

# Strategies of Japanese Electronics Manufacturers in 21st Century

Katsuaki Onishi  
Senshu University  
Japan

## Abstract

Japanese electronics manufacturers involved in electronics equipment, appliances, and parts industries have faced difficulty. The fact such as giving up domestic production of flat panel TV would symbolically show their struggle. Their international market share of main electronic equipment has decreased. They have been experiencing intensive competition with the competitors from the United States, South Korea, and China. The crisis they have been facing is not like they have experienced in the past. Drastic restructuring and strategies broadening the business to cross-borders would be required. In my paper, their strategies for conducting international business would be explored and reconsidered.

## 1. Introduction

Japanese electronics manufacturers have been leaders of Japanese entire industry since economic growth period in 1960's. However, since Plaza Accord, their price competitiveness has been damaged and the offshore production has increased due to Japanese Yen appreciation; thus, the export volume from Japan has slowed down. Whereas, foreign direct investment to other countries has increased and domestic demand expansion policies by Japanese government impacted the export structure of Japanese electronics manufacturers. My report is the empirical study. So, there are three highlights for electronic equipment trades. Firstly, during slow down period in 1990's, the export volume of the electronic equipment in total export volume rapidly decreased. Secondly, the direction of the export had been shifted from the United States to Asian region. Last, the portion of electronic parts export dramatically increased. The Yen appreciation weakened price competitiveness and made electronics manufacturers produce their product in Asian region for obtaining the production cost advantages. This fact created the expansion of electronic parts export to produce final electronic equipment products. Then, the import of these final products from Asian region to Japan increased. The trade between Japan and Asian region has been growing on the basis of this background. Yet, under this condition, the flat panel TVs have been developed and produced in Japan, and this movement was considered to stop engineering technology outflow from Japan, package the development and production leading faster business management. It was considered as 21st century model for Japanese electronics manufacturers to survive in international business competition. But the model is no longer functioning, and

the package of the development and production in the advanced domestic factories has not been successful. My methodology has three stages. At the start, I try to confirm the performance of companies by annual reports. Next, I research the companies strategies under the sever environment. At last, I try to sagest the future trend of Japanese Electronics Manufacturers.

So, at the fiscal year ended March 31st 2012 (Many Japanese companies' fiscal year starts April 1st and ends March 31st), the major electronics manufacturers reported net loss. Sharp has proceeded to sell 46.5% of its TV panel factory located at Sakai City in Osaka to another group. On the other hand, the development and production of DRAM by Japanese companies have also weakened. Since 1980's, Japan led its production, development of new generation products, and market size. In 1976, 256K DRAM was successfully developed with the cooperation of Japanese government institutions, and since then IC production in Japan was leading the world. However, after 1990's, South Korean companies have expanded their presence, then DRAM production in Japan became mere name. In 2012, Elpida Memory filed an application for the commencement of reorganization proceedings under the Corporate Reorganization Law. The way of Japanese development such as cooperation among companies and cooperation between companies and government institutions is no longer considered as successful growth model. Japanese electronics manufacturers have been losing their presence in the market of not only flat panel TV and DRAM but also other electronic equipment such IC and personal computers.

The crisis that Japanese electronics manufacturers are facing is exceptional and it has largely been affected by the earthquake and tsunami hit, financial instability in Eurozone, flood in Thailand, and others. In such circumstances, drastic restructuring and strategies broadening the business to cross-borders would be required for them to overcome the crisis. In 2014, they recovered their performances through the restructurings except Sony. It is remarkable fact. But I think this fact is not mean fundamental solution. So, I explain three conclusions on my paper. Japanese electronics manufacturers are facing at the serious crisis. They take out the drastic restructuring. But they can't realize the fundamental solution.

