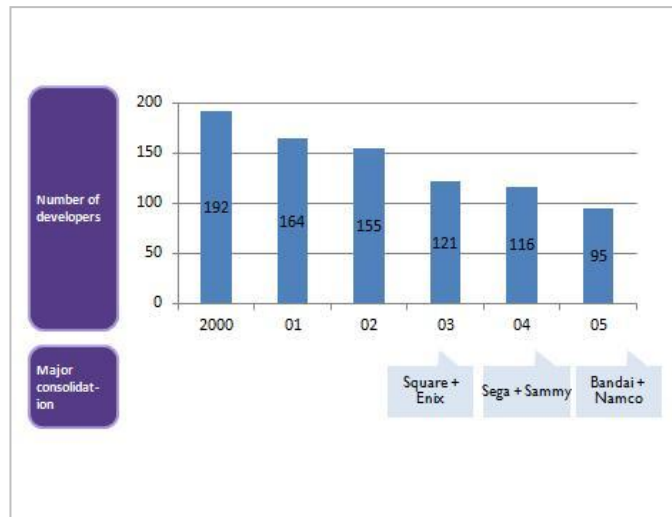
rocketing. The average development cost per game for Nintendo Entertainment Systems in the 1990s was \$100,000, but it's now \$10mm for PlayStation3.³⁰ As a result, small Japanese players cannot survive and consolidation of game developers has accelerated. Merger of Squaresoft and Enix, historically arch-rivals in the gaming industry, is a leading example of this trend. Third, Japanese software developers are slow in adopting middleware. Many U.S./Europe developers create games on middleware so that the developed software could be used in different types of platforms (e.g., Xbox, PS3 and Wii) and expand the reach to customers.

Figure 21. Major software players (sales)



Source: Shuwa Systems

Figure 22. Consolidation in software makers



Source: Shuwa Systems

2.4.4 Factor Conditions

Japan has a sophisticated higher education and abundant population of engineering graduates. In addition, there are more than 200 game related vocational schools like Tokyo Animation Game College. Talented people have joined the gaming industry and many Japanese game creators have become well known globally. Shigeru Miyamoto, known as the father of Mario, Donkey Kong and Zelda's Legend, received the AIAS³¹ video game award and was selected as Time magazine's 100 most influential people in 2007 and 2008³². Although Japan has limited venture

capital/angel investor activities, most of the console game companies are large established companies and their main financing means was bank loans. Nintendo and other Japanese companies had tight connection with Japanese local banks, therefore it was easy for them to access capital.

2.4.5 Institute for Collaboration

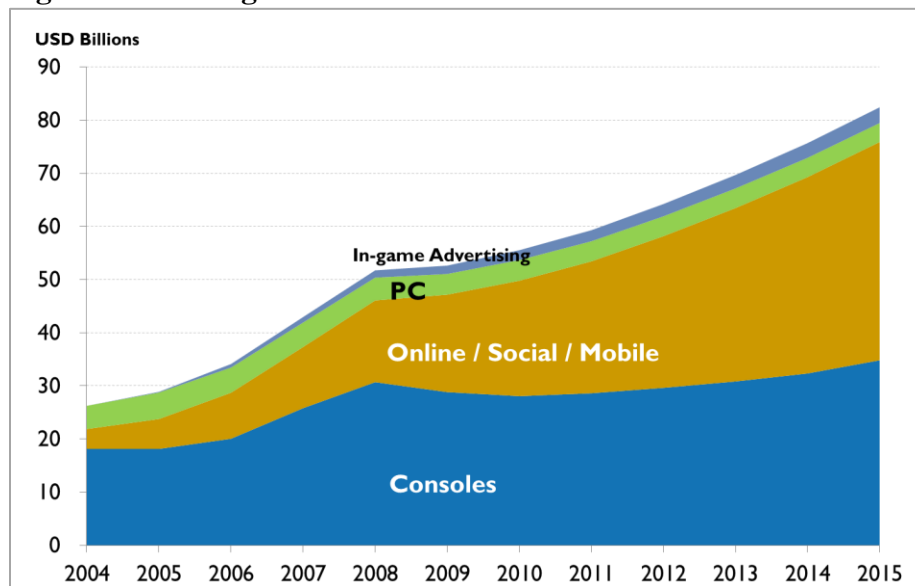
CESA is the only active gaming industry IFC in Japan. Their main activity is hosting the Tokyo Game Show, researching and publishing annual white papers on the industry, and giving Japan Game Award to distinguished people and games of the year. Their effectiveness as IFC is fairly limited due to several reasons: First, Nintendo, the biggest and most influential player in the industry does not belong to the association. Membership is also limited to gaming companies and does not include players from related industry. Second, Tokyo Game Show only focuses on consumers and there is no activity for suppliers or related industries to interact with one another, lagging behind E3 (game show in the U.S.) as a platform for collaboration. Third, CESA has neither activities for research and development nor human resource development. As we discussed, Japan is left behind in middleware development and ineffectiveness of IFC and poor collaboration among software companies is one of the main causes of this lag.

