Chapter 3 Japan's current situation and direction of progress after the economic crisis
Section 2 Course of Japan's external economic policy

1. Respond to the structure of world's new demand

(1) Procuring emerging markets

(A) Strategy to procure emerging markets

Emerging economies[1] including the Asian economic zone, which have sustained high economic growth among the world, are drawing a close attention as "market" backed by the expansion of the middle-income group. So far, many Japanese companies have introduced their products and services of high function or of high added value targeting at markets mainly in developed countries or the high-income group in developing countries backed by their high technology. However, for emerging markets that are expected to grow even more, it is required to take measures that are different from those for the existing markets.

This chapter discusses and analyses about growing emerging markets, including status and forecast of income groups, competitiveness and course of measures to procure emerging markets.

The criteria of each income group is as follows,

Income group	Household disposable income per annum
High income group	35,000 dollars and above [2]
Middle income group	5,000 dollars and above[3] ~ Below 35,000 dollars
Low income group	Below 5,000 dollars

* There may be a case where the following groups are applied.
Upper middle income group: 15,000 dollars and above ~ below 35,000 dollars
Lower middle income group: 5,000 dollars and above ~ below 15,000 dollars~

(a) Emerging markets that are growing rapidly

Since the world economy crisis, emerging economies, which include China and India have recovered from the crisis and enjoyed their steadily growing economy backed by its enormous domestic demand, and now they are drawing an attention as "market" amid the situation where demands in Europe's advanced nations have been receding. The GDP scale categorized by country as in 2009 shows that 8 emerging economies are ranked within top 20, with China as world's Top 3. When GDP of 27 emerging economies are combined, it accounts for nearly 30 percent of the total GDP of the world economy. (Figure 3-2-1-1)

Table 3-2-1-1 GDP scale top 20 countries

[1] In this report, following 27 countries and regions are subjected to the emerging economies, taking into consideration of the economic scale and data restriction on some of the emerging economies: China, Hong Kong, Korea, Taiwan, India, Indonesia, Thailand, Vietnam, Singapore, Malaysia, Philippine, Pakistan, Turkey, United Arab Emirates, Saudi Arabia, South Africa, Egypt, Nigeria, Mexico, Argentine, Brazil, Venezuela, Peru, Russia, Hungary, Poland and Rumania

[2] Approximately 70% of the population in the developed countries (G7) earns income of more than 35,000 dollars in 2009 "Euromonitor International 2010". In addition, a 5-year average of GDP per capita during the period of between 2004 and 2008 in Japan is approximately 35,000 dollars. (Estimated figure based on IMF: "World Economic Outlook Database" (April 2010).

[3] It was addressed in Master Card International (2006) that it is around 5,000 dollars in income when consumption trend changes from purchases limited to necessities to discretional purchases. (While paper on International Economy and Trade 2008 Chapter 1, Section 3 Footnote 6)

Country	GDP -2009 (Trillion USD)	Growth outlook (%)	
		2010	Average 2010~2015
USA	14.26	3.10	2.56
Japan	5.07	1.90	1.87
China	4.91	10.04	9.75
Germany	3.35	1.21	1.60
France	2.68	1.52	1.97
England	2.18	1.34	2.46
Italy	2.12	0.84	1.26
Brazil	1.57	5.50	4.33
Spain	1.46	-0.41	1.19
Canada	1.34	3.14	2.73
India	1.24	8.78	8.25
Russia	1.23	4.00	4.09
Australia	1.00	2.96	3.27
Mexico	0.87	4.16	4.53
Korea	0.83	4.51	4.30
Nederlands	0.79	1.30	1.63
Turkey	0.62	5.20	3.99
Indonesia	0.54	6.00	6.57
Switzerland	0.49	1.53	1.85
Belgian	0.47	1.15	1.58
27 Emerging economies	17.05		
Worldwide total	61.22		

Note: GDP of China, India, Russia and Switzerland are estimated figures provided by IMF. The countries indicated in yellow are emerging economies.
Source: World Economic Outlook Database, April 2010 (IMF)

Such economic growth in emerging economies has brought about the expansion of the middle and high-income class population. While the developed nations have an issue of declining birth rate and aging society, many emerging economies are featured as having comparatively young population. The median age[4] of 27 emerging economies is about 10 years younger than that of developed countries (Average age of G7) (Figure 3-2-1-2), and it is expected for the middle and high-income population to expand in the future (Figure 3-2-1-3), which suggests that purchasing power of emerging economies will expand.

<(Reference) Groups of emerging economies that are drawing an attention>

Following are the lists of groups of emerging economies that are now under the spotlight as a growing market

Table 3-2-1-2 Major emerging economies median age

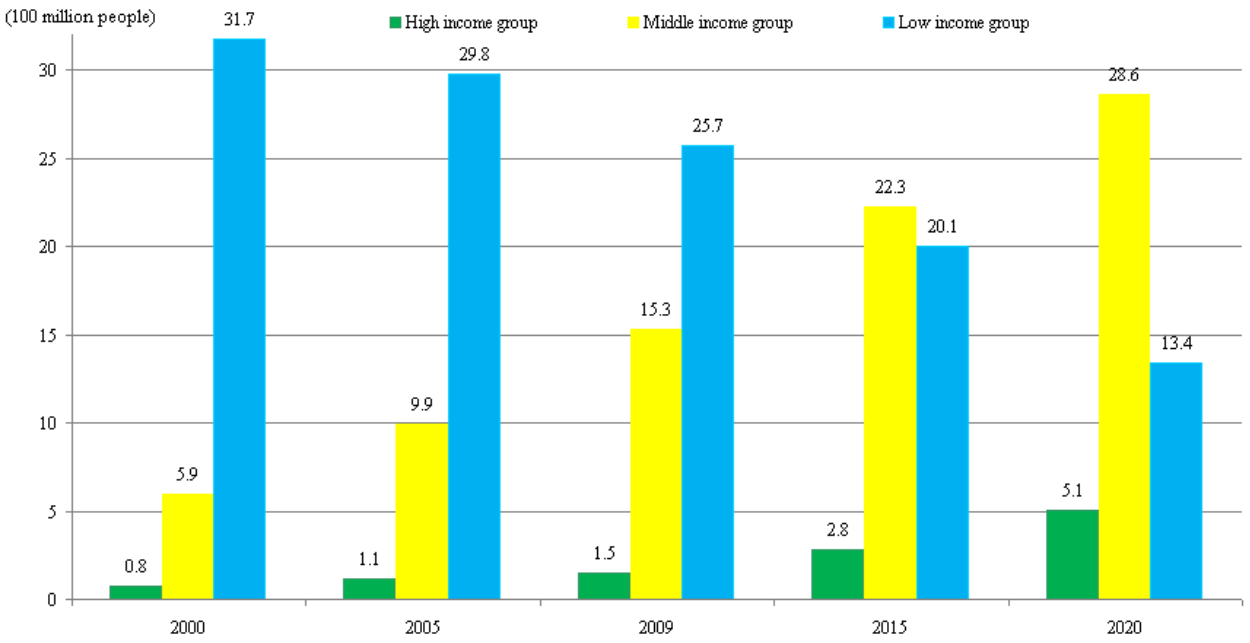
[4] The median age is the age of the person who stands in the middle (center), when all the population was arranged by age.

(Unit: Age)

Country	2009	2015	2020
China	38.2	41.1	42.0
Korea	37.3	41.0	43.8
India	24.7	26.4	28.1
Indonesia	27.9	30.1	32.0
Pakistan	21.0	22.5	23.7
Turkey	28.5	31.0	32.9
UAE	31.3	32.0	34.4
Saudi Arabia	24.3	26.0	27.5
Egypt	23.6	24.6	24.9
Nigeria	18.4	19.1	20.0
South Africa	24.7	25.7	26.5
Mexico	27.1	29.6	31.8
Brazil	28.4	31.2	33.5
Russia	37.7	38.3	39.0
27 Emerging economies average	30.0	31.9	33.6
USA	36.9	37.4	38.0
England	39.3	39.6	39.4
Germany	43.7	46.2	47.8
Japan	44.6	46.6	48.6
Developed countries average（G7 7 countries）	40.9	42.3	43.3

Source: Euromonitor International 2010

Figure 3-2-1-3 Changes in and outlook of middle income group and high income group in emerging economies



Note: Household polulation categorized by household disposable income.
Household ratio for each income group x population
Source: *Euromonitor International 2010*

(In this chapter, countries that belong to the following groups are called 27 emerging economies. Please note that Iran and Bangladesh are excluded due to the restriction of data.)

1. BRICs: Brazil, Russia, India and China (Initial letter of each country)
These 4 countries was addressed in October 2003 by Goldmansachs research group as being a great existence for the future world economy, and quoted in "Dreaming with BRICs: The Path to 2050"[5].

2. BRICS: Brazil, Russia, India, Indonesia, China, South Africa (Initial letter of each country)
The Organization for economic co-operation and development (OECD) addressed these nations as emerging economies it needs to reinforce ties with, in the chairman's summary dated 16May, 2007. Of the nations of BRICS, Russia was designated as a new candidate to be a member of OECD, and Brazil, India, China, South Africa and Indonesia were designated as "Strengthen national involvement" in view of becoming a member of OECD in the future[6].

3. VISTA: Vietnam, Indonesia, South Africa, Turkey, Argentine (Initial letter of each country)
The BRICs economic research center recommended these nations as one of the most potential candidate to replace BRICs in December 2006.These nations were selected among competent emerging economies, which equipped with 4 or more factors out of 5 factors, namely, abundant natural resources, growing labor force, induction of foreign asset, stability of politics and rising middle-income class with strong purchasing power[7].

4. NEXT11: Iran, Indonesia, Egypt, Korea, Turkey, Nigeria, Bangladesh, Pakistan, Philippines, Vietnam, and Mexico.
In December 2005, the Goldmansachs economic research group addressed these countries as nations with a latent potential capable of giving impact to the world's economy in 50 years time, although they are not as

[5] Goldman Sachs Asset Management Co., Ltd. Web Site: http://www2.goldmansachs.com/japan/gsitm/column/emerging/.
[6] Asahi com. (17 May 2007).
[7] BRICs Economic research center Web Site: http://www004.upp.so-net.ne.jp/kadokura/rport20061204a.pdf

much generous as BRICs nations. Although these nations have some common factors in terms of large population or latent economic scale, NEXT11 is characterized that it is consist of countries with diverse natures in terms of geographic location, economic or market development standard, integrity with the world's economy, absolute standard of population, etc[8].

5. JFIC16: Vietnam, Thailand, Turkey, United Arab Emirates, Pakistan, Mexico, South Africa, Venezuela, Saudi Arabia, Peru, Poland, Argentine, Rumania, Hungary, Nigeria and Egypt.

In 2007, the Japan External Trade Organization (JETRO) made use of "Jetro overseas information file (J-FILE) and identified the emerging economies (other than those BITS nations where GDP per person is 500 dollars and above) that showed high growth in terms of number of access to their web site. The characteristics of JFIC16 are that the nations are scattered around the world, having a large proportion of mineral, food and human resources (remittance from overseas) that are originally possessed as a whole, and prone to get the merit of price hike of primary produce such as crude oil or grain[9].

(b) Growing the middle-income class and the high-income class in emerging economies

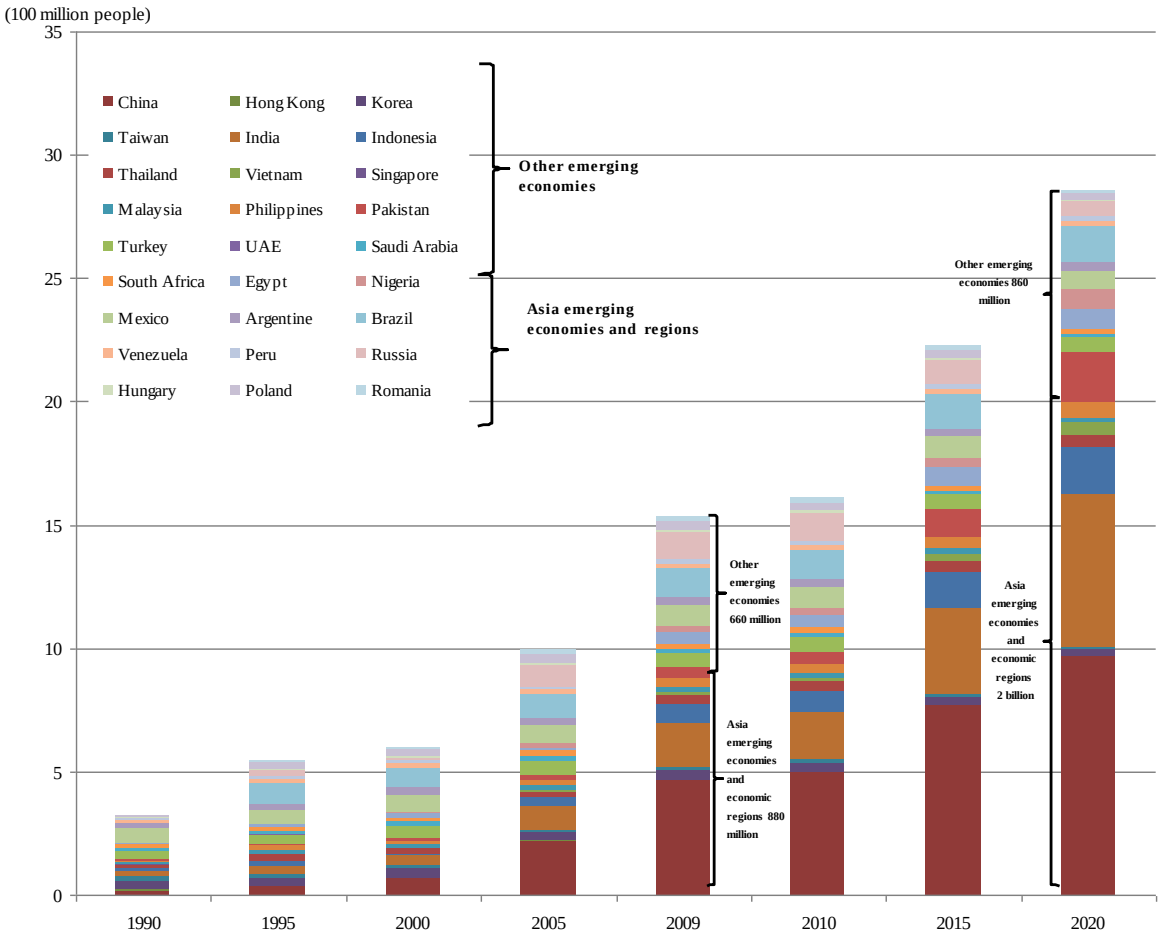
As for population structure ratio of emerging economies categorized by income group, as long as the emerging economies listed here above are combined, it showed that the high-income class accounted for 3.6%, the middle-income class was 36.0% and the low-income class was 60.4% in 2009, while in 2020, they expect that the high-income class accounts for 10.8%, the middle-income class 60.8% and the low-income class 28.4%. This indicates that the middle-class population will become double of the low-income class population. Taking a look at the data categorized by country, either the middle-income class or the high-income class will become the largest population group at every nation in 2020, except India and Nigeria. As long as India and Nigeria are concerned, the low-income class (Household disposable income is below 5,000 dollars) will remain as the largest population. But its ratio would decrease up to 50% mark.

(i) Status of the middle-income class and future growth

The middle-income class population in the Asia's economy zone was about 220million in 2000, and it grew four times larger, amounted to about 880million in 2009. It is expected to further grow to more than double in size, which amounts to about 2billion. As for other emerging economies, it grew from about 370million in 2000 to 660million in 2009, and expected to further grow up to about 860million in 2020. For the entire emerging economies, it is anticipated to grow into a large market of 2.86billion in 2020. (Figure 3-2-1-4).

Figure 3-2-1-4 Changes in middle income group in emerging economies (Re-cited)

[8] As herein above mentioned Goldman Sachs Asset Management Co., Ltd. Web site.
[9] "JETRO White Paper on Trade and Investment 2008" by the Japan External Trade Organization

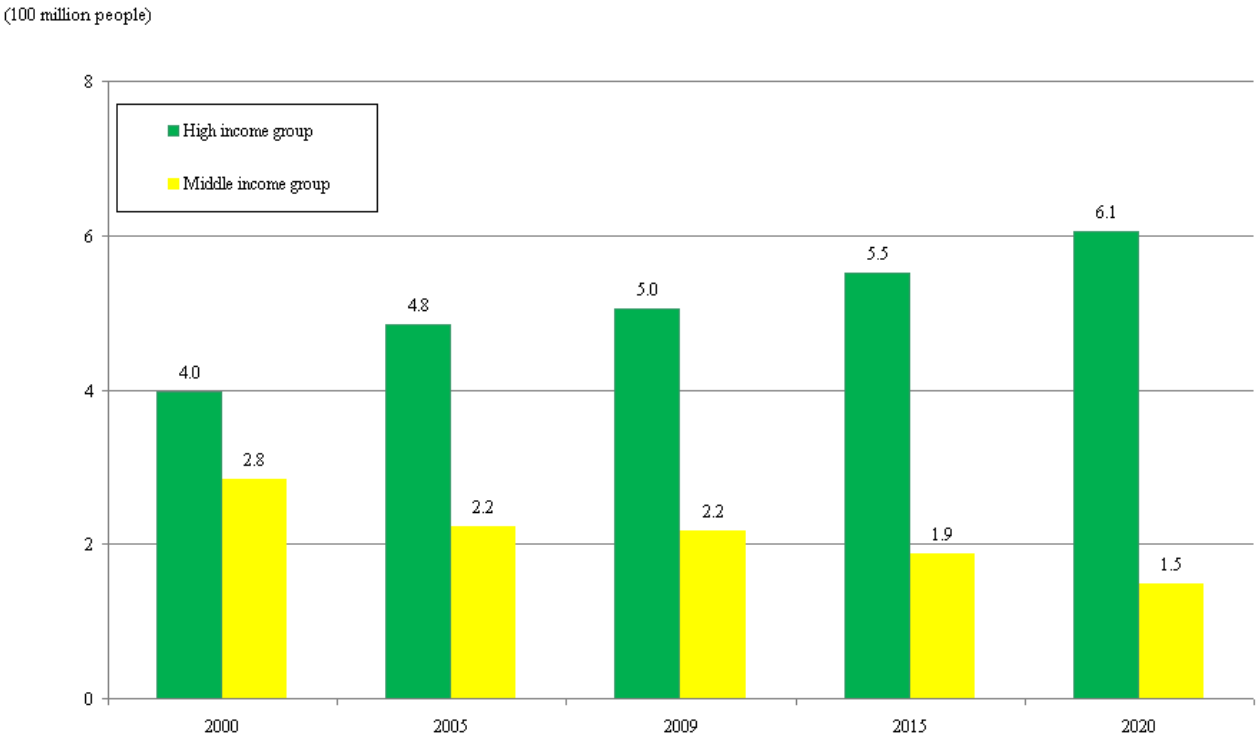


Note: Household population categorized by household disposable income.
Household ratio for each income group x population.
Data for 2010, 2015, 2020 are estimated figures presented by the Euromonitor.
Data for 1990 doesn't include Brazil and Russia.
Source: *Euromonitor International 2010*

(ii) Status of the high-income class and future growth

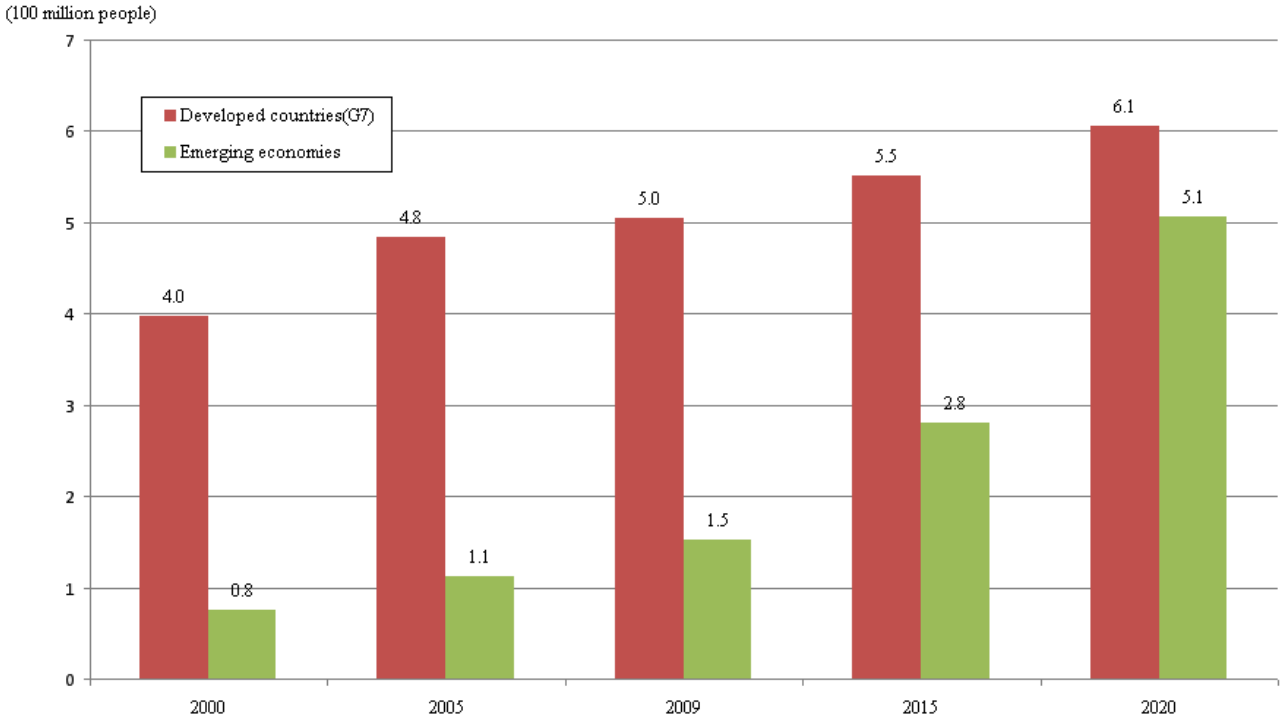
Although developed nations have taken up a large proportion of the high-income class population, emerging economies shows such an extremely high growth rate in the high-income class population. The growth rate of the high-income class population in developed nations for the period between 2009 and 2020 is expected to be about 1.2 times larger (Figure 3-2-1-5), while that of emerging economies will be about 3.3 times larger. Growth rate in BRICs, in particular, should be about 5.3 times larger. In terms of population of the high-income group, the Asia's economic zone is anticipated to grow from 60million in 2009 to 230million and other emerging economies grow from 90million in 2009 to 280million, totaled 510million in 2020. This figure indicates that the high-income class in emerging economies will grow, which is more than 80% of that in developed nations. (Figure 3-2-1-6).

Figure 3-2-1-5 Changes in middle income group and high income group in developed countries



Note：Household population categorized by household disposable income. Household ratio for each income group x population
Source：*Euromonitor International 2010*

Figure 3-2-1-6 Comparison of changes in high income group between developed countries and emerging economies

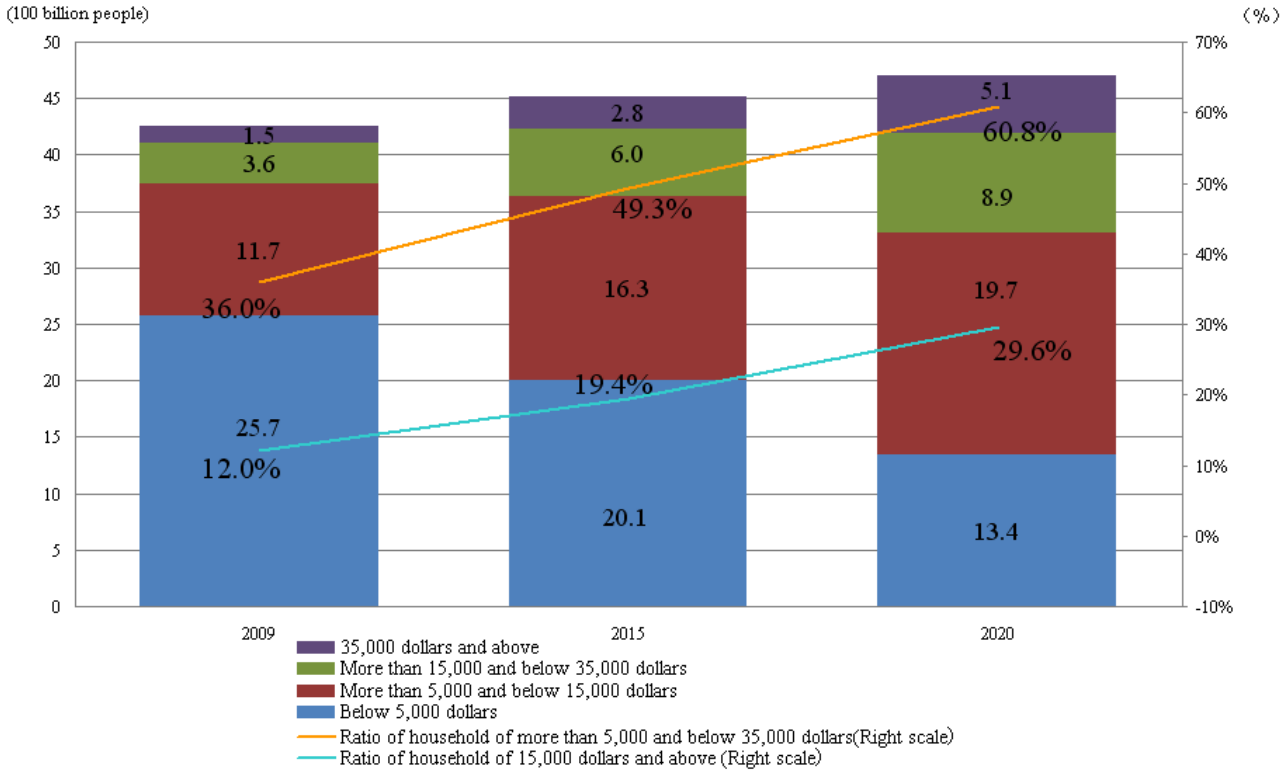


Note：Household population categorized by household disposable income.
Household ratio for each income group x population.

Source ：Euromonitor International 2010

On comparing the high-income class and the middle-income class population composition movement in 2009 with those in 2020, it shows that the middle-income class population would grow 1.9 times larger, while the high-income class population will grow 3.3 times larger. The combined population of the middle-income class and the high-income class will take up about 30% of the population of the entire emerging economies (Figure 3-2-1-7).