## 2. Deteriorated corporate earnings and business reorganization

### 1) Deteriorated corporate earnings

Table 1: Corporate Earnings of Japanese Electronics Manufacturers  
at Fiscal Year ended March 31, 2012 and May 15, 2014

Company	Year	(100 million JPY)				
		Revenue	Change(%)	Operating Income	Change(%)	Net Income
Panasonic	2012	78,462	-8	437	-90	7,722
	2014	77,365	5.9	3,051	89.6	1,204
Sony	2012	64,932	-10	-672		4,566
	2014	77,700	14.3	260	88.7	-1,300
Sharp	2012	24,558	-19	-375		3,760
	2014	29,271	18.1	1,085		115
NEC	2012	30,368	-2.5	-737		1,103
	2014	30,431	-0.9	1,061	-7.4	337

Hitachi	2012	96,658	46	4,122	-7	3,471
	2014	96,162	6.4	5,328	26.3	2,649
Mitsubishi	2012	36,394	2,254	4		1,120
	2014	40,543	13.7	2,351	54.6	1,534
Toshiba	2012	61,002	-5	2,066	-14	737
	2014	65,025	13.5	2,907	47	508

Source: Nikkei Shinbun, May 12, 2012 and May 13, 2014 edited by author

The stock market value of growing Asian electronic companies such as Samsung and Tencent has been remarkable. According to Thomson Reuters, in terms of the market value, Samsung was ranked first and TSMC was ranked second in electric and IT sector. Those who involved in world growing smart phone market such as software companies were upper ranked. 9 from South Korea, 8 from Taiwan, 9 from China, and 4 from India were ranked within top 30. As of December 2011, the market value of Samsung was 185.7 billion Yen and that of Panasonic was 22.9 billion Yen. In regards to the number of patent application filed to WIPO in 2011, ZTE from China took over the first place and Panasonic dropped to the second.(1) With in the top ten companies, 6 Asian companies were ranked and Chinese companies were listed first and third places.

	Table 2: World-wide Production Major Electronics (2010)			
	Flat panel TVs	Digital Cameras	Mobile Phones	PC
Japan	13,500	23,130	24,600	5,350
China	84,290	92,230	656,600	318,420
South Korea	5,150	470	194,200	1,200

Source: The Publications of JEITA (Japan Electronics and Information Technology Industries) (2012)

Table 2 indicates world- wide production of major electronics. The volume of Chinese production becomes larger than other. Regarding production of electronic parts, the share of Japanese companies has gradually decreased. The Table 1 shows the result of annual corporate earnings ended March 31st 2012 and March 31st 2014. Hitachi, Mitsubishi Electric, and Toshiba reported positive performance; however, other electronics manufacturers announced negative results. The net loss of Panasonic and Sharp were 772.2 billion Yen and 376.0 billion Yen respectively which broke their worst records. Elpida Memory which will be required its reorganization has continued its negative result. Bubble burst in Japanese economy in 1991, Asian currency crisis in 1997, IT bubble burst in 2001, and financial crisis triggered by Lehman Brothers' collapse have put Japanese electronics manufacturers in difficult position. South Korean companies benefited by Korean Won depreciation have taken advantages in global flat panel TV market and Sharp, Panasonic, and Sony have lost their presence with assist of Yen appreciation. It is said the flat panel TV spread is over 90% so

that even the lower price would not lead sales. Then, it is said the factory utilization has been below 70%, and the standardization of the manufacturing facility and main integrated circuit has accelerated commoditization of the products in such supply excess circumstances. This commoditization of the product has caused the difficulty on product differentiation; thus, lower pricing has been accelerated, which leads intense price competition.

In spite of the prevention for engineering technology outflow, domestic production packaged with development and manufacturing, and cooperation of governmental institutions, still Japanese companies have struggled in intensive price competition and extreme Yen appreciation. They closed some facilities in Japan, deteriorated the performance to net loss, and have reconsidered their internationalization. In 2014, they recovered their performances through the restructurings.

It was 41% in 2008, 40.1% in 2009, and then 39.7% in 2010. South Korean and Chinese companies advanced the entry to the emerging countries market, whereas Japanese companies have struggled to do it due to extreme Yen appreciation. At the end of year 2011, Yen to US dollar appreciated about 30% compared to the end of year 2007. On the other hand, Won depreciated 20% in the same time period. In spite of the prevention for engineering technology outflow, domestic production packaged with development and manufacturing, and cooperation of governmental institutions, still Japanese companies have struggled in intensive price competition and extreme Yen appreciation. They closed some facilities in Japan, deteriorated the performance to net loss, and have reconsidered their internationalization.(2) Sharp invested 430 billion Yen to establish the factory in Sakai, but flat TV sector has been slowing down, plus solar panel sector has faced difficulty. Panasonic's restructuring is ongoing and concentrating environment friendly products such as battery for hybrid automobile.