2.5. Social Gaming

2.5.1 Overview of Social Games

Until the Mid-2000, consoles like PlayStation and Nintendo Wii have been synonymous with video games. However, that is not the case anymore. According to studies by PwC, a new category of games called online and mobile social games are expected to represent half of the video game market by 2015. The video game market is expected to increase from \$28bn in 2004 to \$82bn in 2015 – almost all of that growth will come from the social games.

Figure 23. Video game market size

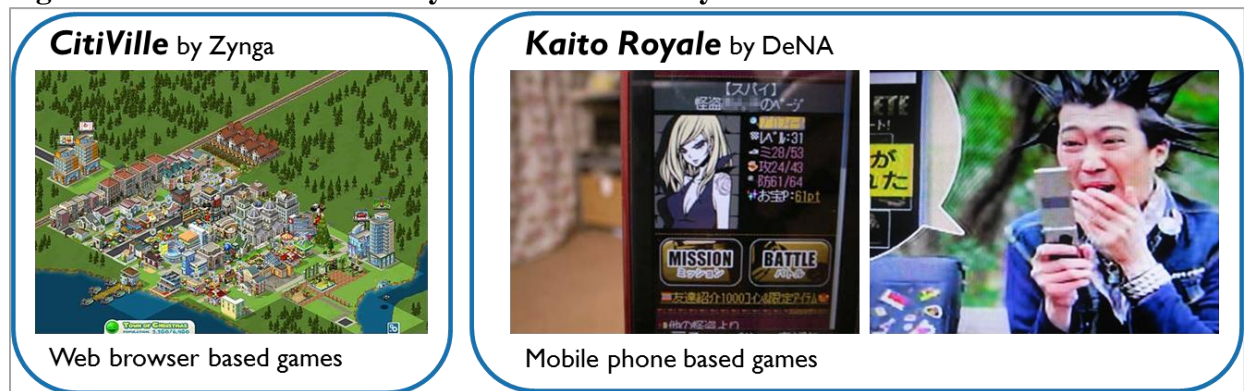


Source: Digi-Capital, PwC Global Media Outlook Study.

Social games are games that are played on social networks like Facebook in the US and GREE in Japan. It combines elements of social networks – such as the ability to interact with friends – with casual games that are simple and easy to play for everyone. CityVille, currently the most popular social game on Facebook, has 42 million active users playing the game every month. The game allows players to build a city of their own by constructing buildings and farms. Players can also visit neighboring cities developed by other players and provide each other with gifts to help the development of the city. Kaito Royale, a social game popular in Japan that runs on a mobile social gaming network managed by DeNA, has 10mm active users. In the game, players lead a group of thieves that steal “treasures” from other players and/or complete missions within the game. Players can also cooperate with one another to complete difficult missions. Apart from the fighting and stealing, there are frequent virtual events that are held within the game that players can attend to collect treasures that are only available to attendees.³³ One of the key differences between Japanese and US social games is that while Japanese social games are predominantly played on mobile phones, US social games are web-browser based and played on

a desktop or laptop. However, common to both are the fact that these games are easy to play, can be played in short intervals, and require interaction with other players. As one industry analyst describes, social games are less about “killer 3D graphics and quick hand-eye coordination” and more about connecting with friends³⁴.