Figure 3-2-1-7 Changes in population for each income group, and ratio of upper middle income group and higher



Note: Household population categorized by household disposable income. Household ratio for each income group x population.
Source： *Euromonitor International 2010*

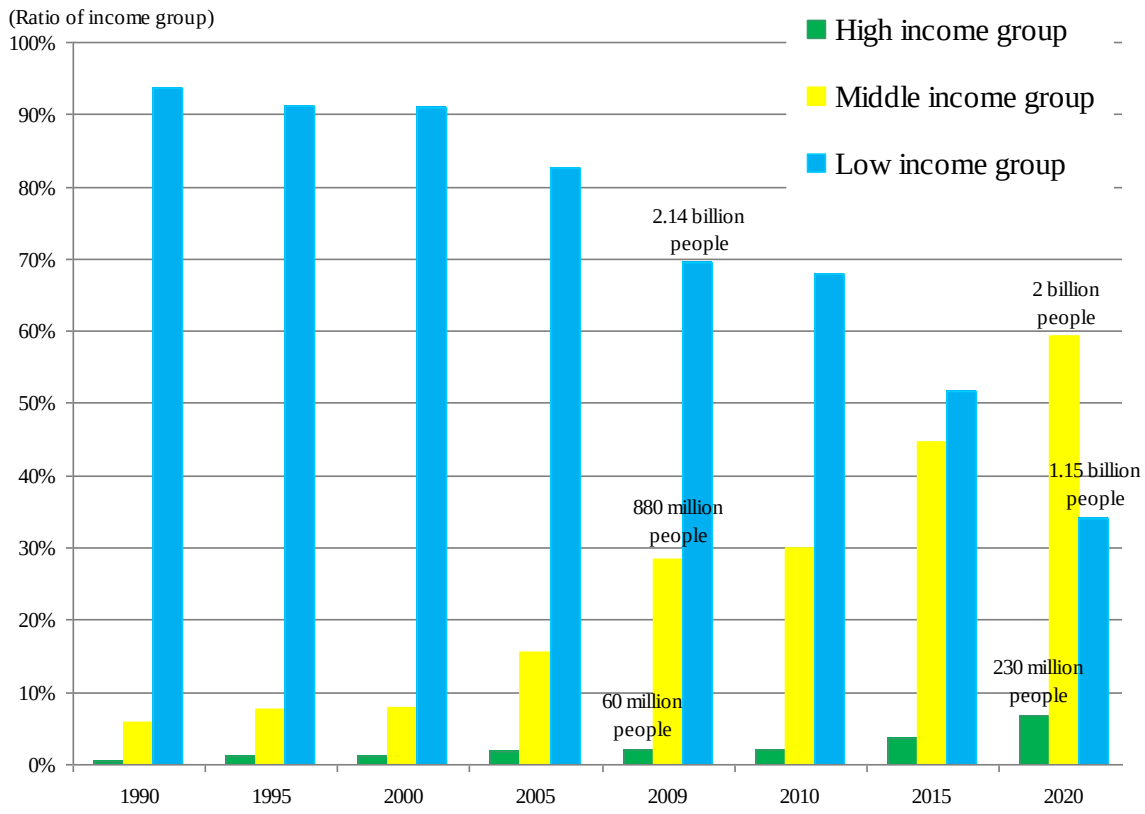
(iii) Characteristics of emerging economies categorized by region

Asia economic zone' population composition forecast ~By 2020, the middle-income class population will reach 2 billion. The high-income class and the middle-income class group will take up about two thirds~.)

As for the Asia economic zone, the middle- and high-income class populations are anticipated to grow smoothly. Taking into consideration of China and India, where the populations of which take up about

80% of that of the entire Asia economic zone as in 2009, had the biggest proportion of the low-income group population. As in 2009, the high-income class population was 60million (2.0%), the middle class population was 880million (28.4%) and the low-income class population was 2.14billion (69.6%). If India is not factored in, the proportion of the middle-income class and the low-income class population would be switched by 2015. And in 2020, the high- income class population will mark 230million (6.7%), the middle-income class will mark 2billion (59.3%) and the low-income class will mark 1.5billion (34.0%) (Figure 3-2-1-8).

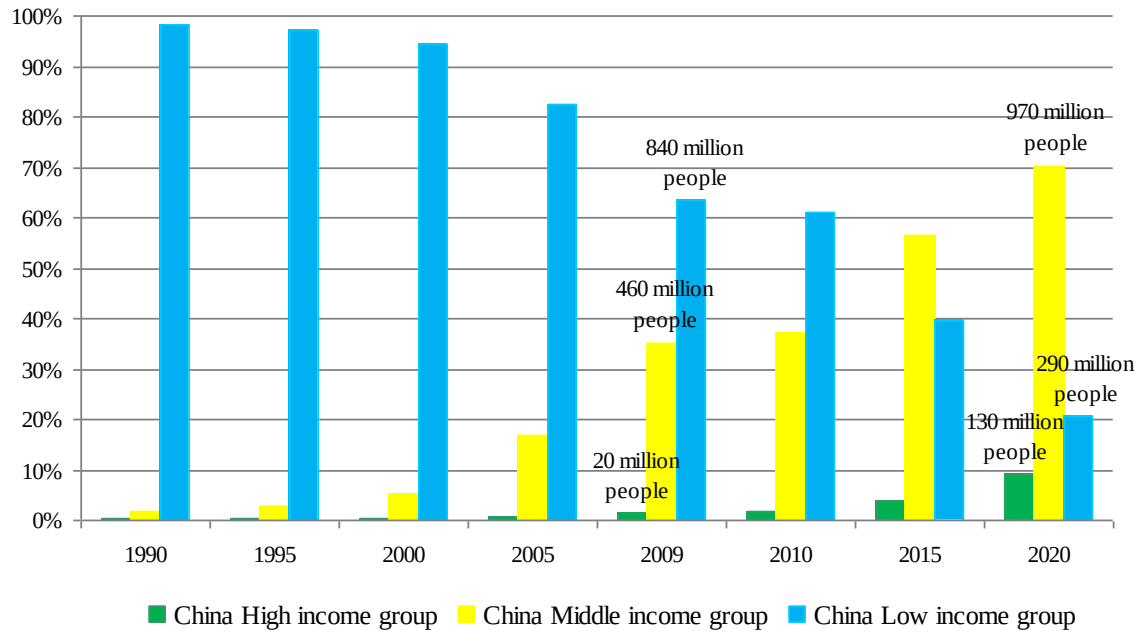
Figure 3-2-1-8 Ratio of income groups in Asia emerging economies (China, Hong Kong, Korea, Taiwan, India, Indonesia, Thailand, Vietnam, Singapore, Malaysia, Philippines)



Notes : Household population categorized by household disposable income.
Household ratio for each income group x population.
The figures in this graph indicate populations for each income group in 2009 and 2020.
Source : *Euromonitor International 2010*

China, which recorded the largest population in the world (1.33billion (as in 2009)), is expected to see a growth during the period between 2009 and 2020 with the high-income class population increase by about 110million (7%), the middle-class increase by about 510million (35%), and the low-income population decline by about 560million (43%). If the high-income class and the middle-income class population in China are combined, it will reach 1.1billion in 2020, which draw an attention as China being a world class purchasing power. (Figure 3-2-1-9)

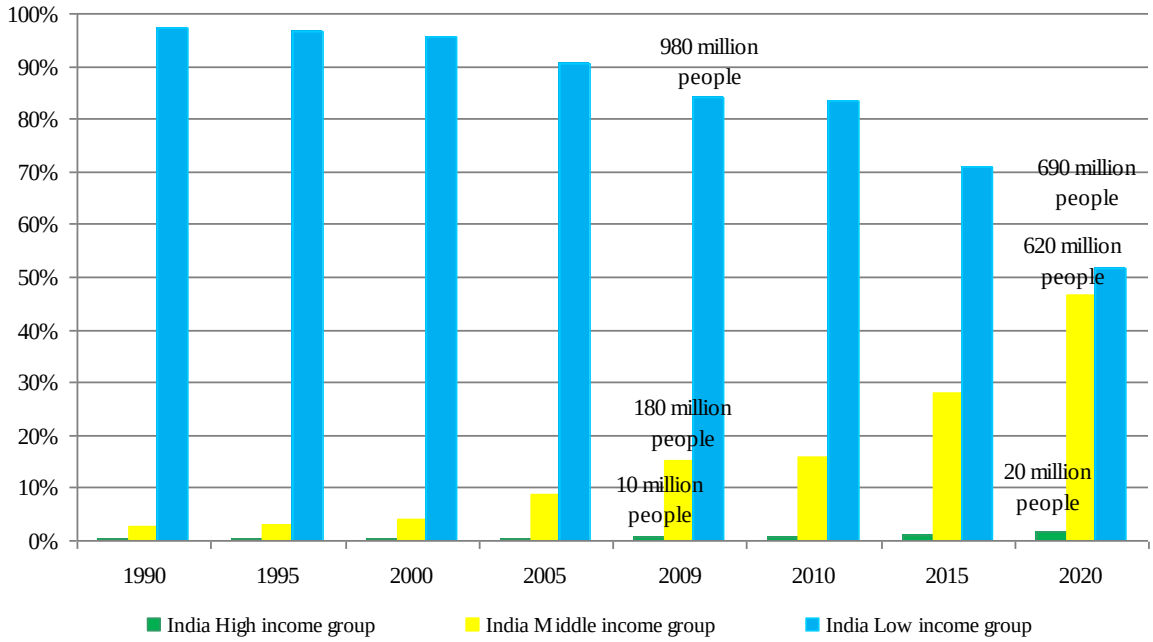
Figure 3-2-1-9 Ratio of income groups in China



Notes: Household population categorized by household disposable income.
Household ratio for each income group x population.
The figures in this graph indicate populations for each income group in 2009 and 2020.
Source : *Euromonitor International 2010*

India (Population of 1.17 billion (as in 2009)) is anticipated to see a prominent growth during the period between 2009 and 2020 with the middle-class population increase by 440 million (32%) and smooth decline in the low-income population. Although the low-income population is anticipated to take up more than the half of the total population in 2020, the total population will also grow as fast as China's population growth. (It is anticipated to increase to 1.33 billion in 2020). Despite having a large proportion of the lower-middle-income group population of 690million(52%), it is anticipated that the combined population of the high-income class and the middle-income class will reach 640 million (Figure 3-2-1-10).

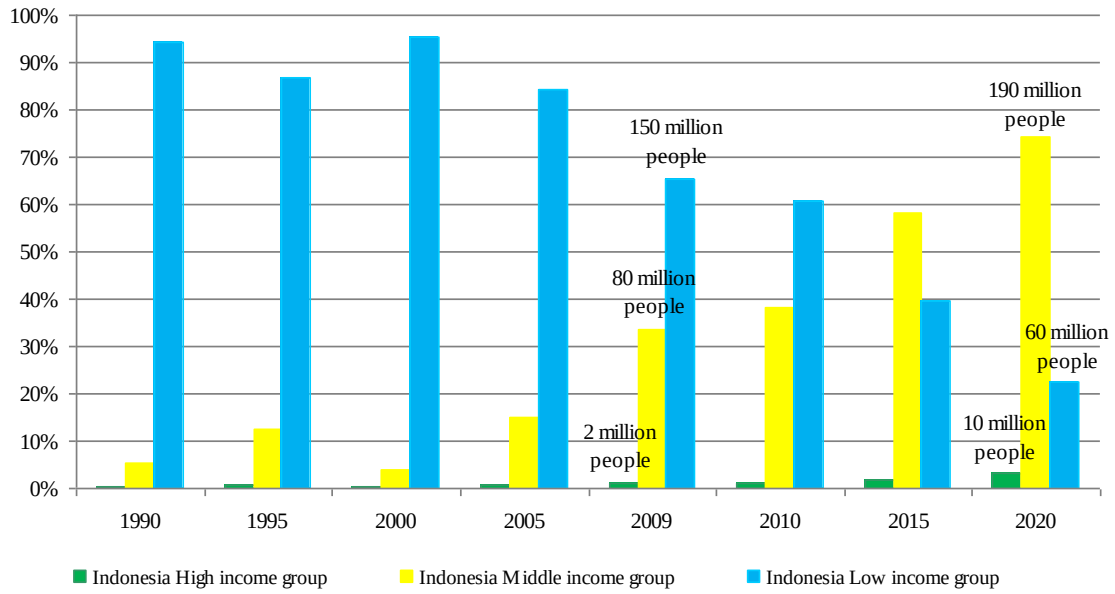
Figure 3-2-1-10 Ratio of income groups in India



Note: Household population categorized by household disposable income.
Household ratio for each income group x population.
The figures in this graph indicate populations for each income group in 2009 and 2020.
Source: *Euromonitor International 2010*

Indonesia (Population of 230million (as in 2009) which has the largest population in Asia after China and India, had the high-income population of 2million (1%), the middle-income population of 80million (34%), and the low-income population of 150million (66%) in 2009, while in 2020, it is anticipated that its population will grow to 250 million with the high-income population of 10million (3%), the middle-income population of 190million and the low-income population of 60million (23%) (Figure 3-2-1-11).

Figure 3-2-1-11 Ratio of income groups in Indonesia

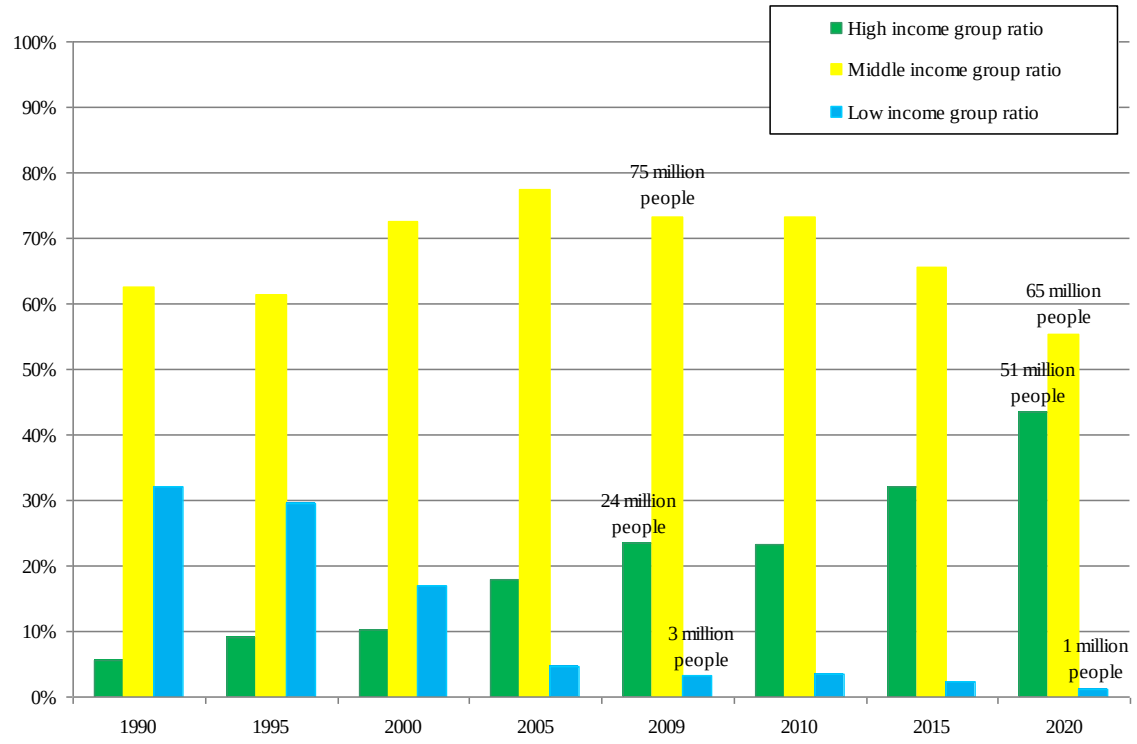


Note: Household populationcategorized by household disposable income.
Household ratio for each income group x population.
The figures in this graph indicate populations for each income group in 2009 and 2020.
Source： *Euromonitor International 2010*

(Middle Eastern emerging economies' population composition forecast ~By 2020, the middle-income class population will reach 44% of the entire population~)

A characteristic of movement/forecast of population composition in Middle Eastern emerging economies is that the growing number of the high-income class population. Taking a look at the movement and forecast of combined population composition of three countries, namely UEA, Saudi Arabia and Turkey, they had the high income class population of 24 million (23.4%), the middle-income population of 75 million (73.3%) and the low-income population of 3 million (3.3%) in 2009, while as in 2020, it is anticipated that the high-income population amounts to 51 million (43.5%), the middle-income population amounts to 65 million (55.2%) and the low-income population amounts to 1 million (1.2%) (Figure 3-2-1-12).

Figure 3-2-1-12 Ratio of income groups in Middle East emerging economies (Turkey, UAE, Saudi Arabia)



Note: Household population for each household disposable income.
Household ratio for each income group x population.
The figures in this graph indicate populations for each income group in 2009 and 2020.
Source: *Euromonitor International 2010*

As long as UAE and Saudi Arabia are concerned, during the period between 2009 and 2020, the total population will grow by more than 20%. The high-income population has already reached approximately 42% of the total population as in 2009 acted by the increase of the total population, and it will grow to approximately 75% by 2020. It will be no longer considered as an emerging nation as its market population composition will form similar to that of developed counties.

(Africa's emerging nations population composition forecast ~ Low-income class population has become mainstream, but composition of young people also has become mainstream. It can be expected for future growth~)

When taking a look at the combined population composition of South Africa and Nigeria, which located in Sub Sahara region, they had the high-income population of 4million (2%), the middle-income population of 47million (23%) and the low-income population of 154million (75%) as in 2009, while in 2020 it is anticipated that the high-income population amounts to 9million (3.5%), the middle-income population amounts to 102million (41.4%) and the low-income population amounts to 135million (55%).

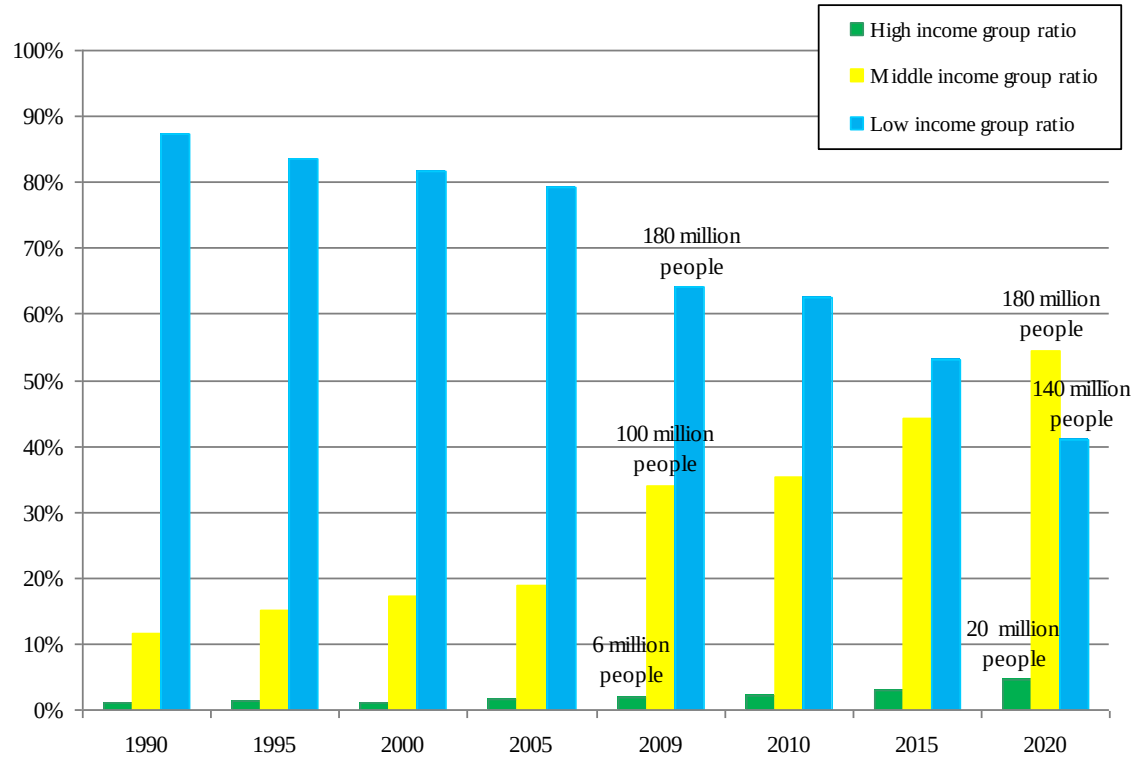
Nigeria, the total population of which amounted to 150million (as in 2009), is anticipated that the low-income population remains as their most biggest population composition still in 2020. However the middle-income population will account for 40% in 2020.

As for South Africa, the low-income population was their biggest population composition in 2009, however it is anticipated that the middle-income population will reach 48% and the low-income population will drop to 43%, which can push the middle-income population to the biggest population composition.

Egypt, which belongs to Middle East region/North African region (MENA), has already established the middle-income population as the mainstream of the total population. It is anticipated that the population will grow by nearly 20% during the period between 2009 and 2020, and the middle-income population will grow to 89% (80million) by 2020. Of the said middle-income population the upper middle-income population will increase to 30% or more in 2020.

In any case, the major proportion of young people characterizes their population composition. As for Egypt and Nigeria are concerned, it is expected that their population will grow by approximately 20% and 25% respectively during the period between 2009 and 2020, which is considered high growth rate.

Figure 3-2-1-13 Ratio of income groups in Africa emerging economies (Egypt, Nigeria, South Africa)

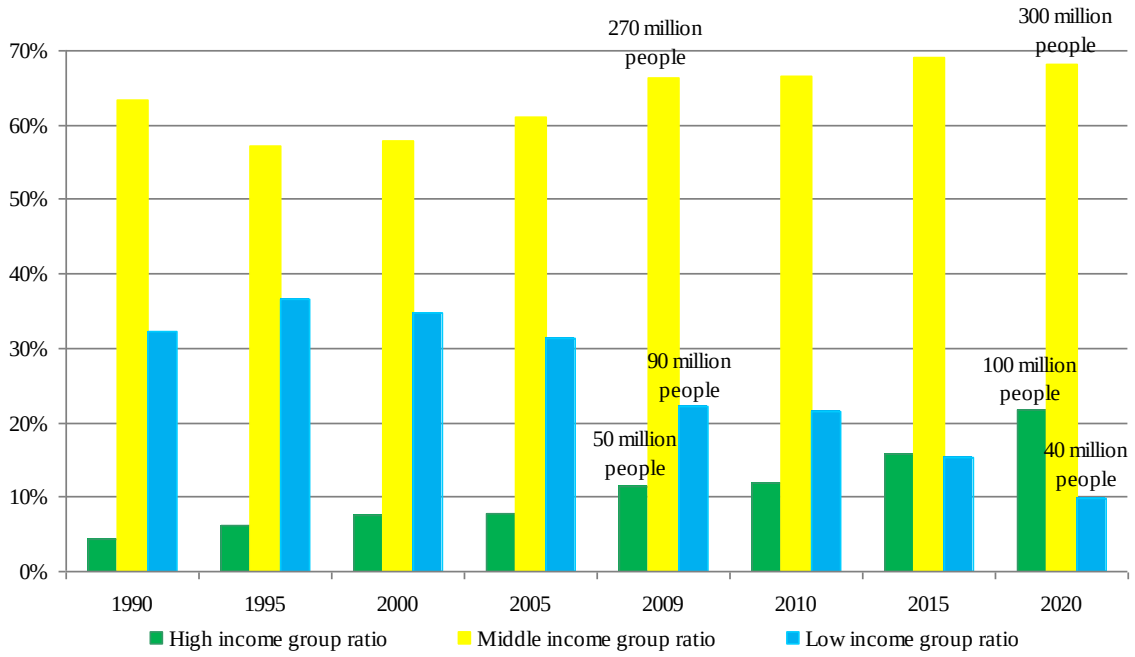


Note: Household population categorized by household disposable income.
Household ratio for each income group x population.
The figures in this graph indicate populations for each income group in 2009 and 2020.
Source: *Euromonitor International 2010*

(Central and South America's emerging economies' population composition forecast ~The middle-income population has already became mainstream in the population composition, and the high-income population will increase in the future~)

Central and South America's emerging economies have the middle-income population that has become a mainstream in the population composition. Taking a look at the combined population composition forecast of 5 nations, namely Brazil, Mexico, Argentine, Venezuela and Peru, which had the high-income population of 50million (11.4%), the middle-income population of 270million (66.3%) and the low-income population of 90million (22.2%), while in 2020 it is anticipated that the high-income population amounts to 100million (21.8%), the middle-income population amounts 300million (68.3%) and the low-income population amounts to 40million (9.9%) (Figure 3-2-1-14).

Figure 3-2-1-14 Ratio of income groups in Central/South America emerging economies (Mexico, Argentine, Brazil, Venezuela, Peru)



Note: Household population categorized by household disposable income.
Household ratio for each income group x population.
The figures in this graph indicate populations for each income group in 2009 and 2020.
Source: *Euromonitor International 2010*

As long as Brazil is concerned, which has a population of 190million (as in 2009), it is anticipated that the high-income population as well as the middle-income population will increase smoothly during the period between 2009 and 2020. It had the high-income population of 10million (7%), the middle-income population of 120million (63%), the low-income population of 60million (3%). In 2020, it is anticipated that the high-income population amounts to 30million (15%), the middle-income population amounts to 150million (73%) and the low-income population amounts to 20million (12%).

As for other Central and South America's emerging economies, the population will grow by more than 10% during the period between 2009 and 2020. Mexico, Argentine and Peru are anticipated that the middle-income population ratio accounts for approximately 64%, 71% and 68% respectively, and the high income population ratio accounts for approximately 33%, 15% and 11% respectively.

Venezuela has already achieved a high proportion of the middle-income population of 55%, and the high-class income population of 42% as of 2009, and it is anticipated to sustain high proportion of the middle-income and high-income population in 2020 as well.

(c) BPO market as a potential next volume zone

(i) Framework of BOP Market

As a promising market with a big potential, the low-income group in developing countries, so called "BOP group" (Base of the Economic Pyramid[10]) is drawing an attention. BOP market is in the middle of the

[10] "The next 4 billion" by the World Resource Institute, International Finance Corporation (2007). Approximately 4 billion of the world's population, which accounts for 72%, makes a living below the yearly income of 3,000 dollars.

spotlight as a "Next volume zone" or "Next emerging economies to be". It is anticipated that poor group moves up to the higher level of income group in the middle- or long term prospective, and generates volume zone in the future, as addressed in the "White paper on international trade and economy 2009"[11] The market scale for BOP group at present is said to be about 5trillion dollars, which is equivalent to Japan's substantial GNP[12].