## 2) Selection and concentration

### a. Stop the production

Facing remarkable deterioration of the result, the electronics manufacturers have closed factories and have removed their profitless operations. Their selection and concentration has been conducted. Elpida Memory which filed an application for the commencement of reorganization proceedings under the Corporate Reorganization Law has delegated its reorganization to Micron Technology from the United States. It would be necessary for Renesas Electronics to obtain the support from NEC which is major shareholder. Reorganization through withdrawal of profit operation and concentration to the selected operations has been proceeding. Toshiba, Hitachi, and Sony have combined their small size LCD TV operations and created the company named Japan Display with the cooperation of the governmental fund to run the LCD TV operation. It has established the advanced small sized LCD TV panel factory with 100 billion Yen investment. Although Japan Display will be top market sharing company, the growth speed of the Asian competitors is tremendous. Social community development business sector such as environment friendly city development, and information and communication technology (ICT) business sector are considered as another business area to be concentrated.

In regards to the recent case of factory withdrawal, TV production related operation sector closed the most factories, 10 factories. For example, Panasonic stopped two out of three

plasma display factories in Amagasaki and has run one left factory to decrease its production volume about by half in order to achieve efficiency of loss making TV manufacturing division. It also sold LCD panel factory in Mobarra and will concentrate LCD panel production in the factory in Himeji. Panasonic intends to shift the operations to manufacture highly value added products. Another topic related to Panasonic, the value of lithium-ion rechargeable battery gained through acquiring Sanyo has been depreciated so that the expected profit by the battery sales might not be achieved.

On the other hand, the smart TV (Internet accessible TV) and organic electroluminescence display TV have been expected as next generation engineering technology. The production line for testing this technology will be started in Himeji factory. Commercializing the technology for not only just for TV but also for installing automobile and medical equipment is planned.

Sharp was successful with its LCD technology and brand strategy in TV market. The massive TV factory in Kameyama and Sakai were utilized as LCD panel production. However, its LCD TV business division has been deteriorated due to price competition and extreme Yen appreciation. It reported 456.6 billion Yen loss. Its LCD depended business needs to be changed, and accepted investment by Hon Hai. It intends to shift its target from domestic consumers to emerging countries consumers, and is to promote electric equipment such as refrigerator for new targets.

#### b. Expand the emerging markets

Sony has been recognized for its innovative product development and design, but it failed to address the changes by the Internet and has troubles to read the market trend. As stated, it reported 376 billion Yen net loss in the fiscal year ended March 31st, 2012. Sony reported net loss in the fiscal year ended March 31st, 2014. Its TV business division has been making operating loss for nine consecutive fiscal years. Many product lineups and quality improvement in electric equipment industry overall brought Sony troubles to achieve product differentiation by the quality. Its TV sales expansion plan was modified and the items were reduced to make profit. It plans to minimize costs to achieve this goal. Also, it plans to sell or pull out business divisions that are less related to and create less synergy effect with its electronics business which is its core business. While it plans to expand the production and sales for emerging markets, TV manufacturing factories will be smaller scale. Another its issue is that the continuous restructuring let skilled workers leave the company, which has damaged its strength of product development. Eventually this might negatively affect its brand and impact the potential sales volume of smart phones. Additionally, it attempts to start business in medical market by utilizing its sensor technology and tries to have the partnership with Olympus.

NEC fell behind schedule to supply its products in rapid growing smart phone market, and its cell phone business division has generated two year consecutive operating loss. As stated, it reported 110.3 billion Yen net loss in the fiscal year ended March 31st, 2012. It retreated semiconductor and personal computer business divisions by 2011, but still dependence on domestic market and lower profit condition are ongoing. It invests in business areas such as cell phone, server, information system service for businesses, and lithium-ion rechargeable battery, which are considered as growing sectors.