Figure 24 Screenshot from CityVille and Kaito Royale



Source: Zynga, DeNA.

As the market shifts from console to the social gaming world, traditional Japanese gaming companies will need to adapt to a new competitive environment.

2.5.2 Social gaming cluster map

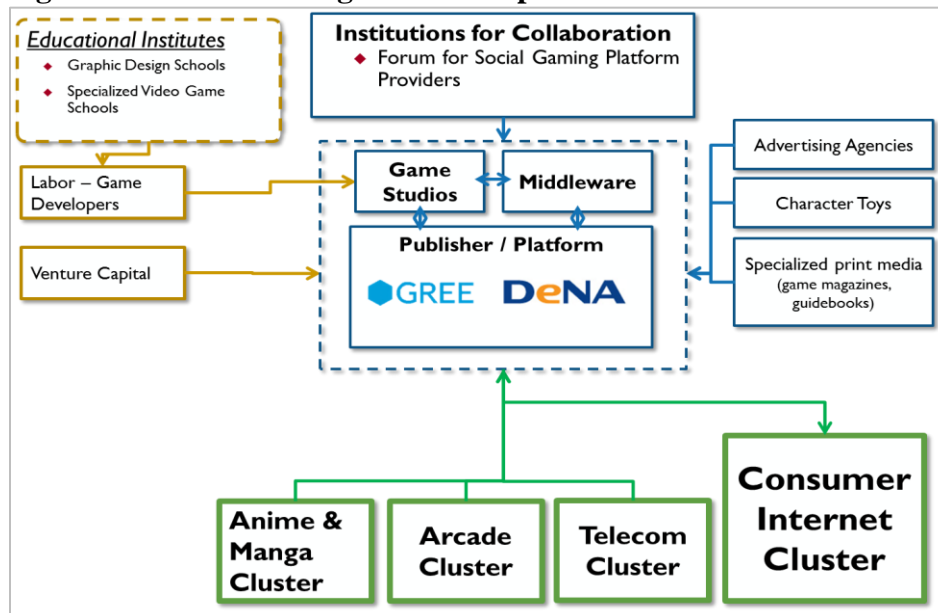
While the social gaming and console gaming cluster maps are very similar, there are important differences that can help explain the difference in global competitiveness of the Japanese gaming companies in each of the sub-industries.

At the center of the social gaming cluster in Japan are the social gaming **platform providers**.

The two dominant social gaming platform providers in Japan are GREE and DeNA. GREE and DeNA are focused exclusively on providing social games on mobile phones. Platform providers function as a place that allows **third-party game developers** to publish their games and gamers to interact with other gamers on the same platform. There are strong direct and indirect network effects with social gaming platforms. As more users join the platform, the more they can interact with one another and therefore increase the value of the game platform (direct network effect).



At the same time, growth in the user base will increase the attractiveness of the platform to game studios (indirect network effect).

Figure 25. Social Gaming Cluster Map



Major Japanese social game developers include several familiar names from the console industry such as Konami, Sega, Hudson, Namco, and Capcom, but there are several new startup game developers that are solely focused on social games such as Gumi, Gloops, Voltage, and Symphonie. GREE and DeNA also publish their own games for their respective platforms. In total, there are over 2,000 game developers in the social gaming space. Unlike console games that can cost anywhere between \$10mm to \$100mm, social games can be developed for less than \$300,000 – thereby lowering the barriers to entry into the market. Similar to the console gaming industry, most game studios provide games to both platforms. However, some game developers offer titles that are exclusive to a particular platform (GREE or DeNA). Social games are usually free to play, and are monetized through in-game purchases and advertising. Gamers are solicited to buy special items or goods to advance them in the storyline or provide them with an advantage over other players in the game.

Figure 26. Comparison between GREE and DeNA

		
(mm USD)		
Market Cap	\$6,334	\$4,637
LTM Financials (1)		
Revenue	\$1,394	\$1,709
Op. Income	729	762
Registered Users	100 million (75mm comes from OpenFeint)	36 million
# of Games	1,350	1,500
Comments	<ul style="list-style-type: none"> - established in 2004 as a social network, but shifted to social games in 2007 - In 2011, GREE acquired US social gaming network OpenFeint for \$104mm 	<ul style="list-style-type: none"> - started as a mobile auction site and transitioned to social games in 2006 - in 2010, DeNA acquired US game studio NgMoco for \$400mm
(1) LTM = Last Twelve Months		

Source: Company filings, CapitalIQ.