Companies in Europe, China and Korea are expanding their market to nations that are considered to be the next emerging economies with the support of the government. With the prospect of the middle-income group growth in the future, they are making advancement into BOP market, however it is considered as a prior investment mostly targeting at disseminating the company name or the product or gaining the standard in the new market.

It is important for our country to support such an initiative toward BOP business with public and private partnership, for the purpose of capturing the markets in the future or carrying out a continuous and effective economic co-operation. As Japanese companies possess excellent technique or know-how, expectations from other countries toward Japan are high. It cannot be denied that some companies show hesitation in involving in BOP business stating the reason such as lack of local information or obscurity with regard to contribution toward short-term profit. However, in the middle to long term perspective, an involvement in BOP business by Japanese companies including small-medium business entities are deemed such an innovative challenge toward capturing new markets. Not only that, such companies could gain benefit more or less in ways they get an opportunity in laying out stepping stones to capture prospective middle-income class, enhancing international reputation (evaluation), gathering information that are closely related to the local country, procuring excellent staff in emerging markets, etc.[13] A company's involvement in the volume zone, at the same time, the company's top himself having interested in BOP business and challenging in positive manner would lead to not only expansion of long/short term profit of the company, but also it would lead to reinforcement of competitiveness by means of innovation of the company organization, management method, product/service, etc.

(ii) Commitment by collaboration of companies and government organizations to enter BOP market

BOP market needs new approach as their disposable income is still low unlike the middle-income group, and there are social issues that relate to poverty, hygiene, education, etc. Furthermore, there are unstable factors in terms of politics and economy. When a Japanese company decided to launch BOP business, co-operation from the Japanese government/support organizations, the government/company/BOP group of the developing country, and NGO/NPO, etc becomes important. (Figure 3-2-1-15) Such commitment toward BOP business will enable Japan, the developing country as well as relevant personnel from support groups/organizations to gain profit (Win-Win-Win).

This section observes what measure a company took for market exploration or investment for promoting their business in BOP market. "White paper on international trade and economy 2009"[14] introduces a case of trial by Sumitomo Chemical Co., Ltd. about a mosquito net incorporated with insect repellant in an attempt to curb malaria infection. It was said that Japanese companies in general are not so active in entering BOP market when it comes to working with support groups or the government of the local country. On the other hand, Europe or some other regions are working positively and closely with public and private

[11] White paper on International Economy and Trade 2009 Chapter 2, Section 2, 3. Toward promoting Japan — turning crisis into opportunity, (4) Development of BOP business, (Figure 2-2-3-14) BOP business advanced through government-private sector collaboration.

[12] Material by BOP business policy research group, The ministry of Economy, Trade and Industry (Oct 2009)

[13] "BOP shijyou senryaku ni miru "Shin-sedai kigyou" Kou Shinkoukoku/teishotoku-sou shijyou senryaku no seikou to shippai kara"(New generation companies in the viewpoint of BOP market strategy taking the success and failure in the emerging economies and the low income class market strategy as a lesson) by Shino Tsuchiya in Business & Economic Review 2009 December issue (The Japan Institute, Limited).

[14] Chapter 2, Section 2, 3. Toward promoting Japan — turning crisis into opportunity, (4) Development of BOP business, (Figure 2-2-3-14) BOP business advanced through government-private sector collaboration, etc.

sector in view of gaining standard in the future. The following shows an overseas company's attempt to explore BOP market.

Table 3-2-1-15 Possibility of BOP business to be profitable businesses for Japan, developing countries, supporting groups/organizations

[Japan's views]
From the viewpoint of Japanese government
○ To carry out economic cooperation continuously and effectively in collaboration with government-private sector : To improve living standards and reduce poverty in developing countries, To revitalize Japan's economy spurred by the developing countries' economy development, including Asia.
○ To enhance awareness and presence of Japan's economic cooperation
○ To support overseas development of Japanese companies : To develop businesses and an entire economy through creation and expansion of overseas markets.
From the viewpoint of Japanese companies (*NPO/NGO or social entrepreneurs could take initiative of activities below)
○ To procure new markets(or a preliminary move for future procurement)
○ To procure standards
○ To develop products or services which enable to develop back in the domestic markets
○ Opportunities for small businesses to advance overseas
○ Turning point to innovation for own business (unprecedented products, services, sales channels, partnership and others)
○ To enhance persistence and efficiency of businesses in collaboration with other businesses, government, supporting organizations, NGO/NPO, social entrepreneurs(*).
[Developing countries' views]
From the viewpoint of governments of developing countries
○ Development of economy by means of revitalization of markets, employment, inward direct investment and expansion of exports
○ To reduce poverty and improve the national's living standards
From the viewpoint of BOP group (Developing countries)
○ To expand/create an opportunity to obtain necessary products/services
○ To reduce BOP penalty(no choice but to purchase high priced, low quality goods due to poverty, difficulty/incapability to reach products and services)
○ To escape from poverty along with a creation of new employment opportunity
[From the viewpoint of supporting groups/organization]
[From the viewpoint of NGO/NPO, and others]
○ To explore new BOP group support needs in collaboration with businesses
○ To provide supports continuously and effectively in collaboration with businesses
[From viewpoint of supporting organizations]
○ To solve social issues effectively (MDGs, for example) of developing countries by making use of public sector's funds, products, services or networks.

Sources: *BOP business policy research group report - Establishment of new business models in developing countries in collaboration with government - public sector* (The Ministry of Industry, Trade and Economy) (Feb 2010)

(Sales of water purification agent by an American company P&G and procurement of clean water with local inhabitant[15])

About as many as 1.1billion population in developing countries is unable to obtain water that is safe to a minimum. It is reported that as many as 1.8million children died every year succumbed to diarrhea due to lack of water and hygiene facilities[16].

A U.S-owned company, P&G Co., Ltd, which is the most biggest consumer goods maker in the world has developed BOP business for their product PUR (Purifier of water), function of which is to purify water. They have strategic partners, a NPO, called PSI (Population Service International)[17] and Unicef., through which PUR is provided to consumers. By doing so, they are able to reduce enormous amount of cost on

[15] Source: Material provided by Nomura Research Institute
[16] "Human Development report" in the United Nation Development Programme (2006)
[17] PSI is a NPO established in the U.S. in 1970, headquartered in Washington DC, which engages in curbing malaria infection around the world.

distribution and awareness activities toward the local people, and they have successfully established their business (Figure 3-2-1-16).

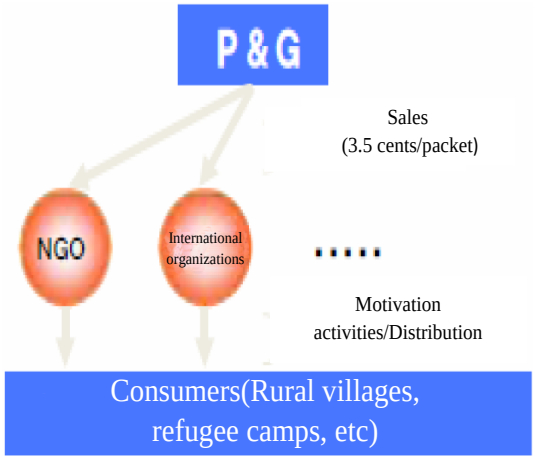
P&G Co., Ltd. has set some criteria in selecting partners. A partner shall be currently conducting some activities in the local country, and where they are highly credited. In addition, a partner shall be capable of purchasing a certain amount of their product (15,000 dollars and above).

Figure 3-2-1-16 Outline of PUR (P&G) and business model

[Outline of (PUR)]

PUR is a powder which purifies water. It kills virus and bacteria which cause typhoid or cholera, as well as reduces parasites, pesticide such as DDT, heavy metal such as arsenic or other hazardous contaminated material. Water purified with PUR conforms to the WHO standards. Moreover, it was confirmed in a clinical trial conducted by the CDC (Centers for Disease Control and Prevention Department of Health, USA) that PUR enables to mitigate diarrheal disease by 50%.

Business model



Source: *Long term innovation strategies aiming at the persistent growth of global age (Last volume) Creation of intellectual property June 2008* (Nomura Research Institute Co., Ltd.)

When they first launched their business, they sustained their business with the supports from USAID (Agency of International Development) and DFID of England (Department of International Development). They selected suitable partners for each country. Horizontal development to other countries became comparatively easier as everything from bearing distribution cost to sales, awareness activities are left to the partners.

The success of this business model proved that P&G Co, Ltd has made it possible to gain benefit in terms of not only sales of their products, but also gaining a future new market, enhancing the company reputation, and gaining excellent manpower.

(iii) Commitment of Japanese-owned companies to enter BOP market

" BOB business policy group report "Establishment of new business model with public and private co-operations in developed countries"" was compiled by the BOP business policy research group in February, 2010. Countries such as those in Europe have been working activity. On the part of Japanese companies, business sector that shall be emphasized in BPO business, and basic direction thereof are summarized in the figure below, taking into consideration of what business sectors are placed emphasis by support organizations in each country and their performance data, what business sector of Japanese companies entered into BPO business, what business sector is placed emphasis by Official development (ODA General framework) (Figure 3-2-1-17).

Also, in light of its geographic proximity or prospect of business development (e.g., of BOP population of approximately 4billion, there is approximately 3billion populations in Asia.), etc, it is thought that developing countries shall be considered widely, yet still focus on Asia.

Table 3-2-1-17 Promising sectors and Social issues for Japanese businesses

Three pillars	10 sectors	Objective（Social issues to be solved）
1. Japan's commitment to reduce poverty	a) Education	To improve low literacy rate with adult and primary school enrollment rate
	b) Health and welfare	To improve high child mortality rate
	c) Water and hygiene	To improve population ratio which can get access to improved water source
	d) Agricultural science	To expand income by improving efficiency of yields in agriculture, forestry and fishery
	e) Food, nutrition	To reduce famine and improve intake of nutrition
2. Japan's stronghold sectors	f) Environment and energy equipment	Electrification and network making use of energy conservation technologies
	g) Household appliances, Industrial machines.	To improve quality of life, to expand income by shifting to the secondary industry
3. Basic infrastructure which works as frame of the above	h) Information and communication	To develop social infrastructures that are required to realize the above a) ~g).
	i) Finance	
	j) Transportation equipment	

Source: *BOP business policy research group report － Establishment of new business models in developing countries in collaboration with government-private sector* (The Ministry of Industry, Trade and Economy)（Feb.2010）,

From a viewpoint of gaining a future new market, it is important for a Japanese-owned company to enter into BOP market earnestly. To do so, it requires a solid marketing such as commitment by the management top, understanding of local needs or local market, etc. Based on which, new measure such as a review of product pricing or product specification, etc. is also required. Meanwhile, on the government part, it is important to gather and disseminate information on the market or business, provide support for establishing business partnership. etc. (Figure 3-2-1-18).

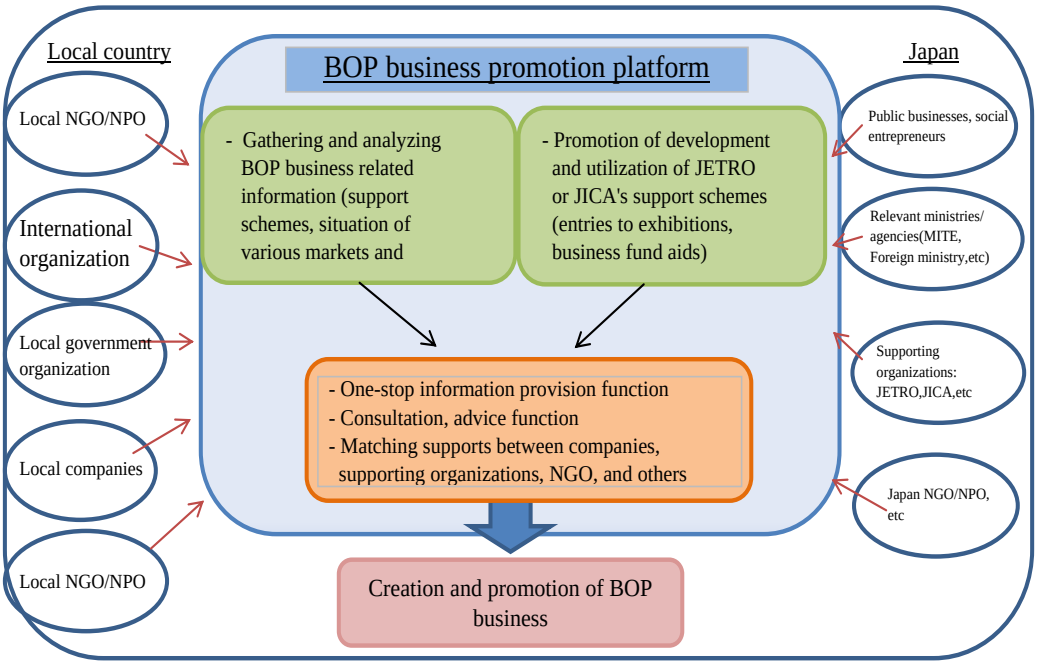
It is also considered necessary to work on various measures on support in cooperation with concerned personnel in and out of the country organically, and at the same time, work on development of "Plat form organization" which provides comprehensive support (Figure 3-2-1-19).

Table 3-2-1-18 Challenges aiming at the expansion of BOP business and specific measures

Vector of measures	Specific activities
a) Support in gathering information that are necessary for BOP business	●Various supporting tools, research and dispatching information on BOP business advanced cases in and outside the country. ●Conducting research and dispatching information on market environment and potential needs by overseas' governmental organizations.
b) Support in establishing partnership	●Conducting F/S research with regard to an individual specific business proposed by companies and NPOs. ●Support in matching between NPOs, companies, governmental organizations in and out of the country, and Japanese companies(provision of venues)
c) Support in disseminating and enhancing awareness to local BOP groups and relevant parties	●To foster awareness and conduct education to local governmental organizations and NPOs(Training/dispatching experts) by overseas governmental organizations
d) Support in solving financial issues	●To promote utilization of existing support schemes (JBOC, NEXI, etc) ●To resume overseas investment features by the JICA(Long term and low interest funds supplies to complement risks）
e) Support in promoting technology development	●To distribute information on various supporting tools and support in matching relevant parties.
f) Promoting development of business infrastructure (Hard and Soft) in developing countries	●Further utilization of existing schemes such as loan, grant assistance, technical assistance, trade insurance, etc ●To study support measures to promote utilization of the micro finance (small scale financial service for BOP group
g) Necessity of organic collaboration in various supporting measures	●To develop the "BOP business promotion platform (tentative name)" in order to work out the above measures with organic collaboration <Promising features> ○ One-stop information provision function on BOP business related information ○ Consulting and introduction function on BOP business ○ Function of providing venues where BOP business related parties exchange information and discuss businesses

Source: *BOP business policy research group report －Establishment of new business model in developing countries in collaboration with government-private sector* (The Ministry of Industry, Trade and Economy)（Feb.2010)

Figure 3-2-1-19 Image of "BOP business promotion platform (tentative name)"



Source: *BOP business policy research group report - Establishment of new business models in developing countries in collaboration with government-private sector* (The Ministry of Industry, Trade and Economy) (Feb.2010)

(d) Competition in emerging economies

(i) Environment of competition in emerging economies

Emerging economies is expanding rapidly, mainly around the middle-income group. (Figure 3-2-1-20) shows top 10 countries in terms of market scale categorized by consumer goods. As long as such consumer goods are concerned; China has grown to a market as if it edges out the U.S.from the top place. Brazil and Russia as well ranked within Top 10. Now emerging economies are showing their presence as a consumer market (Figure 3-2-1-20).

However, despite the fact that Japanese-owned companies achieved high market share in own country, they haven't secured market share of consumer goods in the growing emerging economies, compare to foreign companies, and fell short of becoming a key player. When taking a look at the market share categorized by company's nationality for each commodity in Japanese, U.S and BRICs market, it shows that European, Korean and local companies take up larger share as a whole (Figure 3-2-1-21).

When taking a look at the market share categorized by commodity, as long as digital television is concerned, our companies gained a certain volume of market share in Japanese, U.S. and Chinese market. While in Brazil, Russia and Indian market, Korean companies secure a large proportion of market share. In addition to such markets, Korean companies are eyeing on markets as far as Middle East and Africa. They are gaining market share steadily at regions where effort in exploring the markets by Japanese-owned companies is frivolous. As long as mobile phones are concerned, while Japanese-owned companies gained overwhelmingly high market share of nearly 80% in Japanese market, while in U.S, and BRICs market, European and Korean companies gained high market share. As for desktop computers, while Japanese companies gained market share of nearly 60% in Japanese market, American companies and local companies of each market gained a high market share in U.S and BRICs market. As for other commodities, toiletries and cosmetics, while Japanese companies take up a market share of nearly 50% in Japan,

European companies take up a high share in U.S and BRICs market. In Brazil and Indian market, the local companies attained a certain volume of shares, which indicates that they are coming to enhance their presence steadily. (Figure 3-2-1-21).

Table 3-2-1-20 Market scale categorized by commodity Top 10 countries

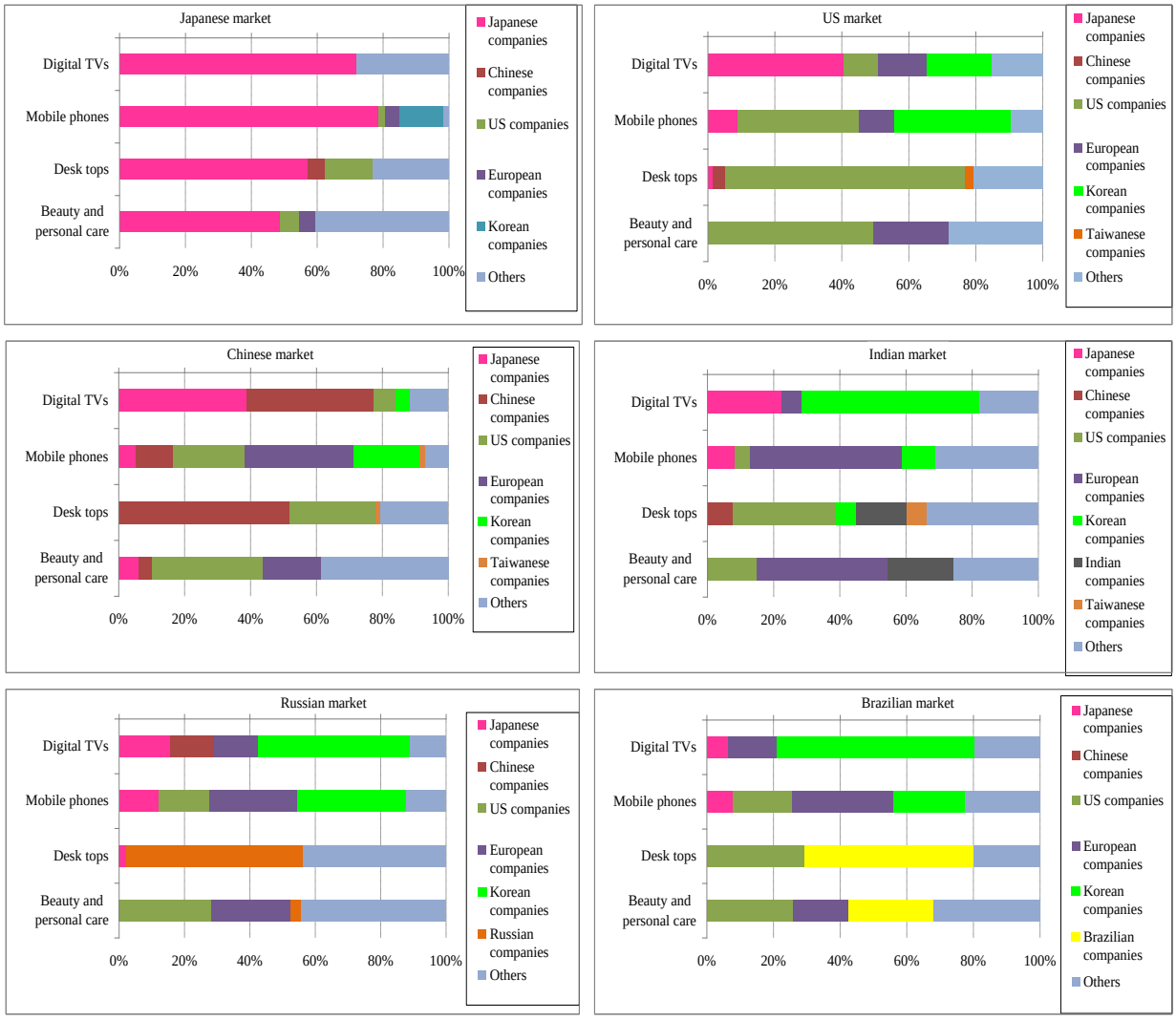
	Top	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Automobiles	China	USA	Japan	Germany	Brazil	France	Italy	India	England	Canada
Desk tops	China	Brazil	USA	France	England	Japan	Spain	Poland	Australia	Russia
Digital TVs	USA	China	England	Germany	France	Italy	Japan	Spain	Brazil	Canada
Mobile phones	USA	China	Japan	France	India	Russia	Mexico	Korea	Brazil	Germany
Beauty and Personal care	USA	Japan	Brazil	China	Germany	France	England	Italy	Spain	Russia

Notes: 1.Automobiles' top 10 is based on number of vehicles. Otherwise, based on retail sales amount. Data on the beauty/personal care and automobile were quoted from the data for 2009, otherwise quoted from the data for 2008.

2. Countries indicated with the half-tone color are BRIC countries.

Source Automobiles :Marklines Company, otherwise : *Euromonitor International 2010*

Figure 3-2-1-21 Companies share categorized by nationality and commodity in emerging economies



Note: 1. Based on sales amount
2. The value of the beauty and personal care was quoted from the data for 2009, otherwise quoted from those for 2007.
3. Companies which fell short of 1% are included in Others category.
4. With regard to a company's nationality, the country or region of either the company in question or its parent company was factored in.

Source: Euromonitor International 2010

(ii) Competitive companies, which enhance their presence in emerging economies

As stated as above, European and Korean companies gained a high share of market in emerging economies. Here in below we discuss about competitors such as Korean-owned global companies, which enhanced their presence in emerging economies lately.

For Japanese companies, the domestic market is a large market with world-class GDP, although it is felt saturated. Hence, the domestic market is their number one target. It cannot be denied that a few company regard overseas market, especially emerging economies, as a complementary market. On the other hand, for Korean companies, as the market in their own country is relatively small (Figure 3-2-1-22), they have no choice but to find other ways in overseas market. Whereby, Korean based global companies, including those in electronics, automobile, steel business are committed to work to develop business in overseas market, primarily emerging economies, which haven't been explored by European or Japanese companies.

Here is some of the major Korean based global companies: Sum Sun Electronics, LG Electronics in the field of electronics, Hyundai Automobile (There is Kia Automobile under its umbrella.) in the field of automobile, to name a few. Lately, not only electronics or automobile sector which target for individual consumers (BtoC), but also companies such as POSCO of steel, Sum Sun SDI of secondary battery, LG Chemical of components which target on private sector (BtoB) are developing global business and showing their prominent presence. Taking a business of lithium battery for example, which is now getting a spotlight as a battery for the next generation automobiles in addition to notebook computers or mobile phones, a Korean global company is intently striving in tie-up with an automobile maker (Figure 3-2-1-23).

Table 3-2-1-22 Market scale of Korea and Japan

	Korea	Japan	Korea/Japan comparison
Automobile (10,000 units)	139	461	0.3
Mobile phones(10,000 units)	1,550	4,879	0.3
Steel (10,000 tons)	6,111	8,320	0.7

Notes: Automobile and mobile phones : Data for 2009, Steel: Data for 2008

Source: For Automobile: Marklines company, Mobile phones : Euromonitor International 2010, For Steel: Steel Statistical Yearbook 2009 (World Steel Association)

Table 3-2-1-23 Tie up by Korean and Chinese based global companies in the automobile lithium ion battery area

Company	Tie-up
Samsung SDI (Korea)	It tied-up with Bosch (Germany) and plans to supply to BMW (Germany)
LG chemical (Korea)	It plans to supply to Hyundai/Kia automobile (Korea) and GM (USA)
Biyadi(BYD) (China)	It conducts joint research with Volkswagen (Germany)

Source: The Ministry of Industry, Trade and Economy compiled based on the various press materia

The common point found among such Korean based global companies is that they are exploring overseas markets, including emerging economies, not limited to the market of their own country, and successfully achieved expansion of business share or gained profit. BtoC related companies of flat screen TVs, mobile phones, home appliances, automobile, etc have established their brand in emerging economies, and expanded market share by way of providing[18] balanced products in terms of performance/quality versus pricing based on the closely thought-out marketing strategy after studying local market needs (Refer to the figure 3-2-1-21 as shown above).

For example, the characteristics of Sum Sun electronics in the electronics field are found in the measures they have taken to foster manpower or in the product development strategy, which allows Korean based global companies to bring out competitive advantage. As for the measure to foster manpower, which is corresponded with the globalization of a company, they have a system named "Local expert system". Under this system, one has to stay in the country the market of which they wish to enter for about one year without obligation of engaging in any work. On the other hand, one is required to work out a plan voluntarily and implement it accordingly in order to learn the culture, history and custom of the country. One is expected to go through on his/her own without relying on the company when it comes to looking for

[18] Samsung Electric applies a concept of "Failure rate based on one's sense", which indicates the ratio of number of customer claims it received related to breakdown of the products, in stead of number of defect products. By applying this concept, the company takes a proper balance between the quality the customers seek and the price so as to avoid excess quality. Youtaro Hatakemura and Ryouzou Yoshikawa (2009)

a house, learning the local language or establishing human connections. But by the time the term ended, he will have equipped with the ability to design a product that suits to the taste or needs of the country, or ability to run the business from the view point of the local country[19].

As for the product development strategy with the company, it has developed[20] and produced products after in pursuit of balancing in terms of value/quality versus pricing. In recent years, it has enhanced product development with the emphasis on the design, which is symbolized by LED back light mounted LCDs (Liquid crystal display). Through such efforts, they were able to solidify their brand, which had been

established in emerging economies, and at the same time, the company has expanded further their business by making use of their brand power[21] onto other products. Owing to such a commitment, in a survey on best global brand ranking[22] conducted by the Inter Brand Company revealed that it ranked 42nd place in 2001, but improved to 19th place in 2009.