### 3. Modification on costly structure and internationalization

#### 1) Reforming structure

Procurement cost reduction would be one of goals to achieve by shorter term product development with cost reduction, standardization of parts and utilization of ICT. They have internationally reduced and concentrated their production bases, and implemented co-procurement. The expansion on procurement in cross-borders, and concentration of production bases dispersed in the world will be planned. The business in the emerging countries requires the cost competitiveness, or the development of low price products. In domestic market, since the increase on the number of parts for new products, it is tried to create one LSI to function for four of all current types of LSI so that just one type of LSI could be used for multipurpose. The factories have also been changed for multipurpose utilization to produce multiple products, and human resources have been flexibly combined to the factories. Also, operating system established by the region has been integrated by using cloud computing, which enables to reduce the number of computer servers and operation cost. The employees reduced plans have also been doing. Manufacturers like Panasonic and Sony have sought the cost structure reformation by reduction on production line process, standardization of main parts, reduction of parts, and shorter period of product development for new product, maximizing economy of scale, enhancing EMS utilization, and the modification of supply chain.

Regarding some electronic parts and raw materials, NEC has tended to purchase them directly from the producers to achieve concentrated procurement. Standardization of the parts has been continued, and one time purchase for the key component, which used to be purchased by business divisions separately, will be aimed. Screening partner companies, developing software in China have also been conducted. Regarding their issue to expand the sales in other countries, NEC acquired business support system (BSS) business from Convergys in 2012 to address the market in cross-borders with stable earnings.

#### 2) Restructuring and Layoff

Lowering wages and layoffs by the cost structure reformation have been serious for the employees. According to Kogyo Tokei, the data collected by the Ministry of Economy, Trade, and Industry, the employees within the industry have decreased by 82,648 from 559,413 in 2005 to 476,765 in 2009.

NEC will be in the face of worsening performance due to the rise of South Korea and China, urge rise in labor costs of domestic, and the delay of structural reforms, thus, it advances the fundamental reorganization of the business. Project aims to strengthen services for improving the profitability and increases overseas sales ratio to 25% with deploying a drastic restructuring at the same time. About 20,000 layoffs were already executed in 2009, then about 10,000 layoffs in total are to be conducted in 2012 mainly for IT service, communication system, and energy related divisions. Reduction by 10 to 40% of executive compensation, by 5 to 7% of managers' salary from April, and proposal of 5% salary reduction to labor union have been planned to restructuring. Total member of labor union is

about 47,000 including the related group companies, and about 10 billion Yen labor fee reduction in each year is estimated. Combined with stated 10,000 layoffs, the fixed cost will be reduced by 40 billion Yen. Sony also closed its electronics division's factories in eight of production bases and will layoff 10,000 employees.

Panasonic determined to withdraw businesses which have been in loss in the past three years by March 2012. Forty of production bases will be reduced. 15,000 of layoffs or reassignment are going. Additionally, employees in the head office will be reduced by about half. 360,000 layoffs as of March 2011 were conducted, and layoff project to reduce the number of employees to below 330,000 by March 2013. On the other hand, it plans to recruit college 350 graduates to form labor forces for new business field such as clean energy. Sharp also plans to layoff and wage cut partly. In 2011, 1,000 layoffs in its Kameyama factory were executed since 2008. Renesas Electronics considers selling Tsuruoka Factory to TSMC and 14,000 layoffs.

In 2014, The Japanese electronics manufacturers recovered their performances through the restructurings. There is a side effect regarding these restructurings. The headhunting companies such as Global Business Creation starts sending engineers and managerial personnel in finance, logistics, and other various service sectors to China. Engineering technology outflow from Japan is inevitable. Japanese engineers sustain South Korean and Chinese companies.