Figure 27. Top 20 games on GREE and DeNA (For the week of Sept 25th - Oct 1st, 2011)

GREE		DeNA	
Game title	Company	Game title	Company
1 Dragon Collection	Konami	1 Kaitou Royale	DeNA
2 Pro Yakyuu Dream Nine	Konami	2 Nouen Hokkorina	DeNA
3 Ninkyoudou	gumi	3 Settlelin	DeNA
4 J-League Dream Nine	Konami	4 Gundam Royale	Namco Bandai
5 Crows & Worst - Saikyou Densetsu	Hudson	5 Sengoku Royale	DeNA
6 Oujisama No Proposal	Voltage	6 Sengoku Collection	Konami
7 Biohazard Outbreak Survive	Capcom	7 Dainekkyo!! Pro Yakyuu Card	GMS / gloops
8 Boku No Restaurant 2	Synphonie	8 Aqua Square	DeNA
9 Darling Wa Geinoujin For GREE	Voltage	9 Space Debris	DeNA
10 Kaizokudou	gumi	10 Poppin City	DeNA
11 Omiseyasan For GREE	Geisha Tokyo Entertainment	11 Daishingeki!! Dragon Kishidan	GMS / gloops
12 Bikkuriman	Drecom	12 Obake Pet Makaron	DeNA
13 Dragon League	Asobism	13 Captain Tsubasa Mobile	Klab
14 Megumi Frontier	Will Ark	14 Ao No Exorcist	DeNA / Aniplex
15 Onmyouji - Heian Aya Kashikitan	Drecom	15 Teikoku Royale	DeNA
16 Hisho Collection	Konami	16 Disney My Land	Walt Disney Japan / DeNA
17 Ikemen Ooouku - Koi No En	Cybird	17 Daisoudatsu! Legend Cards	GMS / gloops
18 Girl Show	Synphonie	18 Kaizoku Treasure	DeNA
19 Ikenai Keiyakuketton	Arithmetic	19 Daishoukan!! Mahou Fantasia	GMS / gloops
20 Shirotsuku	Cave	20 Hyaku Man Nin No Nobunaga No Ya	Koei Tecmo / DeNA

Source: Serkan Toto, Company filings.

One of the significant differences between the social gaming cluster map and the console gaming cluster map is the **absence of the electronics cluster**. The electronics cluster had played an important role in the development of the Japanese console gaming industry. However, since social games require no specialized hardware devices (it works on any desktop or smartphones), the industry does not require coordination with the electronics cluster. The advance processing chips specifically designed for the Sony PlayStation is meaningless in the Social Gaming world. Another sector that is absent from the social gaming cluster are the retailers and distributors.

Console games require retailers to distribute the games to the public, while social games are distributed wirelessly through the internet.

While bank financing had been the main venue for capital for console game developers and platform providers, **venture capital** plays an import role in the social gaming industry as a financing source. The VC industry in Japan is small compared to the US. In a study conducted in 2007, VC investment in Japan constituted only 0.2% of the GDP vs. 3% of the GDP in the US³⁵. Professional VC fund managers are few in numbers, and most VCs are corporate backed. Established Japanese internet firms (e.g., Yahoo! Japan, CyberAgent, GMO), major mobile carriers (Softbank, KDDI, Docomo), and trading companies (e.g., Mitsubishi, Sumitomo, Mitsui) all have their own VC division. In general, Corporate VCs lack talent, analytical rigor, and financial discipline when compared to professional managed VC funds.

The **Online Consumer Internet** cluster, representing 2.9% of the Japanese GDP (\$199bn), is an important cluster to the social gaming industry³⁶. The cluster shares many of the same talents and customers as the social gaming cluster. Major Japanese internet companies include Yahoo! Japan, Rakuten, Softbank group, CyberAgent, and GMO. While many Japanese internet firms have tried to venture outside of their home market through acquisitions and partnerships, most of the revenue is still generated domestically, and have had limited success in overseas market. For example, in April 2012, Rakuten, a major Japanese eCommerce company, decided to pull out of the Chinese market as it failed to gain traction.³⁷

Similar to the console gaming cluster, the government has played little role in the development of the cluster.