Korean based global companies including Sum Sun electronics company display some characteristics such as a quick and bold management based on the top-down-structured-organization and closely working with the government based on the strong collaboration structure. If Japanese-based companies tried to incorporate some of Korea's business strategy into their business strategy without making efforts to understand the entire picture of Korean global companies' business or the structure to create a virtuous cycle, having it functioned may be difficult. Japanese-based companies are required to re-establish business/management strategy, then optimize them entirely after studying the ability and real situation of Korean based global companies. In addition, Korean based global companies have embraced a strong sense of danger toward European companies producing innovative products/service, and a rising Chinese global company staging a pincer attack or threat. Hence, they have worked out a big target and strategy[23] looking ahead envisaged into the following generation. Their attitude where they intent on learning aggressively while always having a sense of danger without stick to the past success, and also they intent on coping with a change quickly to the competition environment or competitors, which is one thing our Japanese companies shall learn from them

Column 27 A rise of Chinese based global company

Amid the situation where domestic and overseas companies are accelerating exploration of emerging markets, Chinese based global companies are rising lately, in addition to Korean based global companies. Herein below discusses about Japanese companies' recognition toward Chinese based global companies, and move of Chinese global companies.

(Recognition of Japanese companies toward Chinese based global companies)

According to a study by the Japan Economic Foundation, Japanese-based companies feel that Chinese global companies and local companies activities of which are limited in their own country in China and Asean markets are a threat at present. But in the future, not only in China and Asean market, but also in

[19] Youtaro Hatakemura and Ryouzou Yoshikawa (2009)

[20] As one of the exemplary methods, there is Reverse Engineering Forward Engineering, which is, a company analyzes the structure of the product of a leading maker, and study its mechanism so as to mimic the structure and the basis of the function of the mechanism such as design and specification (Reverse engineering), and finally considers as to whether or not the company applies the function (Forward engineering). Youtaro Hatakemura and Ryouzou Yoshikawa (2009)

[21] Tomomi. Nagai (2008), Cho Fan-Seok, Chan Bon-Seok and So Joo-Hyun (2010)

[22] Some criteria for the brand ranking were set by Inter brand company, which includes that a company's sufficient financial information has been disclosed, at least one thirds of the profit was derived from countries and regions other than the origin country, the brand is known in the market, the economic value added figure is in the black, one is not a BtoB company, which is not highly recognized by general consumers. As for the brand value, evaluation is made based on how much profit will be achieved in the future in the light of financial power, influential power of the brand on consumers' decision making opon a purchase, and certainty of potential profit gain in the future by the brand power. Of Japanese-based companies, Sony is placed 29th and Panasonic is placed 75th.

[23] In 2009 Samsung Electric raised the target in Vision 2020 that it attains sales value of 400billion dollars by 2020, and also it attains the world's 5th top brand. Sources from Sumsung Electric Web page.

emerging markets, more and more companies will feel that Chinese based global companies are threat (Column Figure 27-1). A study by the Japan External Trade Organization (2010)[24] shows that the biggest competitor to Japanese based companies which target on middle/low pricing commodities is /or will be "Chinese companies" at present or in the future. This explains that Japanese companies are becoming more aware of the presence of Chinese companies as a competitor in gaining emerging markets, especially exploration of the middle-income class group.

In recent years, Japanese companies have enhanced development of business in emerging economies in the sector of construction machinery, machine tools, agriculture machinery, medical equipment, related components for public sectors (BtoB), in addition to home appliances, automobile, food and beverages, daily commodities, cosmetics, etc for individual consumers (BtoC). A study by the Japan Economic Foundation (2010) revealed that about a half of BtoB related companies decided to enter into emerging markets because they felt it necessary to do so taking the growth of emerging economies or the stagnant economy in developed countries into consideration. Which explains that BtoB related companies are capturing a change of the customer/user companies sensitively, and engage in business development[25] in emerging economies earnestly and seriously (Column Figure 27-2).

Taking a look at the ratio of Japanese companies categorized by business sector which regarded Chinese based global companies a threat in the Chinese market, 75.5% of manufacturing sector and 24.5% of non manufacturing sector are feeling their presence a threat. When the manufacturing sector was classified, Basic material sector showed 39.4%, which is the highest proportion of all, followed by assembling sector which showed 34.6% and sector of items closely related to people's lives" showed 25.6%, which explains that Japanese companies from the extensive range of business sectors regard Chinese based global companies a threat (Column Figure 27-3).

(Movement of Chinese based global companies)

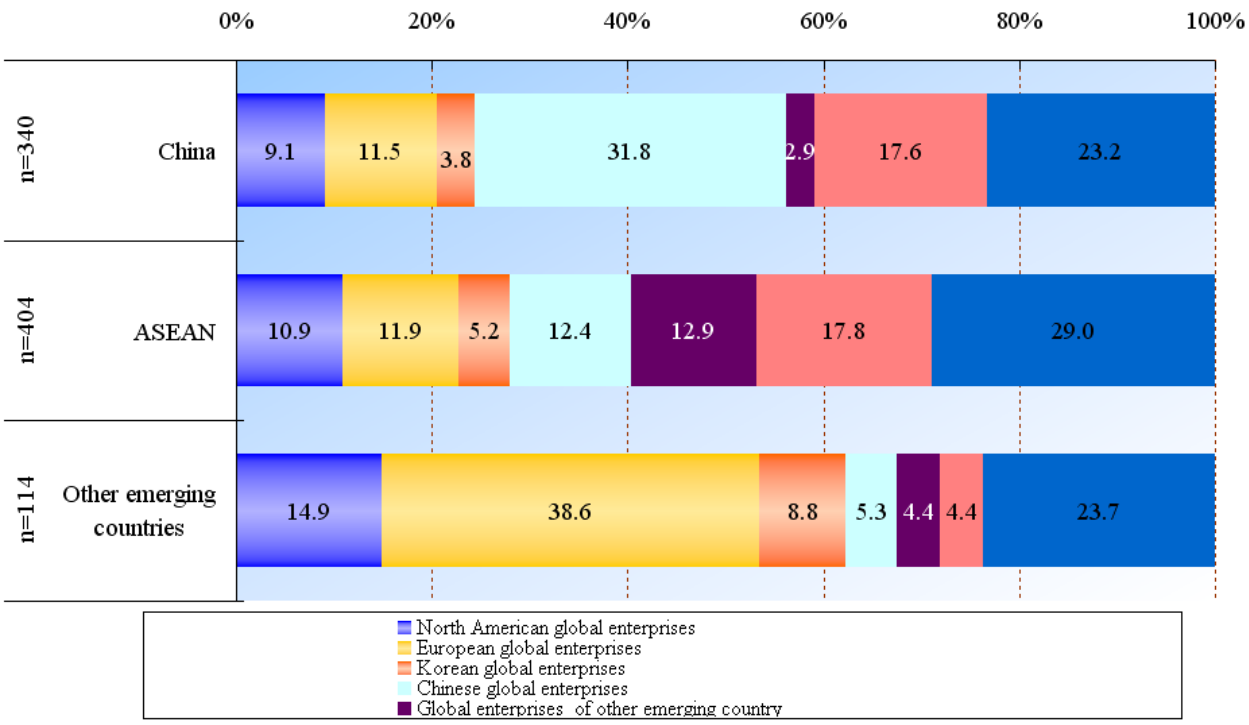
Of Chinese based global companies, in addition to BtoC related companies such as Haier, Shanghai automotive Industry from the household electronics appliances or automobile industry, BtoB related companies such as BYD auto or Hangyang Co., Ltd from component and capital goods sector also achieved a rapid growth, Taking lithium batteries, for example, beside Korean based global companies, a Chinese based global company, BYD, is now working on a tie up with an automobile company with an envision of next generation automobile market. (Refer to the Figure 3-2-1-23 as above). Among companies from machine tools sector, Hangyang Co, Ltd. and so on are growing. In 2009, Japan lost the top spot to China as the world's highest production value, which Japan was held for a long time[26].

Column 27-1 Types of Foreign Companies by Emerging Country/Region: Current Threats (Top), Future Threats (Bottom)

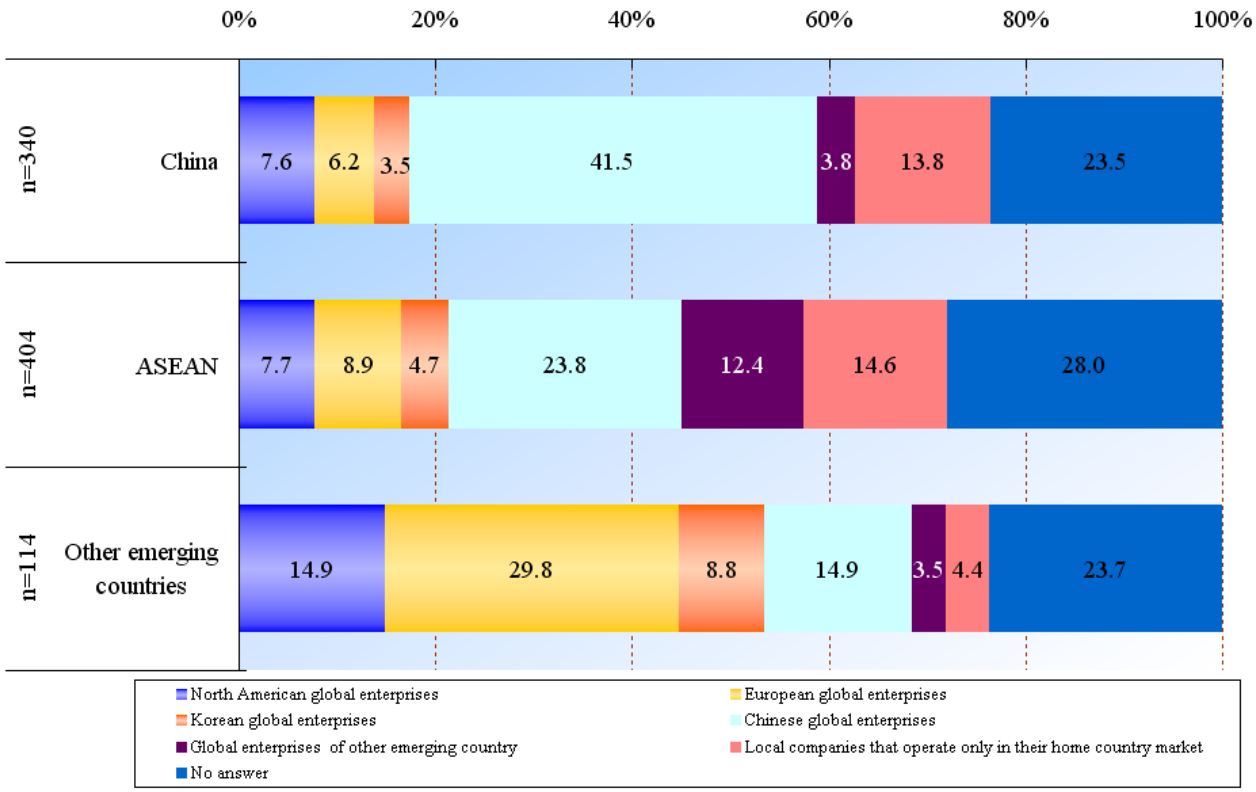
[24] According to the Japan external trade organization (2010), of Japanese companies which replied that they target middle or low pricing products at present or in the future, 46.5% of the companies addressed Chinese company as their competitor, which turned out the highest proportion, 43.8% companies addressed local companies as their competitor, 31.9% addressed Japanese companies as their competitor and 25.7% addressed Korean companies as their competitor.

[25] Of BtoB related companies, those of machine tools or construction machine makers have already explored emerging markets and taken a lead by introducing low priced model or enriching after-service.

[26] Sources: Various media reports issued by the Japan Machine Tool Builders Association



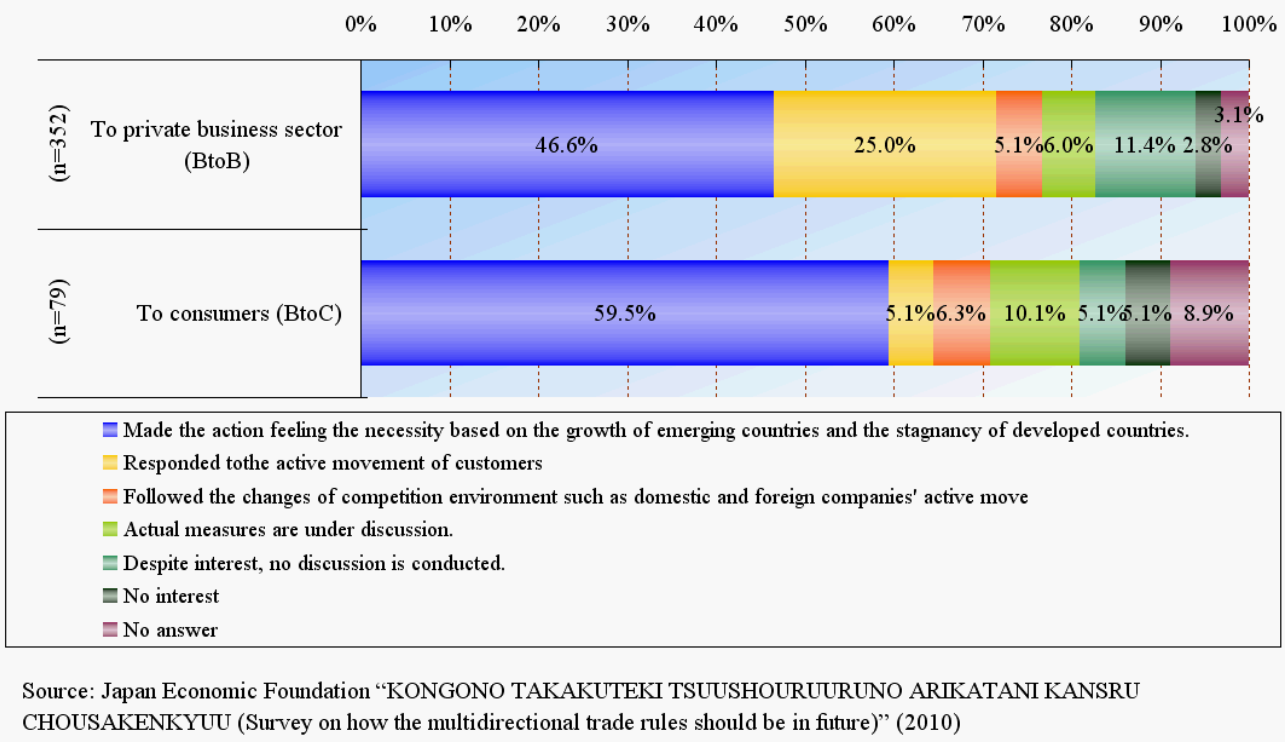
Source: Japan Economic Foundation "Kongono takakuteki tsushoruuruno arikatanikansuru chosakenkyu (Survey on how the multidirectional trade rules should be in future)" (2010)



Source: Japan Economic Foundation "Kongono takakuteki tsushoruuruno arikatanikansuru chosakenkyu (Survey on how the multidirectional trade rules should be in future)" (2010)

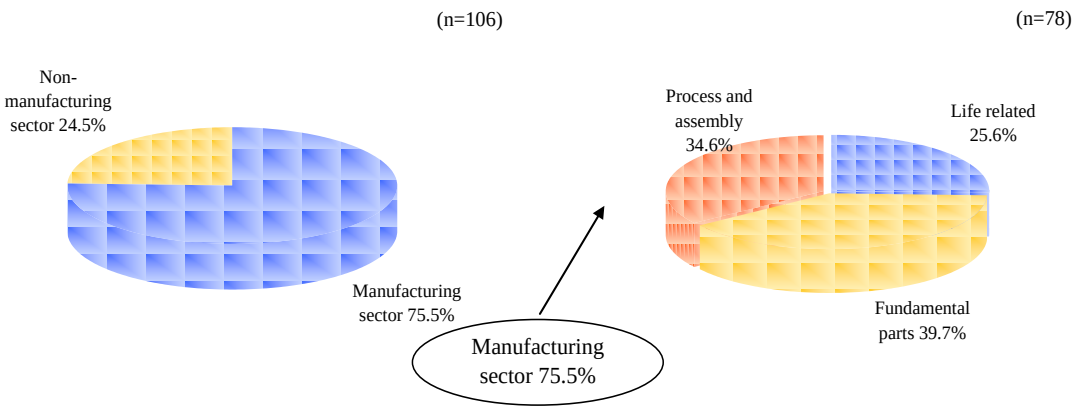
There are cases of M&A of Japanese companies by Chinese global companies that draw our attention lately, such as an acquisition of a solar generation module company, MSK, by Suntech Power Company, a capital tie up with an electronics appliance retailer, Laox by Su Ning Electronics Group, etc. Chinese based global companies are quickly obtaining management resources including high degree of technique or know-how by reinforcing a close border M&A such as an acquisition of Japanese or European companies and their hugs. Thus, they are enhancing their presence steadily as a partner to Japanese companies.

Colum 27-2 Support for the Development of Emerging Markets



Source: Japan Economic Foundation "KONGONO TAKAKUTEKI TSUUSHOURUURUNO ARIKATANI KANSRU CHOUSAKENKYUU (Survey on how the multidirectional trade rules should be in future)" (2010)

Colum 27-3 Japanese Companies that regard Chinese Global Enterprises as Current Threats, by Industry (Chinese market)



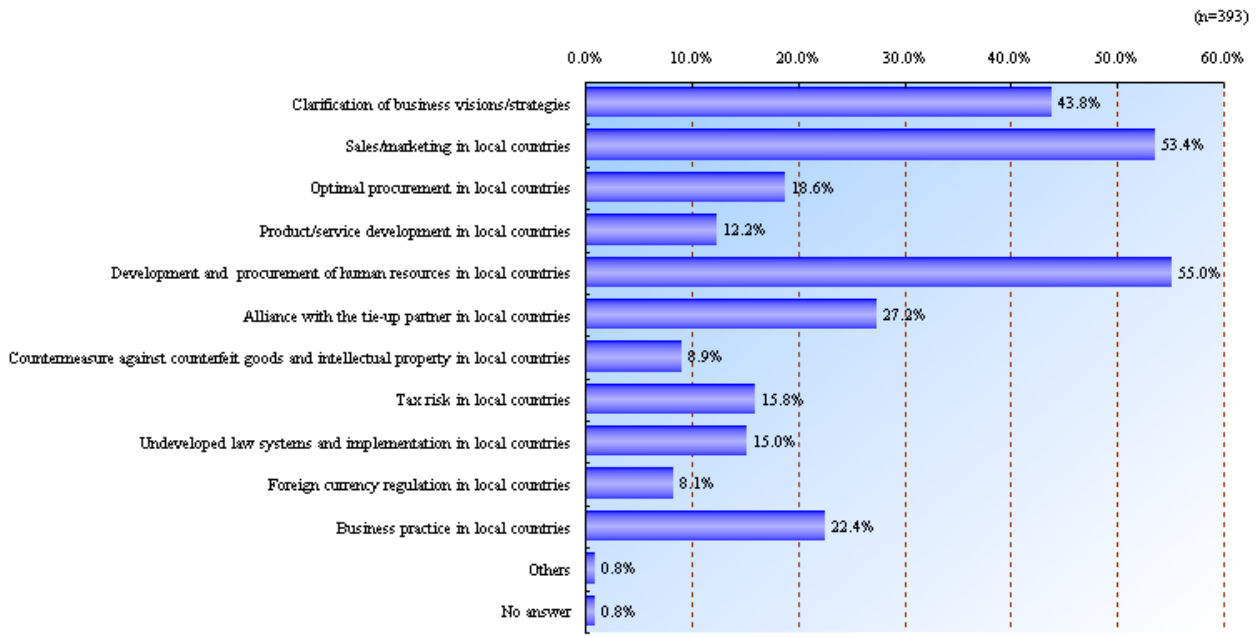
Source: Japan Economic Foundation "KONGONO TAKAKUTEKI TSUUSHOURUURUNO ARIKATANI KANSRU CHOUSAKENKYUU (Survey on how the multidirectional trade rules should be in future)" (2010)

(e) Exploration of emerging economies and measures to develop business

(i) Measures toward a thorough localization

It is anticipated that emerging markets are different from those of development countries with which Japanese companies have mainly dealt, in terms of competition environment and market needs. In order to adapt to such a new business environment, it is expected that companies commit to further localization in the aspect of management/business strategy, securing/fostering manpower, sales/marketing, etc. A study by the Japan economic foundation (2010) on problem with Japanese companies internally and externally toward exploration of emerging economies showed that 55% of the companies answered that they have problem that is associated with securing/fostering manpower in the local country, which is the highest in proportion, followed by 53.4% of the companies that have problem associated with sales/marketing in the local country, and 43.8% of the companies said they have problem that is associated with clarification of business vision/strategy (Figure 3-2-1-24). Now, new measure to solve such problem is required to be taken.

Figure 3-2-1-24 Challenges by companies aiming at an exploration of emerging markets



Source: *Research on the multilateral trade rules of the future* (Foundation of International Economics) (2010)

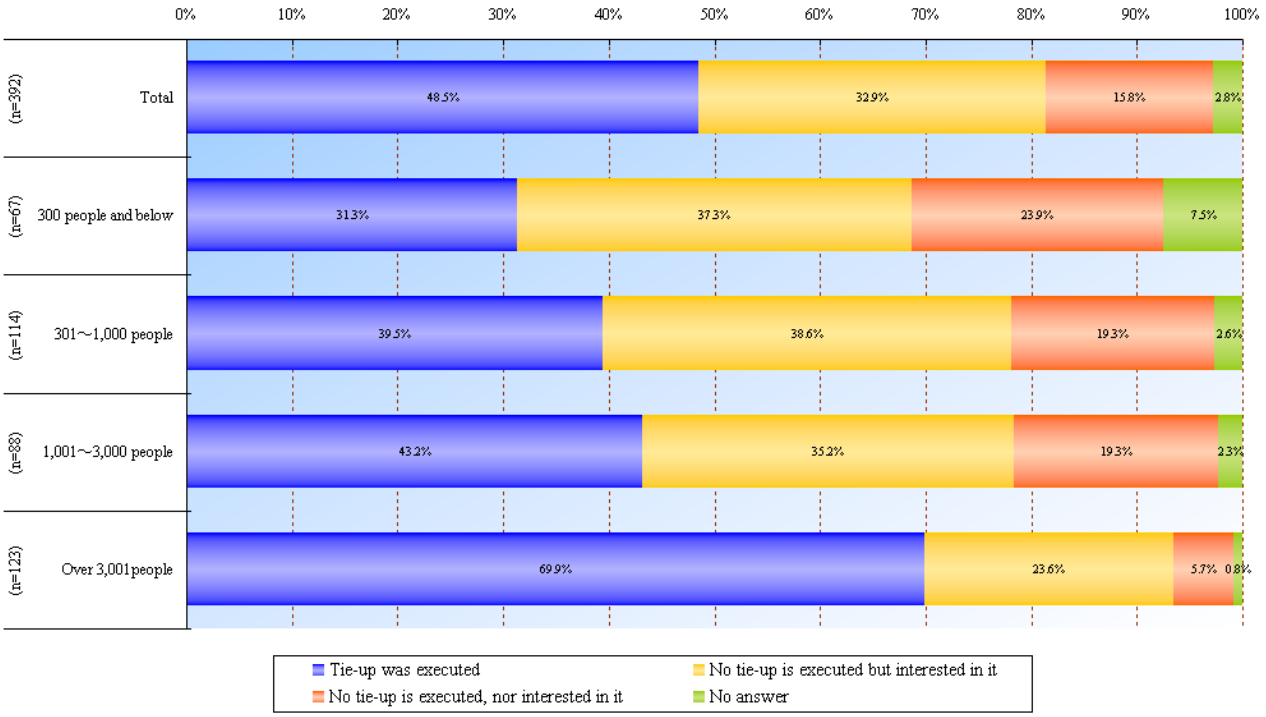
(Management/business strategy)

As long as management/business strategy is concerned, top-down decision making and procuring a proper partner by means of business alliance or M&A (merger, acquisition, transfer, equity participation, capital expansion) becomes important. Although Japanese companies are reputed to have technology that are one of the highest in the world, some addressed about Japan product in an emerging economies that the quality is overly high, price setting is too high and there is a gap between the consumers' needs[27]. In order for Japanese companies to supply products/service that is expected by emerging markets, they are required for a radial change to the product design/quality standard, innovation of business model, etc, and bold management decision-making by the management top becomes important toward the commitment thereof[28].

Figure 3-2-1-25 Tie-ups in the past 5 years aiming at an exploration of emerging markets

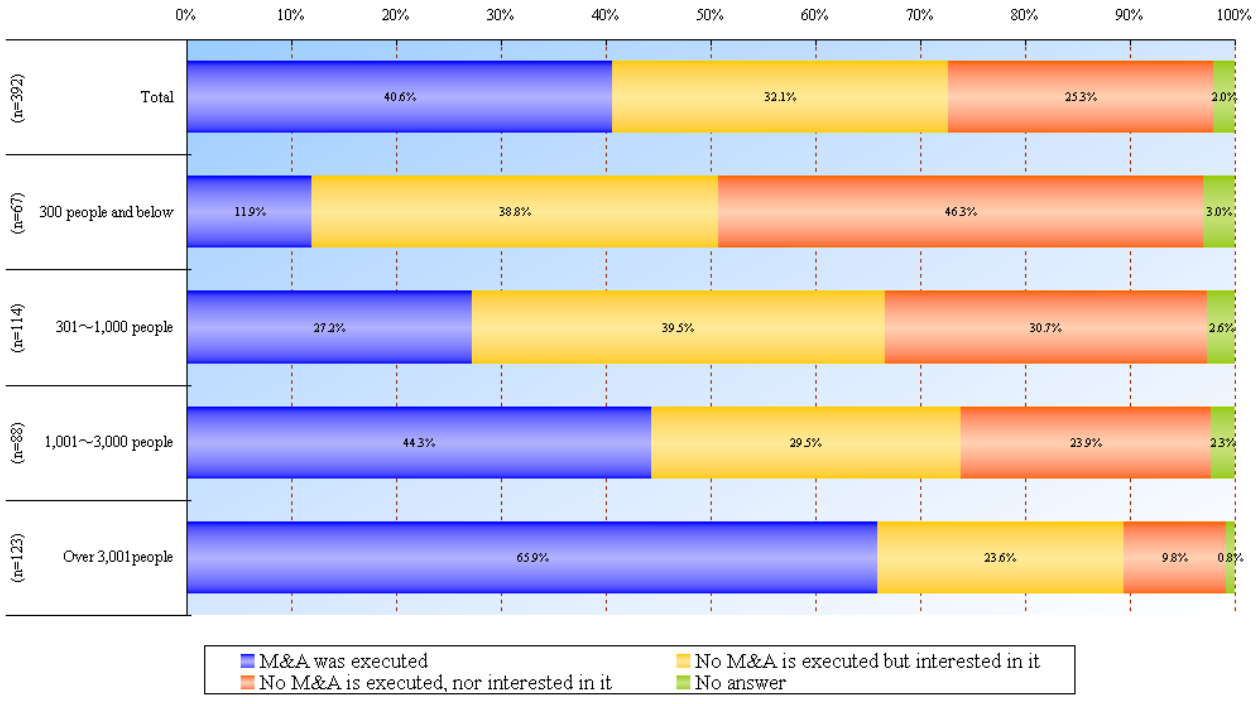
[27] Junichiro Shintaku and Tomofumi Amano (2010)

[28] According to the International Economics Foundation (2010), in reply to the requstionaire that strategy of emerging market exploration is decided by top-down with management initiative, approximately 90% of companies agreed (38.9% of companies very much agreed and 50.9% pretty much agreed). Which indicates that Japanese companies in emerging economies place importance on discontinuous decision making by top-down.