### 3) New internationalization and partnership formation versus South Korea

The Japanese electronics manufacturers have continued their internationalization such as overseas production, strategic alliance with multi-national companies, and recruiting international-minded human resource. In recent years, integration of PC business division by NEC and Lenovo, sales of home electrical appliances business by Panasonic to Haier, and cancel of LCD panel business joint venture by Sony and Samsung have been seen. Capital inflow from cross-borders to Japan has slightly increased to achieve high quality production. In 2014, the Japanese electronics manufacturers recovered their performances through the restructurings. PC in the world has mainly been assembled by EMS in Taiwan. EMS even initiates product design and material selection, and now the EMS takes the initiative as core player for assembling.

Under this circumstance, the Japanese electronics manufacturers are losing opportunities of exchanging information, and even material manufacturers start going cross-borders to survive. Although they maintain the studies of innovative primary technologies in Japan, the improvement to address customers is necessary in local countries. The Japanese digital material manufacturers have accumulated their know-how within the production process by the discussion with users. Now they are separated from production process and have to address demand bipolarization. Naturally enough, mass production system has been structured for lower price electronic equipment, but customers in other countries became competitors in some cases. In order to catching up with Samsung, forming partnership across boundaries has been seen. It also has subsidiary in Taiwan and forms partnerships with others; however, it ends up with filing an application for the commencement of reorganization proceedings under the Corporate Reorganization Law.

## 4. Deteriorated corporate earnings and business reorganization

### 1) Lack of originality

It is difficult to determine that Japanese electronics manufacturers are able to revive by stated restructuring and strategic alliance. The problem they are facing is that their core business, LCD and plasma, has been unsettled. They are in behind for the shift from PC to Internet, from Windows & Intel to Apple & Google. Also they need to catch up with lifecycle speed of digital equipment, commoditization, and software.(3)

Restructuring, layoff, and wage cut are not enough to reform the foundation of the business. Although they maintain the research and development investment during downturn economy and patent rankings shows Japanese companies at upper ranks, the strategies they have for current crisis could not be considered as resolution for their business in 21st century. Their originality and creativity seem to slow down.

Major manufacturers aim to form business model by utilizing EMS. Layoff, even though they have some retained earnings, and reassignment were conducted to try to achieve temporary positive result. Not short term result improvement by instant layoff and restructuring, but reforming the future-oriented structure with creativity for long term business is necessary. Respecting employees and leading their creativity to the innovation which sustains environment friendly business are important. There are still issues in area of human resource, research and development, and massive investment. It is important to utilize global human resources in order to reform self-sustained and original organization structure. They need to educate the international-minded researchers to address global business among advanced countries and emerging countries, and organize the structure to challenge the original research and development.

### 2) Insufficient way of research and development

Strong leadership of the president, cooperation with the government, and the open innovation has led Japanese electronics manufacturers' originality. Depending on knowledge and experiences limited to Japanese people is not sufficient, and it is necessary to develop training or education program to have multinational labor forces. The competitors in Europe and Asia have strengthened their research and development, and caught up Japanese business priority. It is necessary for Japanese electronics manufacturers to structure the unique research and development systems. I hope the collaboration project of Sony and Panasonic for the EL/TV development. (4)

### 3) Action for sustainability

Ongoing reformation projects are not for structuring long term relationship among Asian countries. Such as alliance formation with Taiwan is for catching up South Korean manufacturers and Apple. For example, Federal Labor Association (FLA) points out issues of working environment, overtime work, unpaid wage, and security of factory in China which is involved in Hon Hai group.

Production in China has been pointed out as problem, and Japanese companies look for the way companies should be in Asia in 21st century. Not just catching up in the market competition or being follower, but being innovative leader to structure new business environment. To set appropriate competition rules for 21st century and to form stable trade structure are issues.



## References

- (1) “Annual of Electronic Equipment” (2012), Chunichisha, p.76
- (2) “World- wide Production of Major Electronics” (2012), Denshi Jouhou Gijyutsu Sangyou Kyokai. p.5
- (3) Stoneman, P. (2010), “Soft Innovation-Economics Product Aesthetics and the Creative Industries”, Oxford University Press, pp.47~51.
- (4) Onishi, K. (2011)  
, “The Analysis of Japanese Information Industry”, Yuigakushobou. p.264.