On March 21, 2012, the major social network platform companies in Japan created a “Forum for Social Gaming Platform Providers” in response to public concerns on excessive purchases of virtual goods by minors. The association recently made a mandated to limit online virtual good purchases to JPY 10,000 (\$125) per month for gamers under 18 years old. It is yet to be seen on whether this forum will develop to become a full-blown IFC for the social gaming industry. Some social game companies have presented their games in the Tokyo Game Show, however, the exhibition is primarily for console game companies and yield very little benefits to social gaming firms.

Other key cluster locations for Social games include the US, China, and Korea. The US social gaming market is currently dominated by Facebook (as the platform) and Zynga (as the game developer). Facebook is the largest social network in the world, and currently has over 800mm active users. Facebook launched Facebook credit in June 2011 to capture some of the social gaming revenues generated by games published on its platform. Zynga, the largest social gaming company in the world has over 240 million monthly active users and develops games on social networking platforms such as Facebook, Google+, and MySpace. There are thousands of small and big social gaming developers in the US.

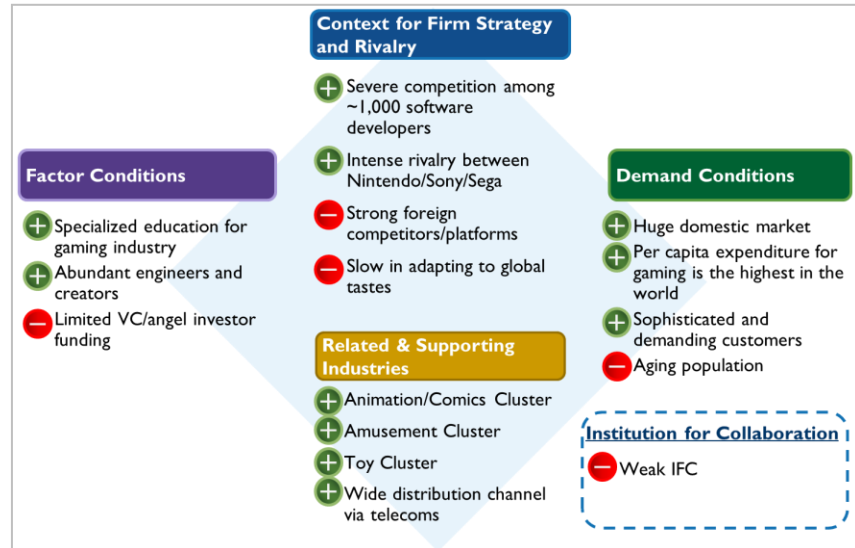
China’s social gaming market is led by Tencent, considered the largest social gaming network in Asia. Tencent has over 700mm users on its instant messaging platform and commands 30% of the Chinese social gaming market (\$410mm out of \$1.4bn).³⁸ Korea has companies such as NHN, Nexon, and Hangame leading the social gaming market. Korean game companies were the innovators in the social gaming space as they were the first ones to introduce in-game advertising.

2.5.3 Social Gaming Diamond Analysis

The diamond analysis for the social gaming sub-cluster is also slightly different from console games. Japan loses the

electronic cluster in the Related and Supporting industry and the advantage in financing in Factor conditions (as robust bank financing is replaced by the underdeveloped venture capitalists). During the console era, there was

Figure 28. Social Gaming cluster map



limited foreign competition to the hardware platforms. Now, you have Facebook, Apple's App Store, and Google's Android market that are all looking to become the platform of choice for social gaming. In addition, global competition for talented game creators has become intense.

3. Recommendations for the Japanese Gaming Industry

Our recommendations for the Japanese gaming industry consists of two major themes: How can we make sure that Japan can maintain its market leading position in the console business and, at the same time, retain its position as the world's most competitive gaming industry in the new world of social gaming. Our recommendations consist of national level recommendations for the whole gaming industry, and specific recommendations for both the console and social gaming industry.