Source: *Research on the multilateral trade rules of the future* (Foundation of Internatinal Economics) (2010)

Figure 3-2-1-26 M&A deals for the past 5 years aiming at an exploration of emerging markets



Source: *Research on the multilateral trade rules of the future* (Foundation of Internatinal Economics) (2010)

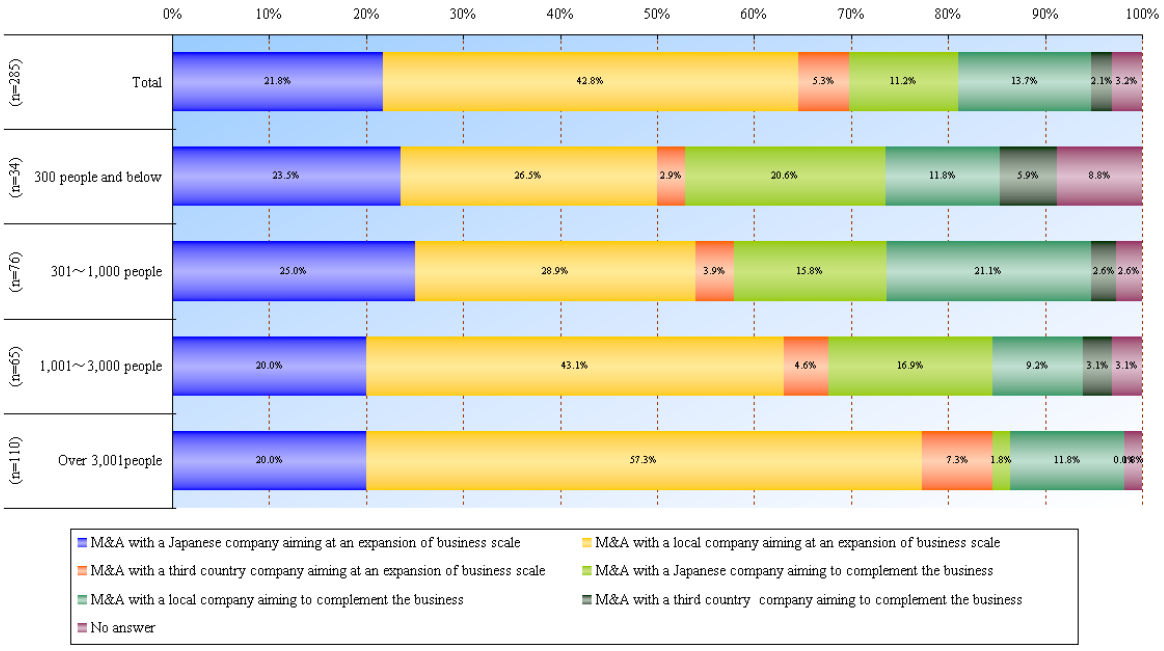
To explore emerging economies, a business alliance or M&A between local companies is effective. Intense competition is ongoing in emerging markets between multi-national global companies and local companies. An alliance with a proper partner would enable both parties to not only expand the company, but also to cope with the local needs though a formation of a sales channel in the local country. According to a research by the Japan Economic Foundation, nearly 50% of Japanese companies have gone through a business alliance through a business alliance in view of exploring emerging markets in the past five years (Figure 3-2-1-25) and more than 70% of Japanese companies answered to have gone through a M&A or interested in M&A in view of exploring emerging economies although it have never gone through (Figure 3-2-1-26). They prefer M&A, especially M&A with a local company (Figure 3-2-1-27), which suggests that they place importance on a tie-up with a local company so as to achieve localization.

(Procuring/foster manpower)

To ensure localization, it is crucial to procure and foster manpower who contributes to the company in terms of localization. A research by the Japan Economic Foundation pertaining to the necessity of localization of management categorized by job function toward market exploration in emerging markets shows, 75.7% of companies answered the localization of sales department is necessary, followed by 69.3% who answered that localization of sales department is necessary, and the last of all, 67.5% answered that localization of human resources/labor department is necessary, and 67.5% answered that localization on procurement/purchasing department is necessary. Number of the companies are increasing which stated that localization is necessary or localization is preferable on such a departments where negotiation or close communication with local people and companies are required (Figure 3-2-1-28). For such departments, it is emphasized to utilize local manpower as a measure to procure manpower so as to enhance the company's local function. Therefore, for the position of sales department, procurement/purchasing department and local instructors/supervisors, hiring and fostering local born is emphasized rather than using a Japanese expatriate.

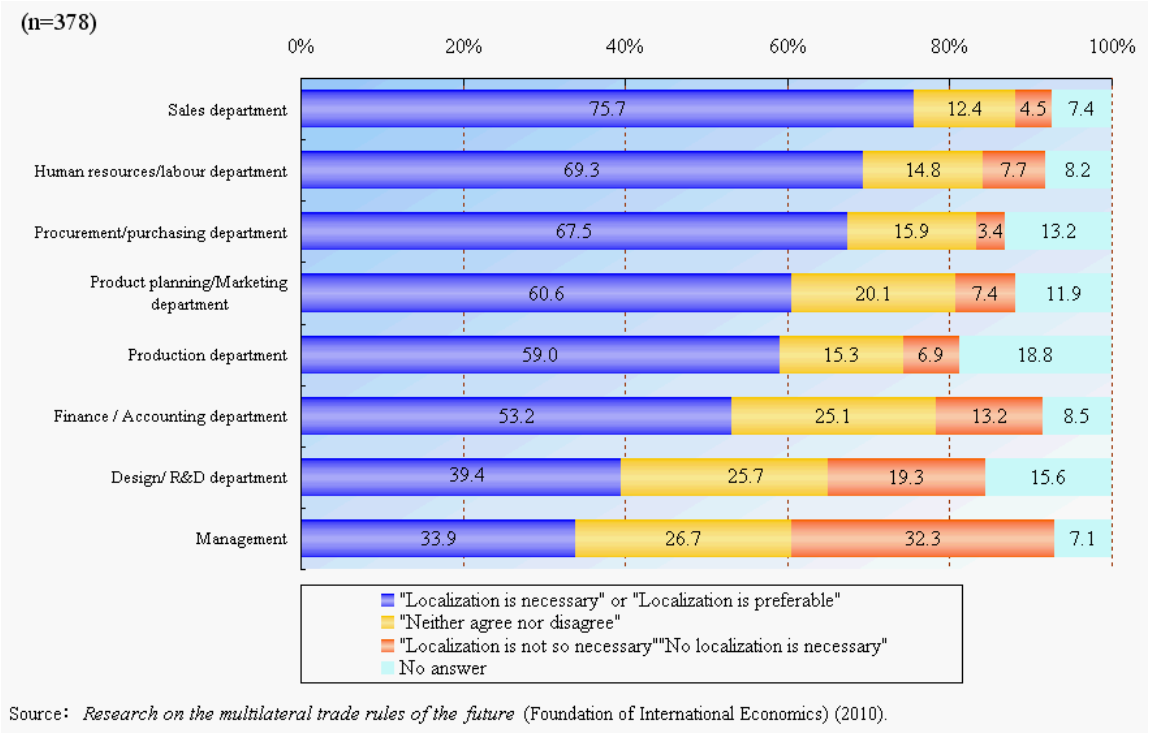
In addition, the same survey showed that with regard to the positions associated with design, development, product planning, plant manager and production control, making use of local born is emphasized, the number of which is almost as equal as that of Japanese expatriate, as a measure to procure manpower for its local function reinforcement (Figure 3-2-1-29). Attention is focused where local born is made use of in such an important department that associates with the quality of the products or service or added value.

Figure 3-2-1-27 Objectives/strategies of M&A aiming at an exploration of emerging markets



Source： Research on the multilateral trade rules of the future (Foundation of International Economics) (2010)

Figure 3-2-1-28 Necessity of localization of management



Source: *Research on the multilateral trade rules of the future* (Foundation of International Economics) (2010).

In order to let localization progress, it is important to secure excellent manpower locally. However, it was pointed out that excellent staff gets less attracted to Japanese companies due to some reasons such as lower wages offered by a Japanese company compare to that of competitors (small variance in salary) or no

prospect of becoming a top executive at their Japan head office[29], meaning no prospective of good career. Or, even though excellent manpower was hired, he/she would resign with the reason that he/she is unable to make fully use of his/her talent. In a survey by Japan economic foundation (2010), a questionnaire was poised with regard to manpower that is related to business development in overseas, in particular, relating to lack of prospect of careers for local staff, to the question of what will become more advanced in ten years time?, as little as 15% of companies answered that non Japanese employees will be appointed as an executive in Japan head office, and 8.6% answered that non Japanese employees will be appointed as a management. Such low rating suggests that no prospect of career is open up for local manpower (Figure 3-2-1-30). In addition, with regard to the localization of the management, it is important[30] to place a Japanese expatriate who controls the local company properly while making some coordination with their Japan head office. On the other hand, many employees in new generation are, in general, introverted in nature that tend to show their reluctance about being dispatched to overseas (Figure 3-2-1-31). Not only procuring and foster excellent local staff, but fostering and procuring Japanese expatriates is also an issue that needs to be solved.

In order to attract excellent non-Japanese manpower to the company, it is import to assign him/her some interesting job, treat him/her that meets his/her performance, and show the prospect of career. To help excellent non-Japanese draw a prospective of themselves climbing up the corporate ladder in their group companies, including that of Japan main office, and exert their talent, some measure can be considered such as hiring manpower globally, transferring non-Japanese staff to a group company in rotation, fostering non-Japanese staff to become the top of their Japan head office, etc. Furthermore, Japanese companies will be expected to establish a global personnel treatment system in the future, while ensuring a global human resource management or a reform of the personnel system and the organization system of Japan head office

Table 3-2-1-29 Human resources procurement to reinforce local functions

（Upper column：number, Lower column：%）

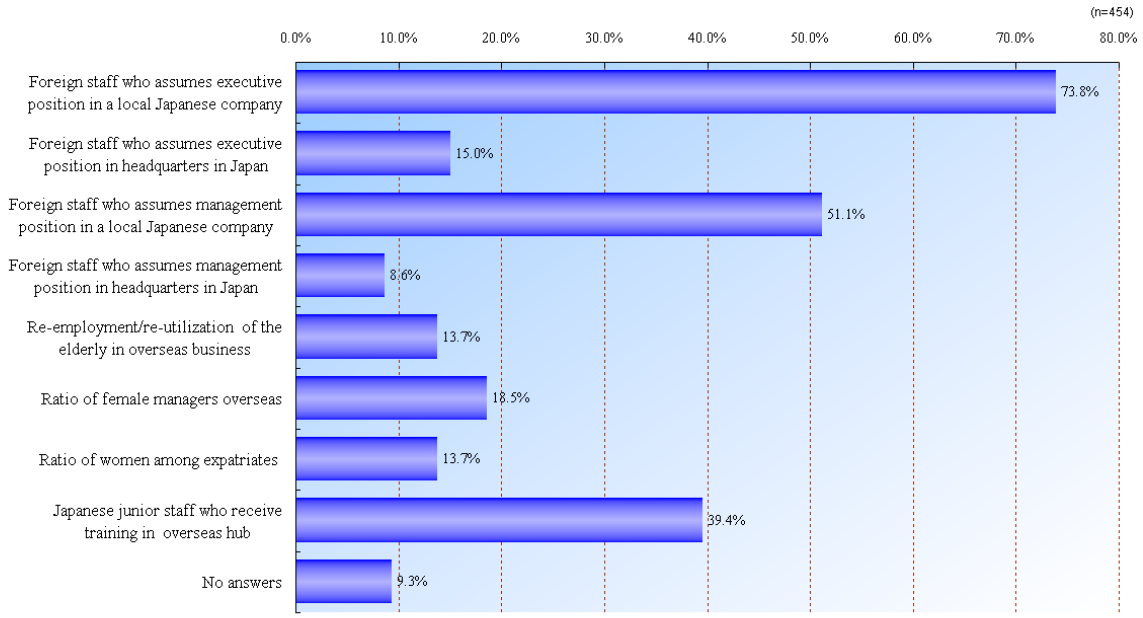
	Total	To dispatch Japanese expatriates	To use local manpower who was employed and fostered in Japan	To use local manpower with excellent carrier who was employed and fostered in the local country	To use local manpower who was employed in a third country	To use local employees from the merger or capital alliance company	No answer
Management	378	304	40	65	8	50	28
	100.0	80.4	10.6	17.2	2.1	13.2	7.4
Design/Development/	378	182	57	162	12	57	75
Product planning	100.0	48.1	15.1	42.9	3.2	15.1	19.8
Plant manager /	378	173	54	170	12	64	84
Product control	100.0	45.8	14.3	45.0	3.2	16.9	22.2
Sales department	378	164	62	258	19	87	31
	100.0	43.4	16.4	68.3	5.0	23.0	8.2
Site advisor	378	122	58	228	16	69	66
Supervisor	100.0	32.3	15.3	60.3	4.2	18.3	17.5
Procurement	378	107	43	233	20	74	69
Purchasing	100.0	28.3	11.4	61.6	5.3	19.6	18.3

Source: *Research on the multilateral trade rules of the future* (Foundation of International Economics)(2010)

[29] Shanghai FESCO, which is a government affiliated job agent major in Shanghai, summarized wage standard of 2008. North America based companies offer wages of 9,155 Yuan (approximately 134,800 yen), Hong Kong and Taiwan based companies offer 7,018 yuan (103,300 yen) and Europe based companies offer 7,010 yuan (103,200 yen). On the other hand, Japanese based companies offer monthly salary of 5,263 yuan (approximately 77,500 yen), (which does not even reach 60% of what North American based companies offer). Sources: Nihon Keizai Shinbun evening edition (18 April 2009).

[30] Mitsuhide Shiraki (2009)

Figure 3-2-1-30 Inactive recruitment of foreign staff by headquarters (With regard to manpower utilization in overseas business development, one that seems to have progressed in 10 years time)

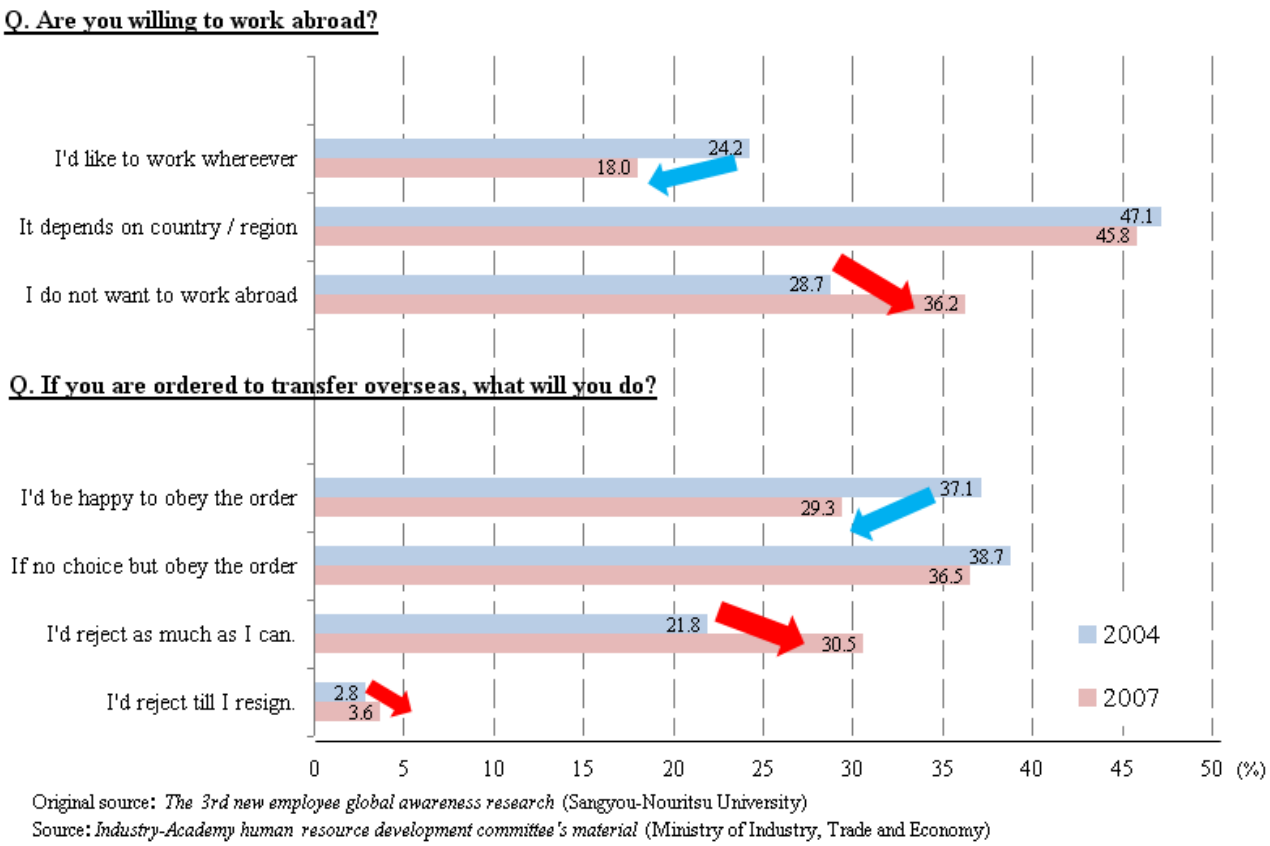


Source: Research on the multilteral trade rules of the future (Foundation of International Economics) (2010)

As further the globalization of a company progresses, the more it gets necessary to have manpower at a local hub who is familiar with the ideology and characteristic of its head office and act accordingly, and works in-between the local company and its Japan head office while making some coordination and keep communication going. In view of procuring such manpower in the future, some measure can be considered to be taken, such as supporting local education institutions (donation, installation of a class in collaboration with an organization from the society, scholarship scheme, etc) or back-up foreign students from the local country studying in Japan. It will also become necessary to work out a plan and foster and place a Japanese expatriate according to the plan.

For the part of the Japanese government, it is required to take positive measure to supply global manpower, for example, facilitating intake of high-skilled manpower from overseas or enriching the scholarship scheme to help Japanese national turn to a global individual.

Figure 3-2-1-31 Global awareness with Japan's new employees (on working abroad) (Re-cited)



Original source: *The 3rd new employee global awareness research* (Sangyou-Nouritsu University)
Source: *Industry-Academy human resource development committee's material* (Ministry of Industry, Trade and Economy)

Column 28 Yamanaka Goukin Co., Ltd. where foreign manpower serves as a key role for their global market expansion.

Yamanaka Goukin Co., Ltd. is a company, head office of which is located in Higashi-Oosaka city and engages in the development of method of mold casts and manufacturing of forged items. The company works positively to expand its business to overseas. It has 2 business hubs in China and Singapore. The company has superior technology on plastic processing, which is outstanding in the world. Its high technology level has come to be known to the world through words of mouth originated from university

professors or companies it has business with. Owing to the reputation, thereof, job applications are coming in even from individual from overseas or foreign students studying in Japan. Thanks to it, they are able to secure excellent manpower.

Of total of 230 staff in Japan, The company now has hired 11 non-Japanese personnel (7 Chinese and 4 Korean nationals). These non-Japanese personnel have been placed in technical division (4 persons), sales division (2 persons), accounting division (2 persons) and manufacturing division (3 persons) respectively. One of them has been placed in the technical division as an executive, who has been working for the development of analysis software as a core figure. The way they dealt with their job serves as a good example in many aspects. As there are things that won't be able to be noticed from the view of Japanese, they make Japanese staff aware of it and made them review their conventional way.

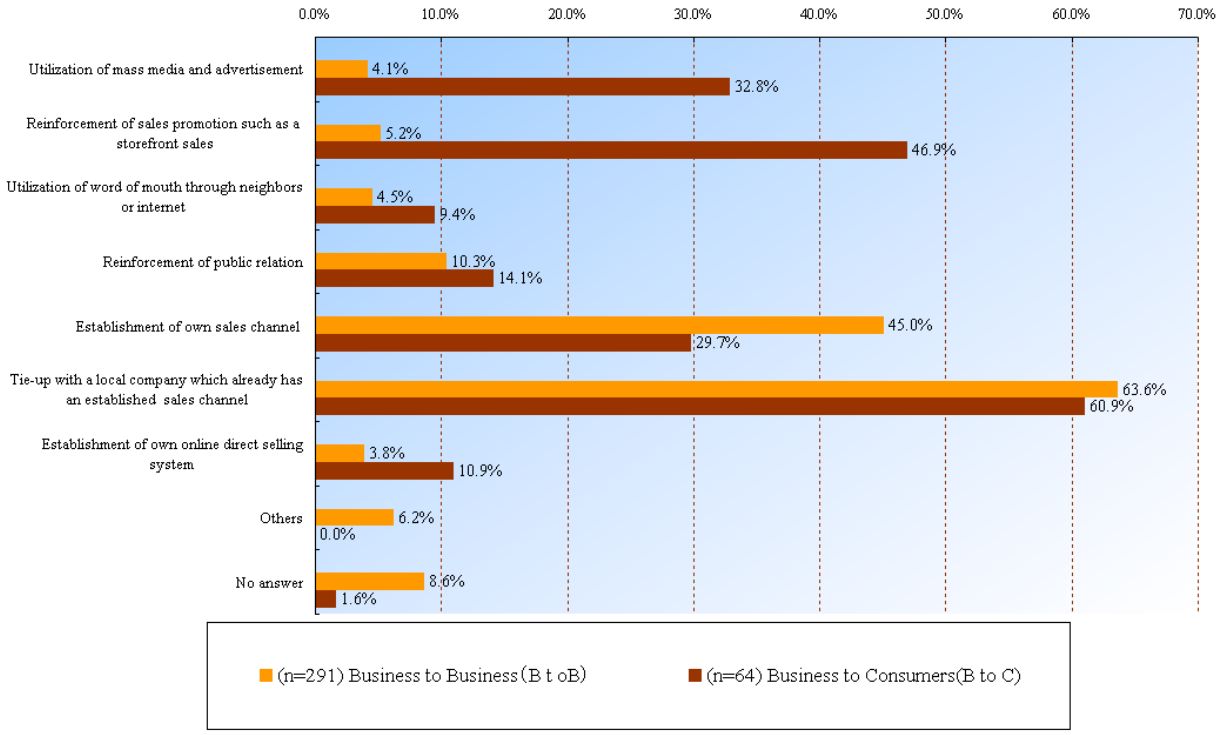
It was not easy for the company to enter overseas markets and compete with rivals, where rivals have already dominated the market, as it made their advancement into overseas behind the rivals. Hindered by variance of commercial practice, it has never been easy for Japanese staff to perform sales in overseas by themselves. Yet, it would be a high risk to out-source its overseas sales function. That the reason why then-president set on to recruiting non-Japanese personnel who understands the system or custom of

an overseas country, aiming to expand overseas sales channel. Such as this, an executive of Korean national was hired, who is currently placed in sales department.

Previously, the executive of Korean national was working for a company in Korea, which produces and sells stationery, where he assumed overseas trading operation, mainly dealt with pens. He achieved overseas sales channel expansion during his time there. His experience in the overseas trading operation is now made use of in the current job.

Firstly, he understands the needs of the customers, and let the company staff know that people in the rest of the world does not always understand a common sense of Japanese, as it is important because parties they negotiate with are non-Japanese. He serves as a bridge connecting to overseas country. He visits not only the customer of executive class, but also goes and talks with an operator of the customer's factory so as for him to understand their needs steadily. He successfully gained recognition of customer by letting the customer believe that he never fail to help the customer carry out their job smoothly, if they talk to him and ask for a favor or request. Through his efforts, he managed to contribute to the company to expand the market share.

Figure 3-2-1-32 Strategies on which place importance upon sales and marketing aiming at an exploration of emerging markets (categorized by BtoB and BtoC)



Source: *Research on the multilateral trade rules in the future* (Foundation of International Economics)

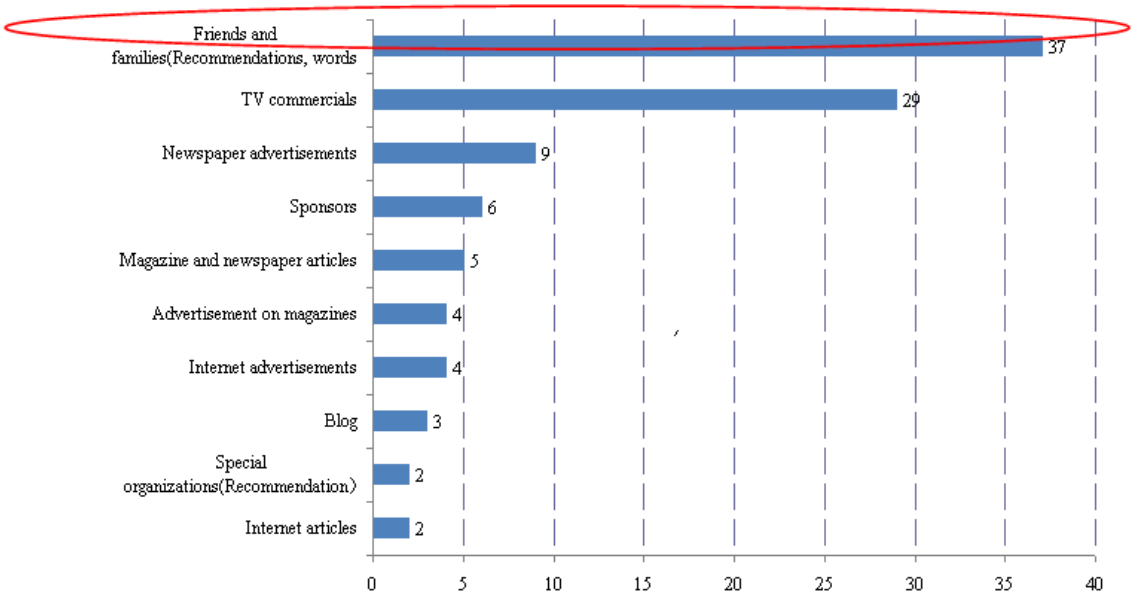
(Sales/marketing)

To realize a thoroughly localization, it would become important to enrich the sales and marketing function suitable for the local market of emerging economies. Understanding local consumers' needs, taste, price range that local consumers can afford, etc. are just prerequisites before supplying local-oriented product and services. A survey by Japan Economic Foundation (2010) showed that more than 50% of Japanese companies addressed "Sales and marketing in the local country" as a problematic issue with regard to exploration of the market /expansion of business in emerging economies (Figure 3-2-1-32).

In order to supplement low popularity of a company and lack of sales channel in the local country, an integrated marketing or planning, which is of local community based is important, beside tying up business with a local company or multinational global company which owns their sales channel. It also becomes important to disseminate information on the product to consumers of emerging economies through a constant marketing such as sales promotion at a retail shop or through words of mouth among friends or families, not only through medium such as mass media or advertisement.

Taking Chinese market, for example, in addition to advertisement using mass media such as TV, recommendation from a friend or family and words of mouth are giving a great impact to consumers' behavior (Figure 3-2-1-33). In case of such a market, after a purchaser purchased a product such as an automobile where after-care service is regarded important, he/she talks about his/her impression about the after-care service to others. After all, it is those purchasers who give a great impact to consumers' behavior. Hence, customer-care becomes important.

Figure 3-2-1-33 Media influence on consumption behavior of Chinese consumers (2008)



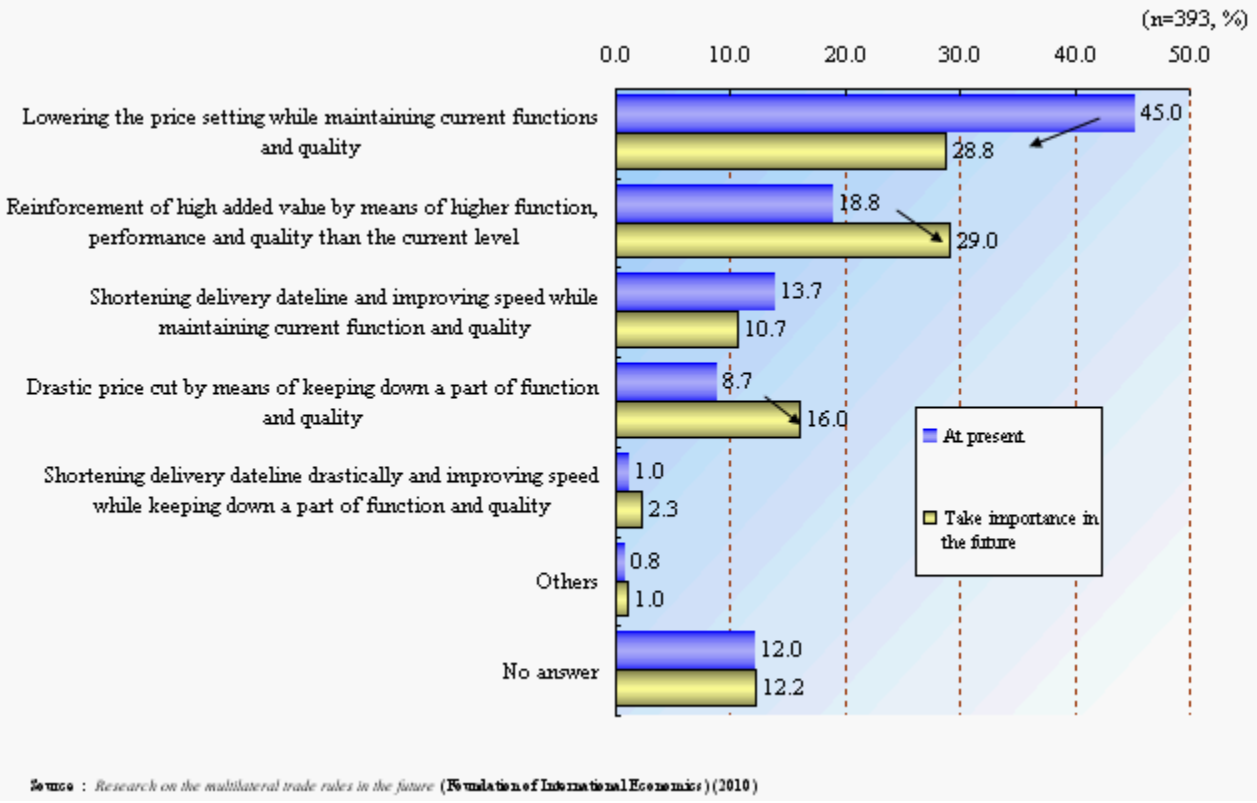
Source: *The Mckinsey Quarterly What's new with the Chinese consumer (www.mckinseyquarterly.com)* (McKinsey & Company) (October 2008)

Furthermore, to let the local oriented sales and marketing strategy deepening even further in the future, it will become essential for Japanese companies to let it closely relate with the product and service development strategy. In such a case, balancing of quality/value versus pricing shall be reviewed upon exploring emerging markets. Even a business strategy incorporated with an intermittent innovation would be regarded as important, where some part of the function /quality may be reduced[31] so as to lower the price sharply. In a research by the Japan Economic Foundation (2010) pertaining to a method of development of product/service involving exploration of emerging markets (Figure 3-2-1-34), it showed that more and more companies place importance on low pricing significantly by keeping down part of function/quality. Yet, still many companies favor generation of high added valued product by enhancing the

[31] The situation where innovation or business model that Japanese companies have achieved so far in the markets in developed countries cannot be adopted to the emerging markets strategy is called "Dilemma in emerging markets". Junichiro Shintaku and Tomofumi Amano (2010).

function/performance/quality that are higher than that of at presents." This explains that the business strategy of Japanese companies has been changing.

Figure 3-2-1-34 Methods of product/service development aiming at an exploration of emerging markets



Source : *Research on the multilateral trade rules in the future* (Foundation of International Economics) (2010)

Above-mentioned countermeasure against emerging market is required by not only final goods makers. Even component or material makers need to take such measures quickly to procure emerging markets. For example, with regard to Japanese companies, which have made their advancement into overseas including Asia, as analyzed in Chapter 2, more and more Japanese companies established in overseas tend to procure components within the local country (Figure 2-2-3-4). As Column 27-1 Figure shows, many Japanese material makers regard China as a threat. Growth rate in emerging economies is very large. When taking a look at the China's annual automobile sales figure, it increased by 4.26million units in 2009 compare to the previous year. This figure is equivalent to more than 90% of Japan's annual sales figure[32]. In order to cope with rapidly growing emerging market, not only final goods assembly makers, but also component or material makers are required to make advancement in overseas or ensure a thoroughly cost-down by getting rid of extra functions, and to review the balancing of quality/value versus pricing, and supply product/service after studying the local needs. In that occasion, it will be necessary to make use of "Strength of Japanese companies", as stated later, so as to cope with the fierce competition that is ongoing[33] in emerging markets. Japanese companies from a big company to middle- small sized company, as well as from a parent company to subcontractor, are expected to cope with the fierce battle in emerging markets or cope with a change to the world's business model. It is necessary to take actions immediately.

[32] Japan's automobile annual sales amount in 2009 was 4,610,000 cars (Marklines Co., Ltd.). While, China's automobile sales amount during the first quarter period in 2010 (Bloomberg) was 4,610,000 cars. Hence, an expectation rises toward China's smooth growth in the future.

[33] For example, advancement of modularization of products or manufacturing process architecture, etc.

Figure 3-2-1-35 Rice cookers in red which were input into Chinese markets

Photo : Panasonic Co., Ltd.

<Example>

It is also important for the local oriented marketing to incorporate culture or taste of the local market into the product development properly. Panasonic has conducted a thoroughly research on life of the local country and market research, led by their living research center in the local country, and the outcome is reflected to the product planning.

For example, Chinese favor red as it is said to be auspicious. So, the company's life study center in China investigated why Chinese favors red color, and proposed red color as a design concept. When the product was finally materialized, it became a big hit[34] (Figure 3-2-1-35).

In the emerging markets, there is an uncertainty in operating business. Lack of information or lack of human connection will become an obstacle, too. Middle-to-small sized companies, in particular, do not have enough management resources to combat against such obstacles. Not so little of them may have found it difficult to make advancement to overseas by themselves, or may abandon their idea of overseas advancement. Many foreign governments, including Korea, are rendering support in positive manners to their country's companies, which attempted to gain emerging markets. Taking Korea trading investment promotion organization, KOTRA, for example, this organization renders marketing services for mainly

[34] Panasonic Co., Ltd.

middle-to-small sized companies. Beside that, they holds business negotiation in place of companies which do not have their sales hub in overseas, attracts foreign investors to Korea[35] and sources foreign manpower.

On the part of Japan, function to gather and analyze marketing information on local markets by use of the Japan External Trade Organization is expected to be enhanced, and the Japan-Made Products Trade Fair that is taken place in various local markets is also expected to be enriched.

(ii) Visualization of hidden competitiveness

As for Japanese companies which are exploring emerging markets or developing business in emerging markets, it is important to supply product/service after reviewing balancing of quality/value versus pricing or studying the local needs. Beside that, it is important to provide high quality/high value added product / service making use of their strength that Japanese companies have been building up for long. The concept of high quality/high added value is vague. In many cases, consumers in emerging markets capture the meaning of it in their senses. Hence it becomes necessary for the future to "visualize hidden competitiveness" for the quality of the product/service or added value, which has been Japanese companies' strength.

Upon doing so, global standardization[36] will become a one of the effective tool. In specific, we can take advantage of our strength. Global standardization on high quality/high added value product in the sector of environment/energy, safety/security, and inspection/measurement method, etc. will become important. In addition to it, positive promotion of global standardization are required by reinforcing ties with emerging economies such as Asia, or global standardization based on the Open/Close strategy.

(Global standardization of the sectors in environment/energy, safety/security, which have been Japan's strength. (Product + Inspection/measuring method)

It is important for Japanese companies to promote global standardization in strategic manner in the environment/energy and safety/security sector, which have been Japan's strength, for example, electronic cars, energy saving household appliances or live support robots, in order to realize the visualization of hidden competitiveness.

For example, electronic car and electrical hybrid cars were produced by Japanese automobile makers, and have preceded other countries in terms of technical development and market introduction. Japan set the standard on these electric cars for protecting passengers from electric shock under the normal operating condition, and proposed it as global standard, then worked with other countries for various coordination. The application was adopted at the forum organized by the United Nations European economic committee[37] as global standard on electric cars safety in 2010, which serves as a footing toward expansion of markets for the future[38].

With the coming of aging society, there is an expectation toward life support robots, which are of use in the sectors related to people's lives that supports the safety and security such as nursing and welfare. So far,

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[35] KOTRA Website: www.kotra.co.jp/kotra/business.html

[36] According to the Japanese Industrial Standards Committee, global standard is an international rule with regard to the quality, performance, safety, measurement, and test method of products. Standard is defined as hyoujunn, kijun and kikaku.

[37] Automobile standard harmony world forum (UNECE/WP29). At present, coordination with other countries toward global standardization aiming at protection from an electric shock during a collusion is ongoing, too.

[38] The ministry of Land, Infrastructure, Transport and Tourism's press release material (11 March 2010). Furthermore, in April 2010, the next generation automobile strategy research group within the Ministry of Economy, Trade and Industry announced "Next generation automobile strategy 2010". Chapter 8 addressed the direction toward global standardization of accumulator and charging connector system and smart grid as the global standardization strategy. Taking lithium ion batteries for accumulator, for example, its material and shape are not unified that competition in research and development between companies in and out of the country intensified. In such a circumstance, standardization of battery pack, system performance and safety evaluation test are being studied by ISO, and standardization on cell's performance and safety evaluation test are being studied by IEC.

technique, standard/rule with regard to the safety of life support robots were underdeveloped. However, the Ministry of Economy, Trade and Industry developed "Personal safety techniques" lately, and the life support robot practical use project is implemented in order to establish "Safety verification method" while gathering/analyzing data on safety. They are also aiming for "global standardization" in view of overseas market exploration[39].

It is important for Japanese companies to promote global standardization on inspection/measuring method as well, not only standard of the products. Taking a recording media such as CD or DVD for example, despite great variance in the quality between Japanese makers and overseas makers in term of durability, users simply purchase one and use it without considering about it. Meanwhile, the method of measuring readable time of stored information on the record type DVD was standardized globally, led by a Japanese company, which now serves as a tool to make possible of "visualization of hidden competitiveness" for high quality/high added value product[40].

Even in the environment/energy related sectors, beside global standardization on electronics cars, global standardization on inspection/measuring method of photo catalyst[41] is ongoing. So far, there was no objective evaluation method on the performance of photo catalyst, which made it difficult to discriminate Japan's best technology/product function. Also risk of loosing trust is heightened in the whole market due to inferior products. That is the reason why Japanese country has pushed forward this global standardization on the performance evaluation test method for photo catalyst, and applied it with ISO. At present, global standard on air cleaning function or self-cleaning function have been adopted one after another. It helps in maintaining a fair competition environment, at the same time, it helps to realize "Visualization of hidden competitiveness" such as discriminating product/service. Hence, expectation is heightened toward further market expansion[42].

(Global standardization through enhancement of tie-up with emerging economies, including the Asia's economic zone.)

It is also important for Japanese companies to promote global standardization on collaboration with emerging economies, including the Asia economic zone, while taking advantage of Japan's strength in the sector of environment/energy, safety/security aiming at the "visualization of hidden competitiveness". It is important to make fellows to work on global standardization. However, it is urged to establish relationship or to enhance collaboration with emerging economies, especially the Asia economic zone, where the importance of which as a market is increasing, in addition to the conventional European nations.

There is an example relating to an environmental friendly packaging that global standardization activities were pushed forward through collaboration with emerging economies, including the Asia's economic zone. Japan has prepared the joint-draft and proposed for global standardization in the collaboration with Europe and Asia's nations, aiming at achieving global harmony with the related standards associated with the environmental friendly packaging. As a result, Japan was able to get an approval on "Environment friendly packaging standard specification" from each country at the international conference[43] in December 2009. Consequently this proposal is going to be discussed formally. It can be said that the close collaboration

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[39] Material released by The Ministry of Economy, Trade and Industry (25 March 2009), the New Energy and Industrial Technology Development Organization (29 June, 2009), and the National institute of Advanced Industrial Science and Technology (3 August 2009)

[40] It was adopted as ISO/IEC10995. Reference: Junichiro Shintaku and Tomofumi Amano (2009) and document released by the Japan Recording Media Industries Association. (http://www.jria.org/personal/pdf/info1002246.pdf)

[41] Photo catalyst is a material that activates when a light fell on it. Its function is to clean the environment such as decomposition of organic material on the photo catalyst surface making use of oxidizing power, or decontamination of water making use of the nature of water, that water spreads easily.

[42] "Reinforcement of competitiveness associated with intellectual property and global standardization expert committee" set-up by Intellectual Property Strategy Headquarters and "Global standardization on photo catalyst self-cleaning performance evaluation method" by the Ministry of Economy, Trade and Industry (5 August 2009). http://www.jisc.go.jp/newstopics/2009/photocatalyst/pdf.

[43] The 1st International meeting on ISO/TC122/SC4 (Packaging / Packaging and Environment) which was held in Stockholm between 10 and 11 December 2009.

with, not to mention European nations, but also members of the Asia packaging federation, namely Korea, China, India, Thailand, Malaysia, Filipinos, Indonesia, Sri Lanka, Bangladesh, Singapore, Vietnam, etc attributed to this success[44].

(Global standardization based on the Open-Close strategy)

However, such activities toward globalization are part of the requisite for the realization of visualization of hidden competitiveness. In order for companies to associate global standardization with the profit gain, business strategy, such as the open/close strategy, in which "Knowledge to use Knowledge is made use of, which is emphasized by Intellectual property strategic headquarter[45].

Of late, the structure of International division of labor business or business model of global companies has changed so fast. Amid such a circumstance, European companies are working toward the Open/module and global standardization[46]. They prevail their own innovative technology and product. On the other hand, they try not to disclose key information on their technology and product (Black box), so that they could capture initiative to the business. In order for Japanese companies to succeed in business development in overseas, including emerging economies, it is important for them to, firstly, understand the structure of "Knowledge to use Knowledge", and then implement "Open/close strategy" (Figure 3-2-1-26) which is a combination of the open policy through the open innovation of standardization, and the black box concept through strategic utilization of patent or know-how. Whereby, they are able to enhance their profit[47].

(iii) Toward a creation of higher added value, making use of the strength

A certain degree of price competition comes important at emerging markets where the income standard is not so high. It is anticipated that the competition further intensifies along with the expansion of the market. Under the circumstance, it becomes more important for Japanese companies to more create added value taking advantage of the strength, which is unique to Japan, together with "localization" and "visualization of hidden competitiveness", instead of fighting the price competition form head-on.

There is an extensive proportion of high income group depend on the region of emerging markets, further more, growth of emerging economies is outstanding. It is anticipated that China's middle-income group of currently 1.53billion population will shift to the high-income group in the near future, who will become big purchasing power. Especially in Asia, an expense on household service is anticipated to increase in the future (Figure 3-2-1-37). As expenses to enrich the life is expected to increase, it is required to design/provide "thing (KOTO in Japanese)" that meets the needs of people and society. Not limited to manufacturing of products of high performance/high quality, which have been Japan's strength, Japanese companies are expected to create new structure by combining goods or services. It would become important to promote "thing (Koto in Japanese)" that can materialize latent desire of people. Necessity to explore new demand is heightened for Japanese companies. Exploration of new demand such as this is believed to bring out expansion of export of high-added valued product from Japan and also expansion of high quality employment opportunity.

Figure 3-2-1-36 Open/Close strategy by European companies

[44] "Global standardization activities on the environmental friendly packaging developed in full scale" by the ministry of Economy, Trade and Industry (21 December, 2009). (http://www.jisc.go.jp/newstopics/2009/2009packing.htm.)

[45] "Reinforcement of competitiveness associated with intellectual property and global standardization expert committee" was set-up by Intellectual Property Strategy Headquarters in February, 2010. Through the meetings totaled 6 times, "Intellectual Property Strategic Program 2010 Gist" was prepared in the end of March 2010, and "Intellectual property strategy plan 2010" was announced in May 2010.

[46] Takahiro Fufimoto, Yaichi Aoshima, Akira Takeishi (2001), and Koichi Ogawa (2010a).

[47] Koichi Ogawa (2010b), and the Industrial structure council, Industrial competitiveness committee, Information economy sub-committee, and Intellectual property strategy headquarters.

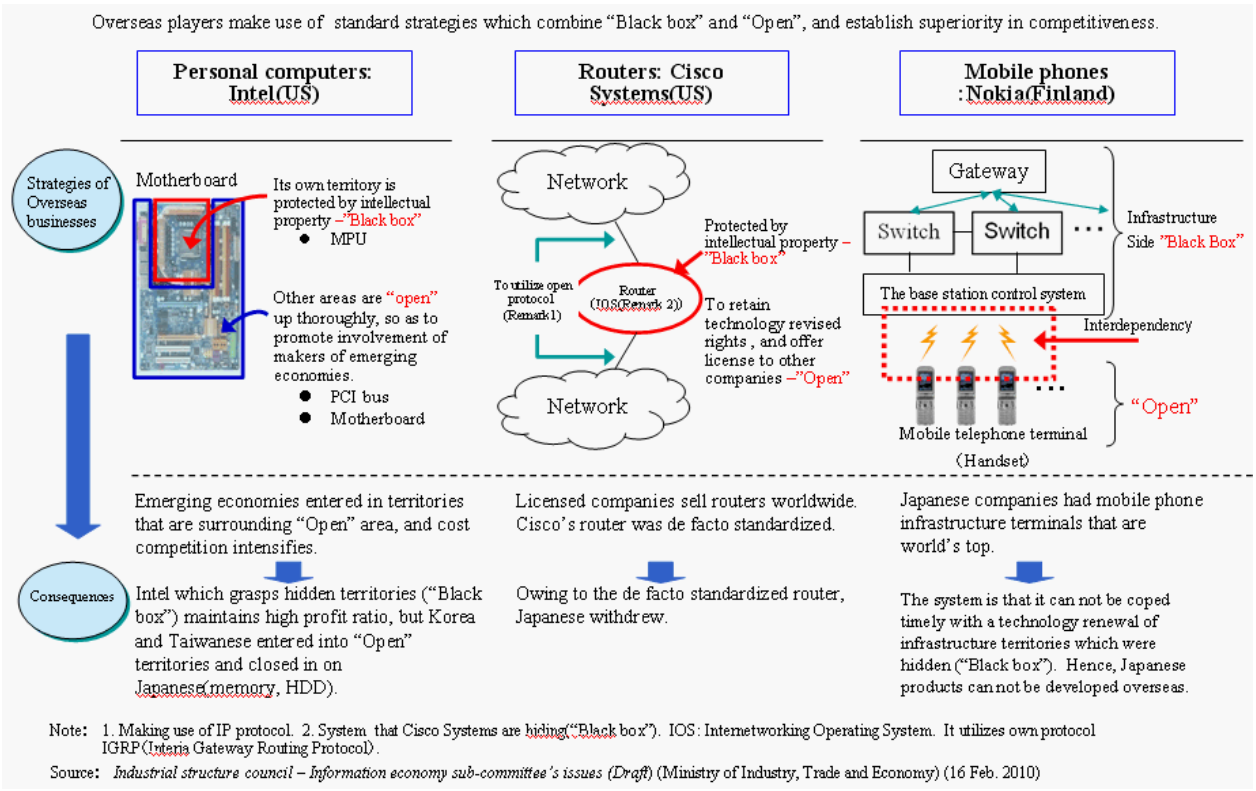
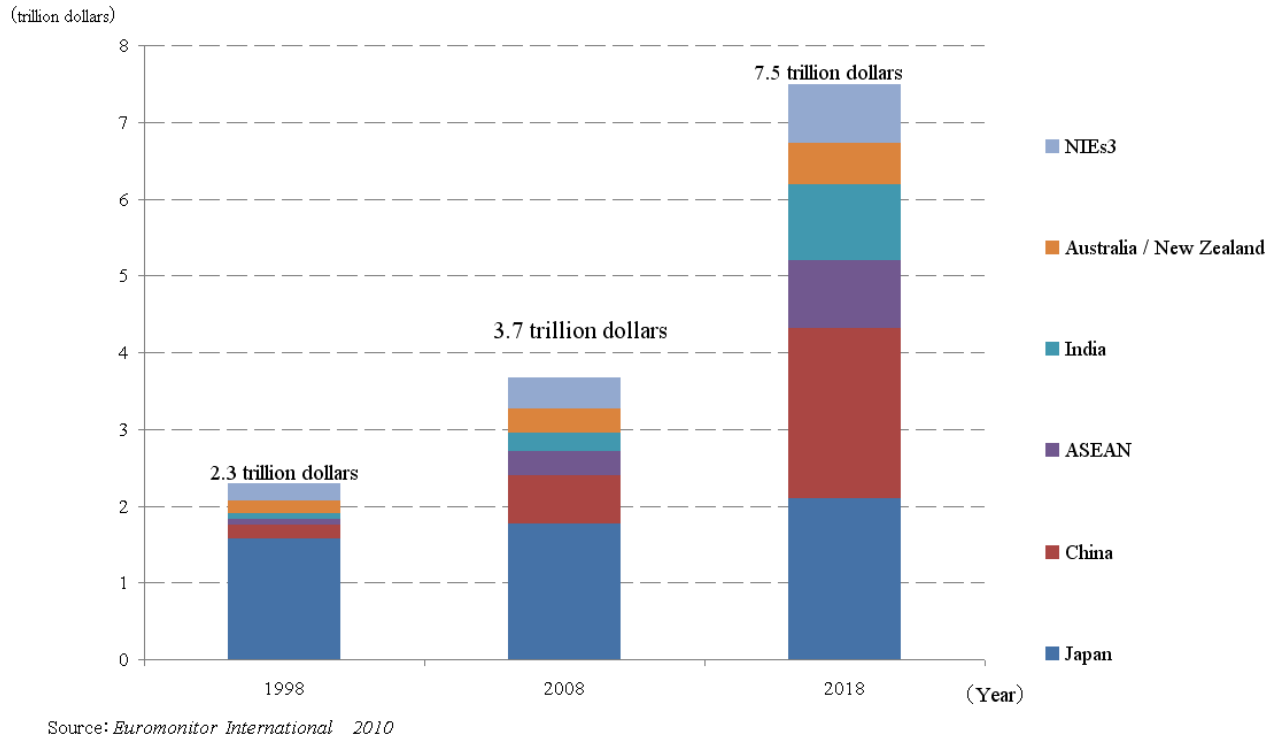


Figure 3-2-1-37 Service expenditure in Asian countries and regions - Actual performance and forecast (Re-cited)



Source: *Euromonitor International 2010*

In addition, it is also important to make use of the brand image that Japanese companies have cultivated up to now, including the image of "high quality" that were attained backed by high technology that competitors are incapable of imitating. Goods/services that Japanese companies have provided are highly reputed for its high quality, good feature/good taste, distinctive personality and characteristic, etc among consumers in emerging economies, mainly in the Asia economic zone (Figure 3-2-1-38). Such high reputation and image means exactly added value of the goods/service. Amid the intensified price competition, Japanese companies shall regard them particularly important in addition to the functional value of goods/service. It is required to create further added value through the combination of goods/service and the brand image by means of sales campaign making use of media mix, to maintain/enhance Japan's brand power on goods/service that come from "Made in/by Japan', and to foster brand image which create "longing sentiment" out of consumers of emerging economies including the Asia economic zone.

Figure 3-2-1-38 Comprehensive evaluation on images toward each country's products replied by consumers of 14 emerging economies and regions, mainly Asia

	Japanese products	European products	American products	Korean Products	Chinese products
Average of the 6 items below	**1) 43.0**	**2) 34.3**	**3) 33.4**	**30.4**	**21.2**
-High quality	1) 70.0	2) 46.9	3) 41.7	26.7	17.9
-Cool/good taste	1) 43.6	3) 39.6	2) 41.3	35.3	17.5
-Clear distinctive personality	1) 39.7	2) 35.3	3) 33.6	23.5	16.3
-Fun	1) 35.0	2) 27.4	3) 26.6	25.8	17.9
-Feel the momentum and vigor	2) 35.5	31.4	3) 31.6	1) 41.5	3) 31.6
-There is value for money	1) 34.1	25.4	25.3	2) 29.3	3) 26.0

Note：1. 1), 2), 3) stand for ranking. 2. Average value of the 14 countries and regions for each item. 3. The 14 countries include China (Beijing, Shanghai), Hong Kong, Taiwan(Taipei), Korea(Seoul), Singapore, Thailand(Bangkok), Indonesia(Jakarta), Malaysia(Kuala Lumpur), Philippines(Metro Manila), Vietnam(Ho Chi Minh City), India(Delhi, Mumbai), and Russia(Moscow).