3.1 National level

The CFO of one of Japan's leading social gaming companies, told us in an interview that one of the inhibiting factors for the social gaming industry is the lack of venture capital and restrictiveness of the Japanese securities laws against providing US style stock options. The person went through significant hurdles to create a competitive stock option plan to his US employees that was on par with their US competitors. Without a competitive stock option plan, it is difficult for Japanese game companies to attract global talent, and also reward domestic entrepreneurs and their team for the risks that they took. The government should look to further simplifying the stock option scheme and allow Japanese companies to issue stock options more freely like in the US.

The Cool Japan movement by the government can also play a positive role for the Japanese gaming industry. One of the reasons why American games are so well accepted outside of the US is due to the wide acceptance of Hollywood movies globally. US cultural export has helped shape international taste to mimic America's and therefore made it much easier for US game companies to expand internationally. In comparison, the manga and anime culture in Japan are considered sub-cultures in countries outside of Japan. Many Japanese games can only be sold in Japan and it's difficult to sell them outside of the Japanese market due to differing tastes between Japan and the rest of the world. The game industry will receive a significant boost if the Cool Japan movement can help accelerate Japanese cultural export and bring manga and anime more to the mainstream. However, the initiative requires collaboration with the private sector and the various related government agencies (e.g., METI and the Ministry of Foreign Affairs).

Furthermore, the initiative is highly under budget. For 2011, the budget for cultural activities constituted 0.1% of the GDP versus 0.8% in Korea and 0.5% in China (\$1bn in Japan, \$1.2bn in Korea, and \$5bn in China).³⁹

Japanese game companies should also look for acquisitions and international expansion opportunities that are closer to home. To date, most overseas expansion efforts into the US and Europe have had limited success. This partly might be because of the long physical distance from HQ, and also because Western market are in general highly competitive with many competitors. Instead of going to the US, game companies should look for acquisition opportunities in the Asian region. China, Korea, and South East Asia all present very promising gaming markets.

3.2 Sub-industry recommendations: Consoles

While the console gaming market is stagnating, it will still constitute half of the overall gaming market. Key recommendations for console sub-industry are:

- **Strengthen the IFC** – There has been no R&D done at the IFC level. Development for middleware software (software that aids the development of games) can be done collaboratively at CESA to minimize cost for all players in the market. While Japan had been a leader educating the best game developers globally, that advantage has been significantly diminished by the rise in competency levels globally, primarily in the US and Korea. CESA can also focus more on developing human capital for the whole industry by creating cross-company training institutes.
- **Embrace the internet / “Social Gamification” of Console games** – Console game developers need to better embrace the internet. The internet is changing the way gamers interact with the console and the games. Sony has begun to make a strong push towards interconnectivity by transforming the PS3 into a home entertainment device that encompasses games, video and music all in one. The shift can potentially mean that publishers can now distribute games online without actual retail distributions and provide opportunities for in-game purchases similar to the way social games monetize. Console

games can also add an element of socialness by allowing users to interact with one another on the web.

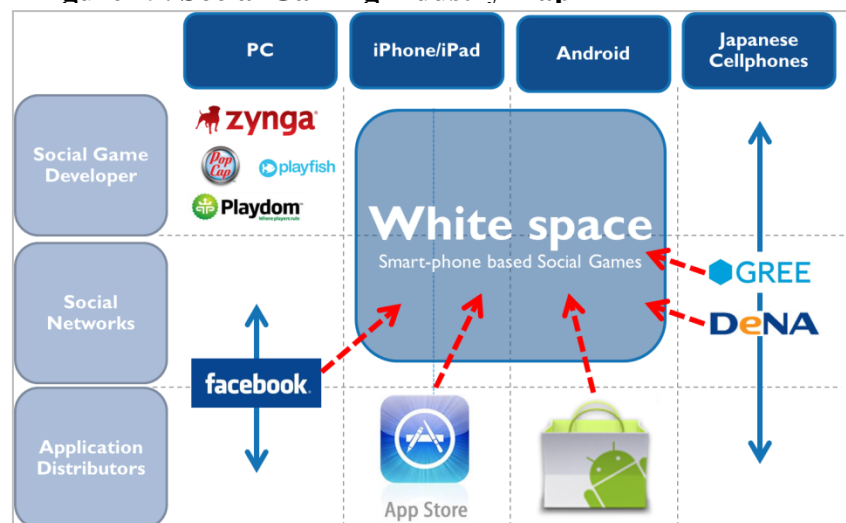
3.3 Sub-industry recommendations: Social Games