Source： *Attention of the world's emerging markets / Research on images toward Japanese products at 14 cities* (15 Jan.2009)(Hakuhodo Co, Ltd.)

Furthermore, it is important to make use of Japan's high technology/know how, and promote business development including integration of the system, instead of selling separately, and operation and maintenance control. In emerging economies, including those in Asia, demand for infrastructure is expanding. Especially, environment related infrastructure is drawing an attention toward realization of low carbon society. Japan, which boasts its high technology in the environment sector is expected to grasp this business chance by supplying not only the technology on material and factors, but also total solution in which products and services were amalgamated, while meet the need of emerging economies.

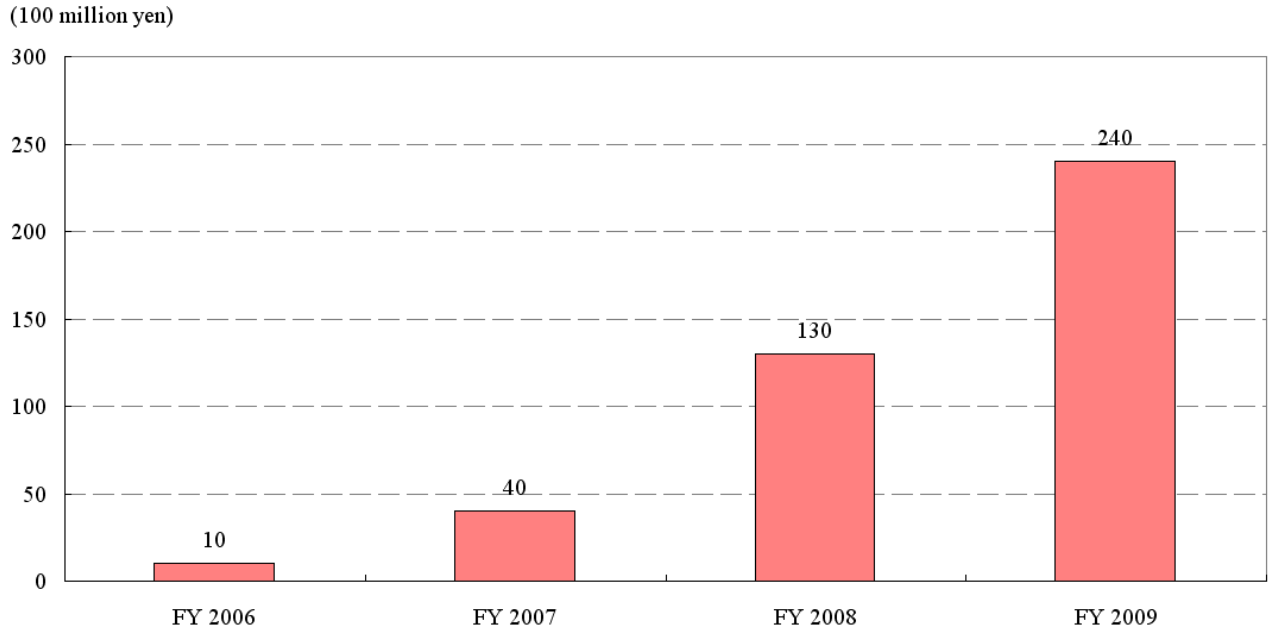
It is anticipated that companies from all over the world including European global companies, companies in emerging economies and local companies will stage a more intensified competition in emerging markets over the yield. Government of various countries including Korea has rendered positive supports aiming at helping companies explore emerging markets. On the Japan's part, our government is expected to work on in gathering and analyzing information on local market/customer groups by making use of Japan External Trade Organization, etc, enriching the Manufacture Fair that is taken place in overseas, dealing with global standardization strategically, and more. On top of that, Japanese government is expected to promote EPA, investment agreement, etc between emerging economies in positive manner, to maintain the investment environment and business environment in emerging markets. Working with the government toward exploration of emerging markets is highly expected now.

Column 29 Akihabara brings in Asia's consumers ~Commitment of Akihabara tourism promotion associate~

When you walk Akihabara electrics street, existence of foreigners stands out well. Inside an electrical shop, a shop staff serves customers in fluent English, Chinese and Korea. Even announcement is made in Japanese,

English, Chinese and Korean language. The number of foreign tourists who visit Japan annually is said to be 6.79million[48] (2009). Tourist from China takes up the majority of all the foreign tourists who visit Akihabara. Akihabara turned number 1 choice[49] for Chinese tourists to visit in 2009. Payment amount Chinese tourist spent in Japan using union pay card[50] amounted to 24billion yen in 2009, which is 24 times larger than that of when it was in 2006. It is a rapid expansion (Column Figure 29-1). Thus, it is hoped that Akihabara would bring in more high-income class and middle-income class in the future.

Colum 29-1 Trends in the Value of CUP Cards Used in Japan



Note: Closing date of fiscal year is March.
Source: Sumitomo Mitsui Card Co., Ltd.

According to a major electrical shop in Akihabara, item which is popular among Chinese tourists, is Japan made high quality electrical goods. They especially prefer Made in Japan items. However, now that many makers have transferred their manufacturing hub to overseas, it is difficult to keep up with the expectation of such tourists. As a result, they potentially lose an easy game in the competition before the overseas' big demand. Hence, it is required for retailers to act for the needs of such tourists by working with the makers.

Meanwhile, Asia's high-income class is much interested in Japan's life style. Especially, they show strong interest in Japanese food. In recent years, IH rice cooker sells very well. According to a major duty free shop in Akihabara, they sell average of 70 units of IH rice cooker a day. Also, there is a case where it sells very well and they run out of stock. Now it is expected to develop business taking advantage of Asia's "longing sentiment" toward Japan's life style.

Under such a circumstance, NPO Akihabara tourism promotion association was established in 2007 in order to enhance Akihabara's vitality and brand power. They aim at offering the best hospitality to visitors from inside and outside of the country. Various events are organized just around the Chinese holiday seasons such as Anniversary of founding (of PRC) or Chinese new year in conjunction with "Visit Japan Year" which is

[48] Of the total foreign visitors, 20% visited Akihabara (Exist polls by the Japan National Tourist Organization (JNTO)).
[49] 42% of the Chinese visitors visited at Akihabara (Exist polls by the Japan National Tourist Organization (JNTO)).
[50] This is a debit card issued by financial institutes affiliated with the China UnionPay. China UnionPay is a bank-payment network operator established mainly by The People's Bank of China. Each financial institution makes a payment through the UnionPay system.

organized by the tourism agency. Duty-free shop joint sales campaign or free walking tour for foreigners (Columns Figure 29-3), pop culture event, etc is taken place. Beside that, they designed Akihabara original character and produced Made-in-Japan souvenir goods with the design of the original character aiming for sales enhancement or activation of the town by way of attracting more visitors.

Now they are making an attempt in appealing Akihabara not merely as an electric town. What they are trying is to attract more foreign visitors by appealing Akihabara's different side of element, namely pop culture and Japanese culture

Column 29-2 Chinese Tourists Visiting Akihabara

Photo: Akihabara Tourism Promotion Association (ATPA) (NPO)

Colum 29-3 Free Walking Tours for Foreigners

Photo: Akihabara Tourism Promotion Association (ATPA) (NPO)

Column 30 Non-market strategy ~ In need of a reform to one's consciousness that Rule is not something one simply follows, rule is something that one makes ~

(1) New issue to be solved

It is now drawing an attention as a managerial issue as to how a globalize company deals with a rule making.

Colum 30-1 Examples of where Extra Support is Required

- ○ New products and services that do not match with existing regulation and authorization systems and require new regulations that are suitable for those (Ex: Music download to iPod, Google Street View)
- ○ Cases that regulations of certain country automatically become a global standard as typically demonstrated with items such as environmental regulations for product (Ex: RoHS Directive of EU)
- ○ Items that corresponding costs increase partially due to more complicated and longer supply chains (Ex: Management covering raw material level for genetically modified organism)

In recent years, obstacles associated with trading/investment a company will face in overseas countries are getting diversified. There are increasing cases where domestic policy of a foreign government such as an environmental regulation or product standard related issue, beside traditional water edge issues including tariff issue, can give a big impact as to whether a company gains or loses profit. In addition to it, importance of global standard is growing, as well. A domestic standard that was initially introduced within a country, but propagated to other countries, and then lastly it was globalized. This situation accelerates the diversification of obstacles. Furthermore, as represented by environmental regulation toward electric/electronic products in EU, regulations in each country is getting specialized and detailed at an accelerated rate. There are increasing number of cases where one is able to understand the implications of regulation only after involving in the decision making process of the regulation actively. For example, the method of compliance of a regulation is left to the discretion of a company, how far the discretion is acceptable, or when a regulation was introduced, the compliance with which is not easy technically, how strict the authority is going to enforce, etc. Unless you participated in the decision making process, you won't be able to obtain information. On top of that, when you created new service or product, or exploring market, you may face an old regulation in overseas, in which an existence of such business or product was not assumed at the time of the preparation of the regulation. Such a regulation will become an obstacle. Or, one will have to take an unnecessary risk because there is no proper regulation (Column Figure 30-1).

It looks as though traditional Japanese companies have taken in policies or measures such as regulations as a given constraint, and established the basic policy that they make efforts on technical development or cost reduction within the scope of the constraint, and challenged global competitions. With regard to trade issues, which involve foreign government measures, some showed passive attitude that it should be the government role to involve in the negotiation, companies should not involve positively.

Of course, for traditional problem such as tariff or anti-damping, a government level bilateral negotiation or establishment of international rule such as WTO was found effective. However, with regard to domestic measures of foreign countries, there are increasing cases where our government is not able to solve the problem by itself, even though it could affect negatively to trade investment. Taking a domestic regulation for example, it doesn't seem discriminating inside and outside, but it becomes disadvantage for a specific company. It is no denying that such problem is a violation of the international rule. Therefore, if majority of people are dealing with a rule making passively, when the rule was established, you will find the rule make your company difficult to demonstrate our technology, and you will have no choice but to accept the disadvantage in competition.

In this regard, various foreign companies are inputting manpower and fund into such a rule making process positively, and dealing with it systematically and in long term. In such a situation, if Japanese companies continued their traditional management style in which they have a limited field of view only within market competition, the risk would heighten that you have to be forced to accept a regulation in which foreign companies' intent is strongly reflected.

(2) Necessity of new remedy "Non Market strategy"

With regard to trade issue such as above with regard to domestic policies and measures, it is sometimes found effective to involve in the policy decision-making process in positive manners. Opinion of a Japanese company, which invested in a foreign country and employs local staff, shall be heard by the local country as its own country's industry. Suggestion on policies and measures backed by our high technology could give impact to the judgment of person in charge of policies and measures.

As more a company gets globalized, and higher the technology one possesses, one shall not limit one's view with market competition such as technology development, cost down, new product development or pricing strategy. With regard to non-market factor (environment other than market, such as policies and measures),

one should not take a regulation as constraint, one has to work for influencing people to revise the regulation which became an obstacle for the company's business development, or even stage a positive campaign aiming to establish new regulation so as to turn non-market environment to ones advantage. One is required to position the non-market strategy[51] as a legitimate and indispensable company strategy.

In emerging economies, it is highly likely that environmental regulations of developed countries will be referred, and imitated. When Japanese companies intent to explore market in emerging economies, it is necessary that they shall clearly position the non-market strategy as one of their legitimate management strategy.

Column 31 Exploration of emerging markets by a hidden global company

Nakashima Propeller Co., Ltd, which manufactures propellers for ships in Okayama prefecture, was founded as a casting supplier, but when they started producing propellers for steam and sailboats making use of the casting technology, they got in the first shipbuilding boom in 1960s. Then, they switched to manufacturing big sized propellers. They went through the time of shipbuilding recession in the late 70s. In the meantime, their major competitors withdrew from the business, then the company made a big stride to the top in the business.

To create propulsion of a ship, even a big ship requires 1/100mm accuracy. They introduced CAD and CAM faster than any competitors in the business. They amalgamated high technology and skilled craftsmanship. They won the award in the category of Prime minister award in the first Manufacturing award in August 2005 for their technology.

At present, the company produces mainly propellers for big ship, the diameter of which is as big as 10m at the biggest, also those for boat race, diameter of which is approximately 18cm. Propellers for ship is designed for each ship and manufactured upon receiving an order. There is no point of copying the product. With regard to their design know-how, it requires considerable experience. That's the reason why they won't let companies of emerging economies to copy their technology. Furthermore, their cutting-edge facility has been developed by working with Japanese machine tool makers or machine makers, which is an advantage. As a result, their market share for propeller for ship was accounted for 80% in Japan, and 25% in Overseas market respectively.

In order to cope with the surging demand of transportation equipment for the Chinese market, they built a factory for small sized propellers at Nomura industrial park in the city of Hai Phong in the north of Vietnam in February 2007, which is the first overseas manufacturing hub. Followed by the second factory in April 2009 at Dinpu District in the same city. It has already started operation aiming to establish the manufacturing structure for low pricing propellers for emerging markets.

It is anticipated that Chinese ship builders expand the ship market share. This company has limited their target only on major shipyards in China, and have business with them. However, they are going to expand their sales to middle sized shipyards, which is increasing. In order to do so, they installed a business office, where they gather information or expand their sales. It is anticipated that needs of shipbuilding expand in South East region. Hence, they are going to expand their sales mainly in Singapore.

Their business was diversified after they launched manufacturing of artificial joint with the application of processing technology for propeller for ship. In November 2008, they split up the company and were born as

[51] Non-Market Strategy: Professor David Baron, a professor of political economy, especially on non-market strategy in Graduate School of Business at Stanford University states as follows: (Provisional Translation) Business environment has two factors, market and non-market, which correlate each other. Non-market environment determines rules of market competition through government policies or expectation of people. Companies compete in market environment, so do they in non-market environment, either. However, non-market competition is more complicated, as it involves not only companies of competitors, but also activists, parties of interest, public and the government.

Nakashima Medical Co., Ltd. when Nakashima group turned to a holding company. They have started exporting artificial joints to Hong Kong, as Japan's Pharmaceutical Affairs regulatory approval is valid in Hong Kong. They are now applying for the approval of artificial joint with the Chinese authority at the moment. Upon approval was obtained, they are planning to enter into Chinese mainland, with Hong Kong as a business office. They think that expectation toward the quality of Japanese product is high in Asia, and even for the medical equipment sector entering to the market is highly likely. Hence, they have an urge to enter into the market quickly.

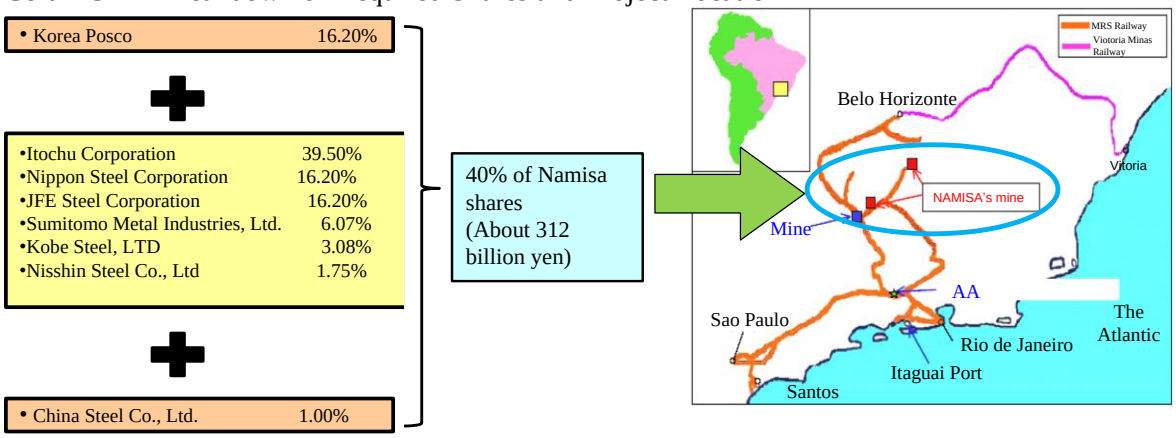
Column 32 Collaboration of Japan and Korea at the third country's market (Brazil)

In October 2008, 5 major steel companies in Japan, Itouchu corporation[52] and POSCO, a major steel company in Korea announced that they are going to jointly acquire 40% of Namiza's share (CSN's recourses subsidiary) from a Brazil's major steel company CSN for 3billion dollars (312billion yen). After that, in December 2009, Chinese steel (Taiwan) acquired approximately 0.5% of interest which was owned by Sumitomo metal industry and Itouchu corporation (Column Figure 32-1)

With regard to steel's world share, 3 companies, namely BHP Billion, Rio Tinto(Australia and UK), Vale(Brazil) accounted for 70 to 80%, which suggest that oligopoly is on the rise. On top of it, Chinese mass consumption of resources pushes the international price of material higher. The steel's material price as in 2010 turned out nearly twice as large, as a result of a negotiation with Japan and overseas' major resource companies. Due to such a circumstance, price review is taken place every three years instead of ever one year as it was done before.

Japan's steel business have fallen behind compare to overseas companies including Arcelor Mittal (India), due to the reason that Japanese companies own their own mines to ensure a stable procurement of raw material. So does Korea. Now that the oligopoly progresses and the price of resources are unstable, it is more important for both Japan and Korea to work together.

Colum 32-1 Breakdown of Acquired Shares and Project Location



Sources: Various released information

(B) Providing with "Attractiveness/safety/security" by Japan

[52] Namiza Co., Ltd. is an iron ore production and sales company located in Minas Gerais state, which is wholly owned by Brazil's iron and steel major CSN.

Income growth in emerging economies including those in Asia has brought about improvement of living standard of consumers in such regions. Also it has brought about the growth of new demand for goods/service that make their life more rich and attractive. Taking advantage of this situation, Japan gets more opportunity for procuring overseas markets mainly in emerging markets. Not only manufacturing sectors such as transportation machineries, electric machineries and general machineries, etc. but also other industries that used to be deemed as domestic-oriented industry can get a business chance.

Japan is the first developed country in Asia, which has responded to the consumers' needs, who aims for the realization of more affluent life, and supplied various goods/services. Goods/service that Japanese companies have provided are now highly regarded in various countries including emerging economies, as cool, good taste, having particular personality, reliable, good quality, etc.

Such high evaluation and high image is exactly an added value itself, which shall be placed importance by Japanese companies in the future, in addition to the function of goods and service when China and Korea are edging over. It is required to design and supply "things (koto in Japanese)" that satisfy needs of people or society such as richness in mind or improvement of quality of life.

(a) Globalization of the medical industry

(i) Growing demand for the medical industries in emerging economies, which is expected to grow along with the economic growth.

As shown in Chapter 2, section 5, Asia's emerging economies continue to grow rapidly, but at the same time, aging society will accelerate Asia-wide (Figure 3-2-1-39). Japan, which faced the aging issue first of any other countries, is expected to establish a model to solve the social problem and achieve the growth, and share it with the rest of the countries.

Of late, the market of medical goods and medical equipment in the world including emerging economies has been growing without stopping. In many emerging economies, the market growth rate for medical goods shows 2 digits figure (3-2-1-40). Export of medical equipment from Japan also shows upward trend, in concert with global market growth (Figure 3-2-1-41). Japan's medical sector that possesses a high degree of technology has got a golden opportunity for them to absorb such demand in positive manner.

The medical and its related business have a total ripple effect/employment inducement effect (Figure 3-2-1-42 and Figure 3-2-1-43). Such an industry is very promising as not only short-term employment but also as a Japan's growth industry.

Figure 3-2-1-39 Asian nations aging ratio (Changes in and outlook of population of senior citizens of 65 years old and above in the total population)

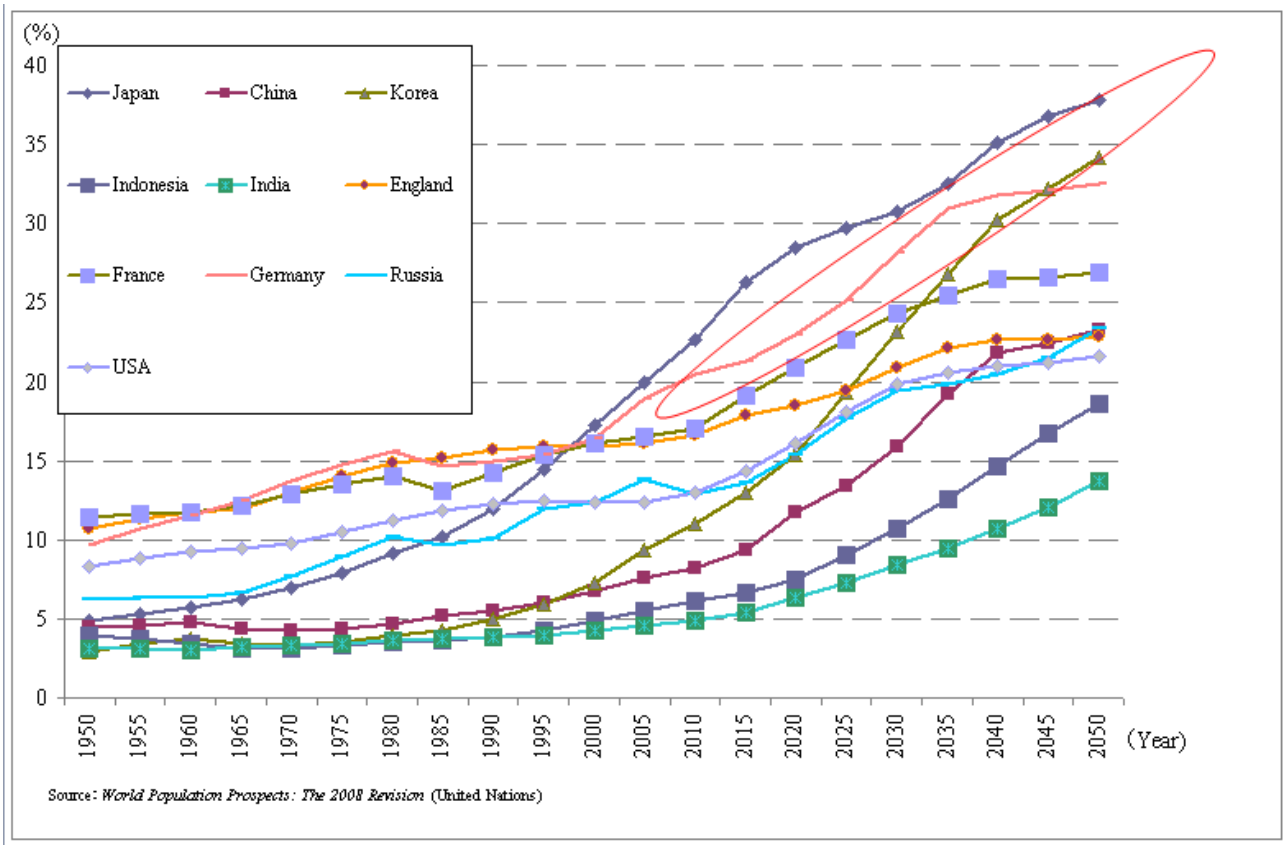


Figure 3-2-1-40 Pharmaceutical products - Market scale top 20 (2008)

Rank	Country	Sales(million dollars)	Growth ratio(%)
1	USA	290,980	1.1
2	Japan	77,041	2.6
3	France	42,200	2.2
4	Germany	41,291	4.9
5	Italy	26,644	4.0
6	China	24,543	**27.0**
7	England	22,323	3.2
8	Spain	20,966	7.8
9	Brazil	19,181	**12.0**
10	Canada	18,723	6.0
11	Mexico	11,031	1.8
12	Turkey	10,624	**11.1**
13	Korea	9,823	10.5
14	India	9,697	**11.2**
15	Australia	9,311	9.9
16	Poland	7,748	9.0
17	Greek	7,520	10.0
18	Belgium	6,353	6.5
19	Russia	6,247	**10.4**
20	Nederlands	5,917	-3.5

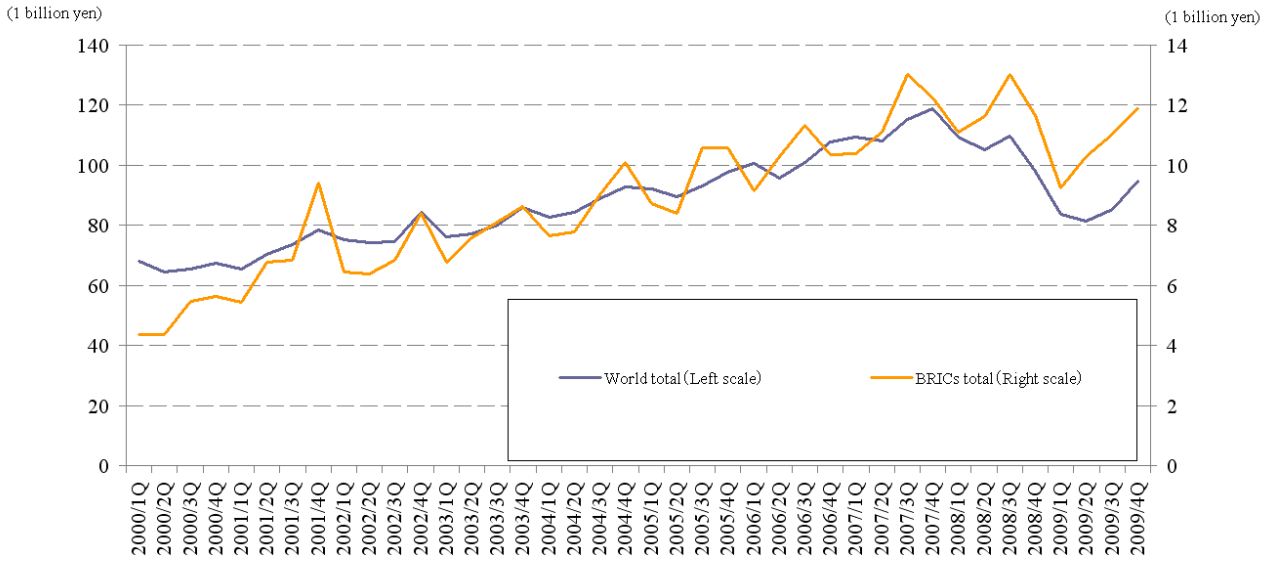
Source：*IMS World Review 2009*

Japan's medical care is highly regarded throughout the world in terms of both technology and facilities. Taking drugs of top ranking up to 100th in terms of sales value, for example, Japan is placed third place in term of number of items per origin country, which suggested that Japan has high ability in new drug development (Figure 3-2-1-44). Beside that, in the field of advance medical equipment, take equipment for heavy particle radiotherapy for example; there are 6 units of them in operation in the world. 3 of which is in operation in Japan. Many data on the cases of heavy particle radiotherapy[53] is build-up in Japan (Figure 3-2-1-45), which suggested that there are some sectors that Japan can lead the world greatly, also Japan has a potential power to play an active role globally.