Social gaming is the future of the gaming industry. As it currently stands, Japan is behind the US in regards to the competitiveness of the industry. Below are our recommendations to the Social Gaming companies:

- **Create a winning platform** – one of the main reasons why Japanese game developers were able to expand globally in the 1990s was because the console manufacturers (Sony, Nintendo, Sega) were all Japanese. The platform is at the center of the game industry, and it is imperative that either GREE or DeNA win the global social gaming platform war for the sake of the Japanese gaming industry. GREE and DeNA are currently trying to

become the dominant social gaming platform on mobile devices. Luckily for Japan, no one has really figured out the market for social-mobile games. Facebook is mostly a

Figure 29. Social Gaming industry map



Source: Globis Capital Partners.

social platform on the desktop, while the Android Market and the App store are more about distribution of applications to mobile users rather than creating a social community. However, everyone is moving very quickly in to the mobile-social gaming space and competition will be stiff.

- **Create a strong IFC** – We recommend that the Social gaming industry develop the Forum for Social Gaming Platform Providers to become a full-blown IFC. The Forum can expand to include social game developers and promote collaboration among the various platform providers and the game developers.

¹ Cabinet Office (2011).

² In Japan, most of the proposed measures should be approved both in the House of Councilors (the Upper House) and the House of Representatives (the Lower House). Hence, the fact that none of the single party has the majority in both houses are slowing down the decision making process.

³ UNDP Human Development Report 2007/2008

⁴ OECD Factbook 2009

⁵ Porter(2008) On competition, Harvard Business Review

⁶ New Global Competitiveness Index, Institute for Strategy and Competitiveness, Harvard Business School

⁷ Kondo T.(2009)

⁸ Cabinet Office (2011)

⁹ DBJ(2005)

¹⁰ Ministry of Internal Affairs and Communication (2011)

¹¹ METI(2009). In EU, for example, 23.5 billion dollars was committed for cross national R&D among member states for innovation (HBS case)

¹² METI (2011)

¹³ CESA

¹⁴ Blake, Snow. “The 10 Worst Selling Consoles of All Time”

GamePro Online, July 30, 2007.

<http://web.archive.org/web/20080905175406/http://www.gamepro.com/article/features/111822/the-10-worst-selling-consoles-of-all-time/>, Accessed April 2012

¹⁵ Sony, Nintendo,annual report

¹⁶ Microsoft annual report

¹⁷ CESA

¹⁸ Ministry of Economy, Trade and Industry

¹⁹ Nintendo Annual Report

²⁰ Media Development Research Institute

²¹ Publishing Science Research Center

²² Yano Research Center

²³ Fuji Keizai

²⁴ Shuwa System

²⁵ Japan Industry Amusement Association

²⁶ Shuwa System

²⁷ CESA

²⁸ Shuwa System

²⁹ Nintendo, Sony, Microsoft, GamePro

³⁰ Shuwa System

³¹ AIAS stand for Academy of Interactive Arts & Sciences

³² Wikipedia

³³ Willis Wee, “Mobage’s Kaito Royale has over 10 Million Gamers.” <http://www.techinasia.com/dena-mobage-kaito-royale>. Accessed April 23rd, 2012.

³⁴ Sarah Lacy, “Social Gaming Scores in the Recession,” *BusinessWeek*, May 1, 2009.

³⁵ Hamada, Y., Kirihata, T., Katagawa, M. (2007). Investing Activities of Japanese Venture Capitalists and Venture Capital Firms (Working Paper No. 87). Retrieved from University of Kyoto website: www.econ.kyoto-u.ac.jp/~chousa/WP/87.pdf

³⁶ Nomura Research Institute, “Value of Japanese Internet Economy Report”. http://www.internet-keizai.jp/pdf/Economic_impact_of_the_Internet_en.pdf. Accessed April 23, 2012.

³⁷ Kachi, Hiroyuki. “Rakuten to vacate China Online Mall”, *Wall Street Journal*. April 20, 2012.

³⁸ “In Chinese Online Gaming, 8.7 billion in RMB in Revenue, Tencent is Still King”.
<http://www.techinasia.com/online-gaming-china-stats/>

³⁹ “Promoting “Cool Japan””. *The Japan Times*. 15 August 2010. Accessed April 23, 2012.

References

- Cabinet Office, Government of Japan. “Program for Promoting Japan as an Asian Business Center and Direct Investment into Japan”, finalized at the Conference on Promoting Japan as an Asian Business Center and Direct Investment into Japan, December 16 2011
- Cabinet Office, Government of Japan. “*Higashi Nihon Dai Shinsai ni yoru stock kison gaku no suikei houhou ni tuite* (The way to estimate the damage of Great East Japan Earthquake)”. 2011 (in Japanese).
- CIA World Factbook, “Japan”, <https://www.cia.gov/library/publications/the-world-factbook/geos/ja.html>, accessed March 2012
- Computer Entertainment Supplier’s Association, “2011 CESA Game White Paper”, 2011.
- Development Bank of Japan, “*Aichi ken ni okeru jidousha sangyou no genjyou to hatten kanousei* (Automotive cluster development in Aichi Prefecture)”, DBJ Tokai Report Vol.2, 2003 (in Japanese).
- Economic and Social Research Institute, “Report to Corporate behavior in FY2010” http://www.esri.cao.go.jp/jp/stat/ank/h22ank/h22ank_houkoku.pdf, accessed April 2012
- Hoshi, Takeo, and Takatoshi Ito. “Defying Gravity: How Long Will Japanese Government Bond Prices Remain High?,” Paper presented at the conference on Economy of Japan at the International Monetary Fund, DC. 11 August 2011.
- Kondo,T. “*Sozei tokubetsu sochi no minaoshi/toumeika ni muketa konngo no kadai* (Issues toward tax expenditure review and transparency)”, *Keizai no Prism* No 72, 2009 (in Japanese).
- Maeda, E. *Japan’s Economy After the Great East Japan Earthquake*. Presentation material used at his presentation at the International Monetary Fund. July 2011.
- Hiroki Tachibana, “Game Gyoukai no Doukou to Karakuri Ga Yoku Wakaru Hon” (Trend and dynamics analysis for gaming industry), Shuwa System, 2010 (in Japanese).
- Ministry of Economy, Trade and Industry, “Issues in electronics and IT industry”, <http://www.meti.go.jp/committee/summary/ipc0002/report06.pdf>, accessed April 2012
- Ministry of Economy, Trade and Industry, *Industrial Cluster Policy Brouche 2009*. Tokyo: 2009.
- Ministry of Economy, Trade and Industry, *Industrial Structure Vision 2010*. Tokyo: 2010.
- Ministry of Economy, Trade and Industry, “Cool Japan Strategy”, http://www.meti.go.jp/english/policy/mono_info_service/creative_industries/pdf/120116_01a.pdf, accessed April 2012

Ministry of Internal Affairs and Communication, *The Statistical Handbook of Japan 2011*. Tokyo: 2011.

Media Development Research Institute, “Overview of Japanese animation industry”, <http://www.mdri.co.jp/review/index.html>, accessed April 2012

OECD. *Factbook 2009; Economic, Environmental and Social Statistics*, 2009

Porter, M., E. and Ketels, C. “European Integration; Meeting the Competitiveness Challenge”, Harvard Business School, Case 9-708-421, 2009.

Porter, M., E. *On Competition*. Boston: Harvard Business School Press, 1998

UNDP. *Human Development Report 2007/2008; Fighting climate change: Human solidarity in a divided world*. New York: 2008.

WIPO. *World Intellectual Property Indicators Statistics Database October 2011*. Geneva: 2011.

Yano Research Institute, “Research and analysis paper on Japanese character business”, <http://www.yano.co.jp/press/pdf/841.pdf>, accessed April 2012