With regard to a medical facility, take Japan's advance medical equipment such as MRI or CT for example, number of units owned per 1million people is reported to be 42.7Units, CT is 96.1Units, which is the world's best. As stated above, Japan's medical service is equipped with a high degree of technology and has a big potential in the global market.

Figure 3-2-1-41 Changes in export amount of Japan's medical equipments

[53] Heavy particle radiotherapy is a radiotherapy, which inflicts less damage to the normal cells around a cancer cell, and it is highly capable of destroying cancer cells, compare to the conventional radion therapy or radiation therapy.



Note: HS code 9108
Source: *World Trade Atlas*

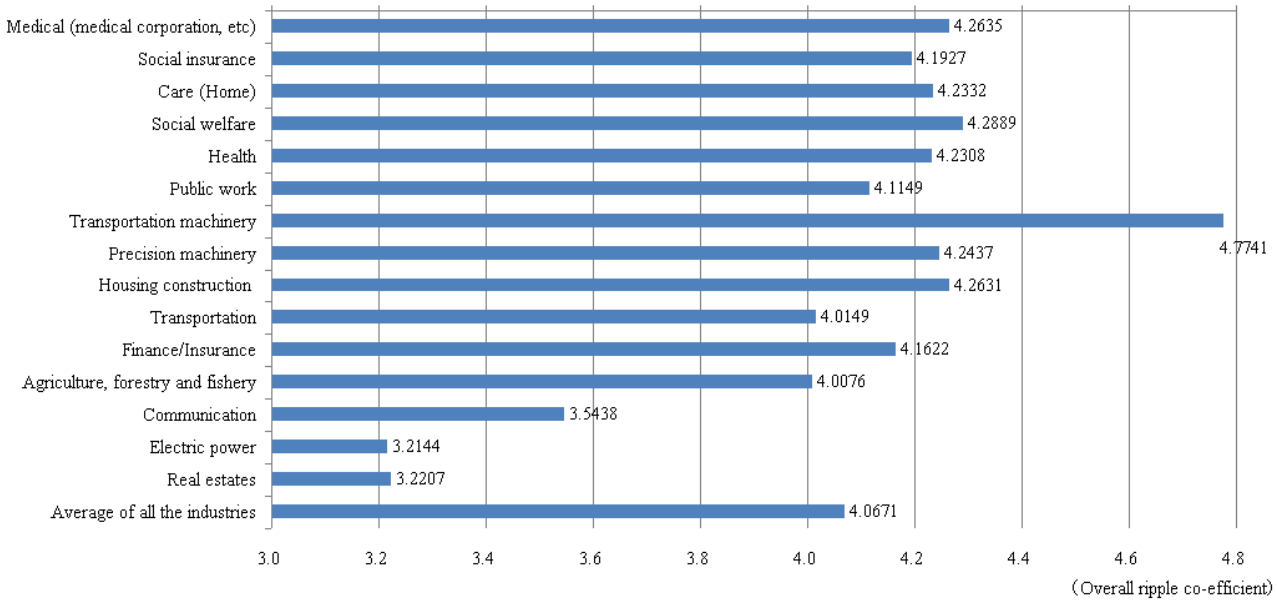
(ii) Toward globalization of medical service

As stated above, Japan's medical service including advanced medical service has a big potential that develops by itself by absorbing overseas vigorous demand. In short, absorbing such overseas demand can attribute to A) development of advanced medical after more example case was gathered. B) Re-investment to the domestic medical service including advanced medical care after medical organizations accumulated enough capital. C) reinforcement of global competitiveness involving medical equipment or drug related industry due to the expansion of domestic/overseas market, which shall be worked out by the entire Japan.

There is a move that people cross the border seeking medical service in a foreign country, which is now growing (Figure 3-2-1-46 and Figure 3-2-1-47). Only OECD countries itself, their import value was recorded 4.6billion dollars in 2007. It is approximately 47% increase[54] compare to that of in 2004. In Thailand and Singapore, which have been acting positively in accepting foreign patients, as many as 1.28million and 0.67million[55] (Researched by Department of Health of respective country) foreign patients[56] respectively visited the country for medical purposes. Of late, even Korea is working toward taking in foreign patients. They revised the medical law in May last year, then now drawing a framework for the promotion of medical institutions which wish to take in foreign patients, as well as establishing a medical visa scheme.

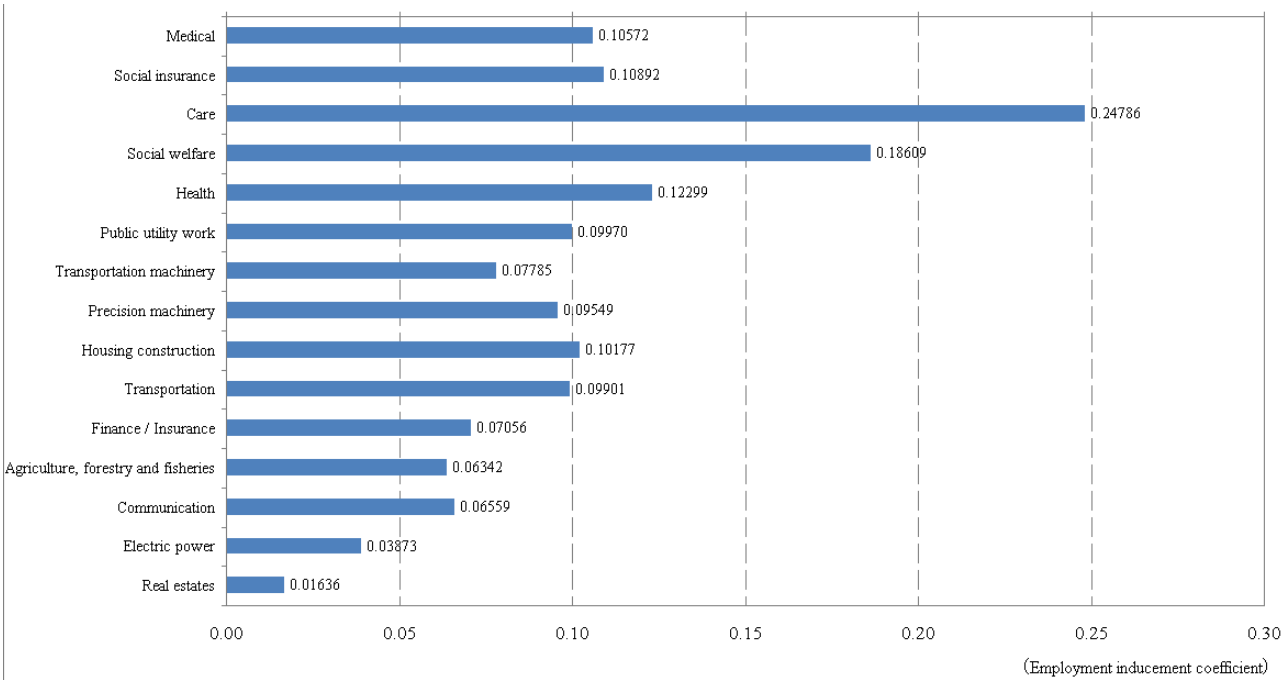
Figure 3-2-1-42 Comparison of overall ripple effect in each industry

[54] OECD "Health at a glance 2009"
[55] Sources: Survey by the Department of Health of Thailand and Singapore.
[56] Inclusive of those accompanied.



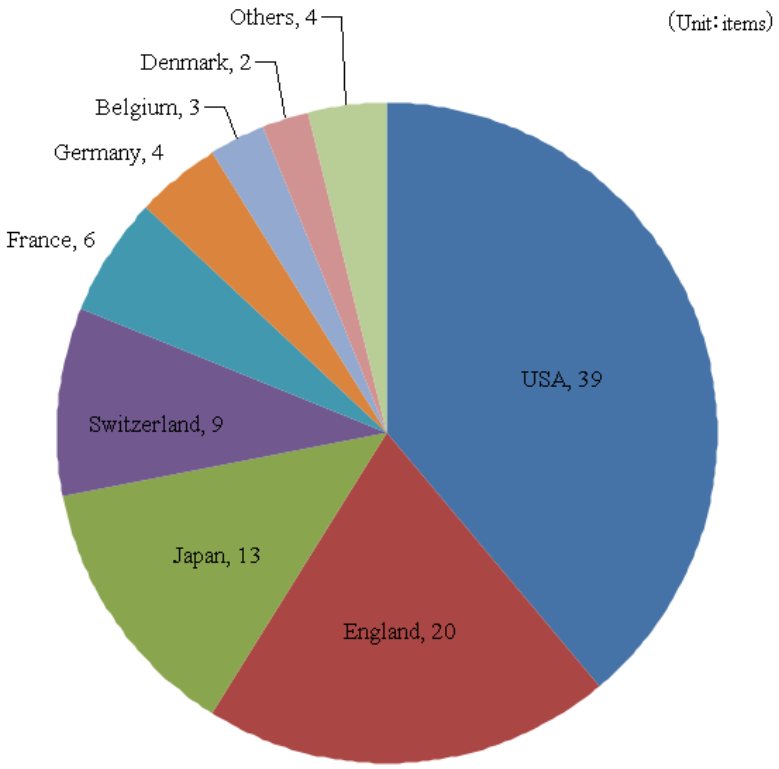
Note：Overall ripple effect was figured out after taking into consideration of "Ripple effect (Production inducement coefficient" which means purchases of raw material after production
input increased would attribute to an inducement of surrounding industries, and "Additional ripple effect (additional ripple effect co-efficient)" which means that an increment of income or
consumption of those working in the industries would attribute to further production input.
Source: White paper on Health and Labor 2008 (Ministry of Health, Labor and Welfare)

Figure 3-2-1-43 Comparison of employment inducement effect between industries



Note: Employment inducement is an indicator of increment of labor demand directly or indirectly when demand occurs one unit in an industry
Source: *Health and Labor while paper 2008* (Ministry of Health, Labor and Welfare)

Figure 3-2-1-44 Number of items categorized by origin country, of the top 100th pharmaceutical products in sales (2005)



Note: 100 commodities were used as subjects, without duplication of same components and excluding test drugs
Source: Japan Pharmaceutical Manufacturing Association (JPMA) Web site
(Original source: Created by the Pharmaceutical industry policy research center based *on I MS Lifecycle, Pharma Project*)

Figure 3-2-1-45 Facilities for heavy ion treatment worldwide (Currently in operation as in March 2010)

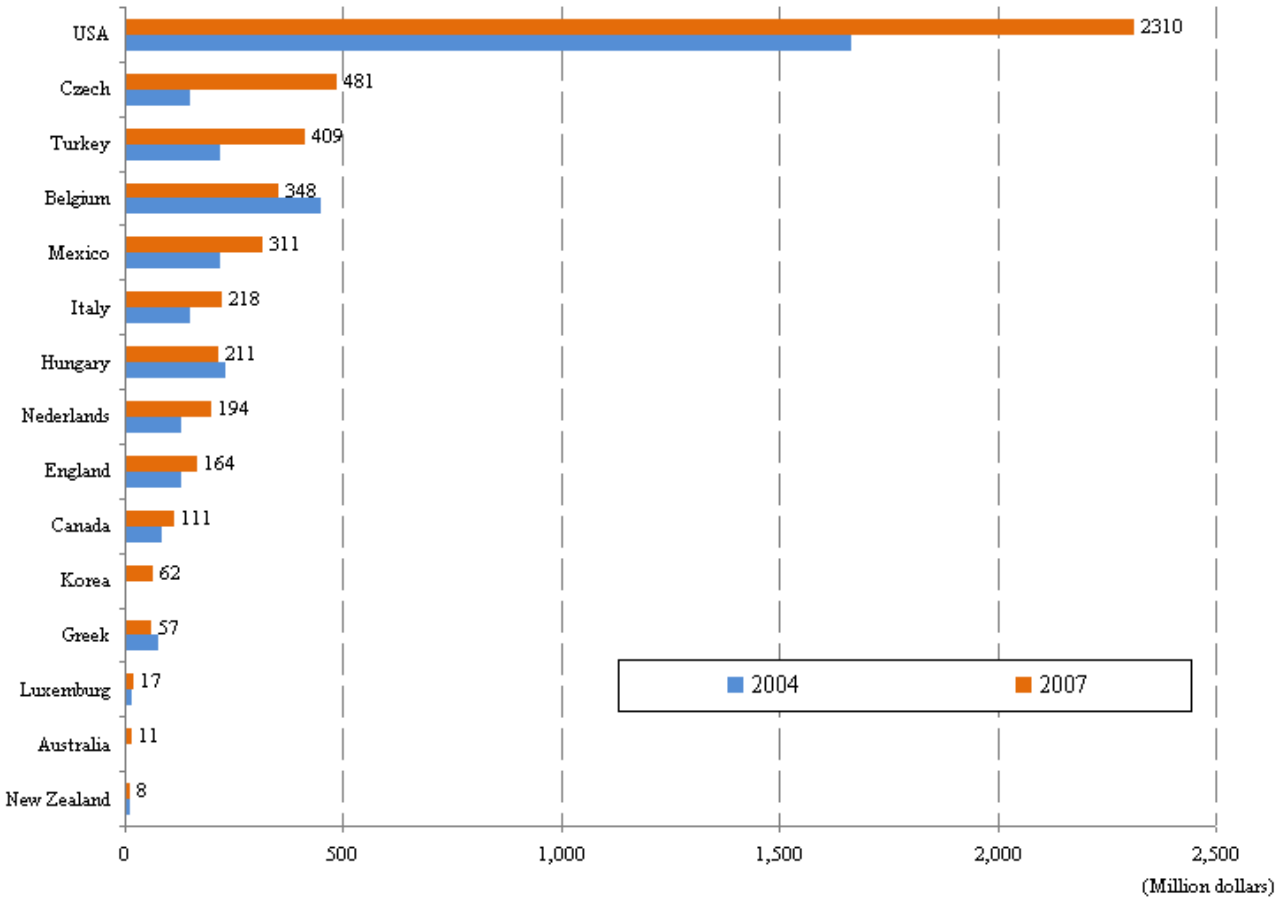
Facility	Country
NIRS Heavy Ion Medical Science Center	Japan
Hyogo Ion Beam Medical Center	Japan
Gunma University Heavy Ion Medical Research Center	Japan
Heavy Ion Research Institute (GSI)	Germany
Particle Therapy Facility, University of Heidelberg	Germany
Institute of Modern Physics	China

Source: National Institute of Radiological Sciences

(iii) Countermeasure

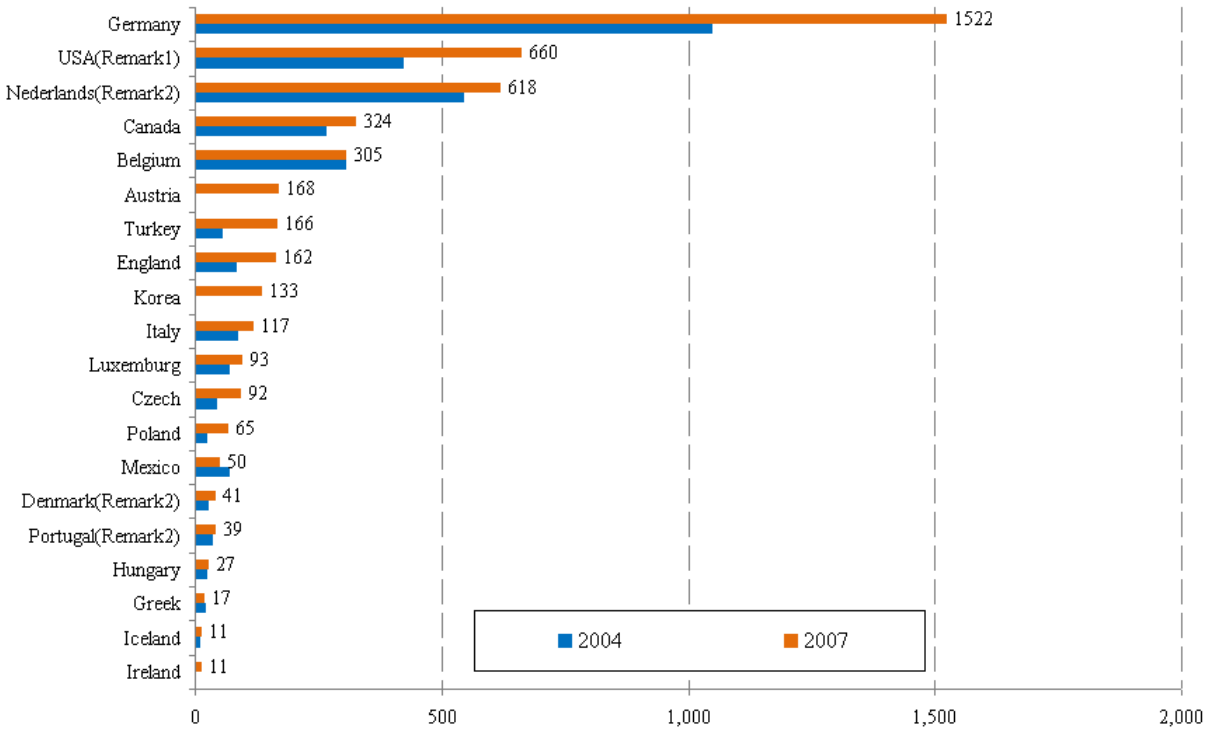
Meanwhile, the structure for taking in foreign patients hasn't fully developed in Japan. Hence, it becomes important to expand the network of medical institutions which show positive attitude toward an intake of foreign patients, at the same time, enrich supply system by visualizing what kind of medical service can be provided as well as its brand value. Beside that, it will become important to maintain the environment in order to support intakes of foreign patients. On top of that, it is indispensable to develop a reference function that works as a bridge between the demand and the supply, such as development of a function of reference of a domestic medical organization to a foreign patient, or foster a medical interpreter who serves as a liaison between foreign patients and medical organization.

Figure 3-2-1-46 Changes in medical tourism markets in OECD (Exports of medical service(intake))



Source: *Health at a glance 2009* (OECD)

Figure 3-2-1-47 Changes in medical tourism markets in OECD countries (Imports of medical service (travel))



Note: Remark 1.- Expenditure on medical treatments abroad, data provided by BEA
Remark 2.- Imports are based on the definition of the SHA
Source: *Health at a glance 2009* (OECD)

It is also important to expand market to which Japan's medical care can be supplied, by exporting (outbound) Japan's medical service to overseas, in parallel with an intake of foreign patients to the domestic medical institutions (inbound). So far overseas development on mainly medical equipment has been taken place by making use of ODA (Official development assistance) in the country. However, it is important to have a viewpoint that Japan should export Japan's medical service itself after having the following factors linked organically: medical equipment, medial institutions or doctors, which shoulder medial service industry, and drug. In specific, establishing an overseas hub where it provide Japanese medical service through tie-up with an overseas medical institution, establishment of Japanese based medical institutions or medical check-up institutions aiming at the expansion of medial territory outside Japan (Figure 3-2-1-48).

As addressed thus far, such commitments to globalize medical service enables Japan to expand national fund of Japan which has poor resources, with medical service as a core, but also relationship in terms of dependency is deepened between the both countries through exporting Japan's medical service to overseas. Hence, it is expected to work on toward overseas development by all over Japan.

(C) Toward the Nations of cultural industry ~ Overseas development of the cultural industry and synergy of the culture and industry~

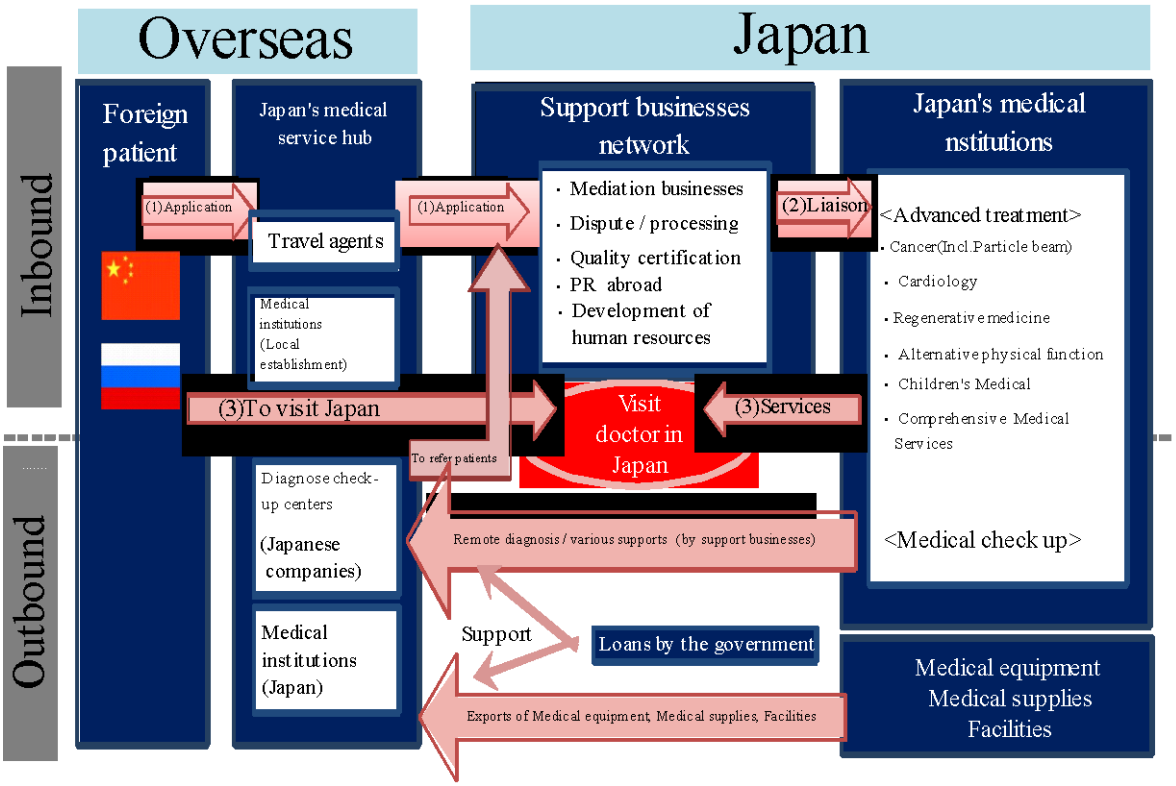
(a) Japan's cultural industry that is expected as a leading industry

Japan's cultural industry[57] occupies approximately 7% of the total sales value of the entire companies in Japan, and approximately 5% in terms of number of employees (Figure 3-2-1-49). Japan's cultural industry

[57] The data in this report with regard to the culture industry includes 18 business sectors in total, namely manufacturing sectors (furniture, fiber / apparel, leather products, tableware, toys, jewelry, crafts and stationery) and service sectors (computer/software services, advertisement, printing, architectural design, television/radio, music/video, movies, performing arts, design and art).

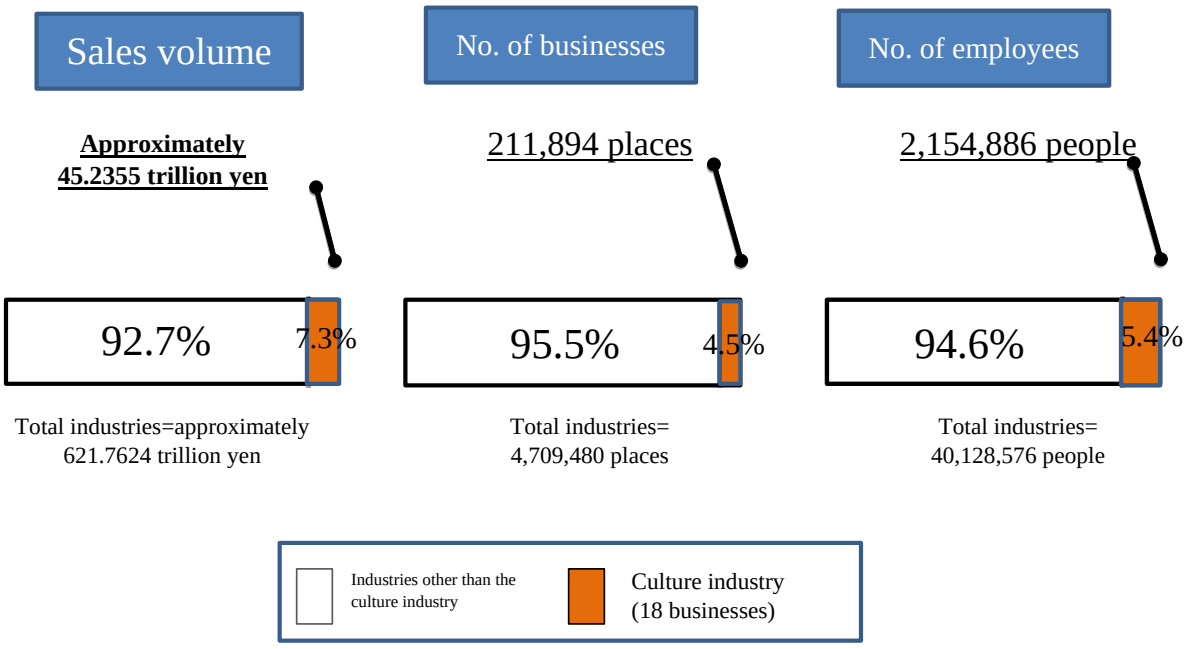
is highly popular in overseas. A movie “Okuribito” (Youjiro Takida as director) won Academy award for foreign movie section in March 2009, also Japan Pop culture event “Japan Expo”, which is held in Paris every year, and had its 10th event last year, had more than 160,000 visitors in 2009, which is more than 50 times larger than that of its 1st event. Backed by such a high credit, growth in global development of Japan’s cultural industry is expected.

Figure 3-2-1-48 Challenges aiming at the globalization of Japan's medical services



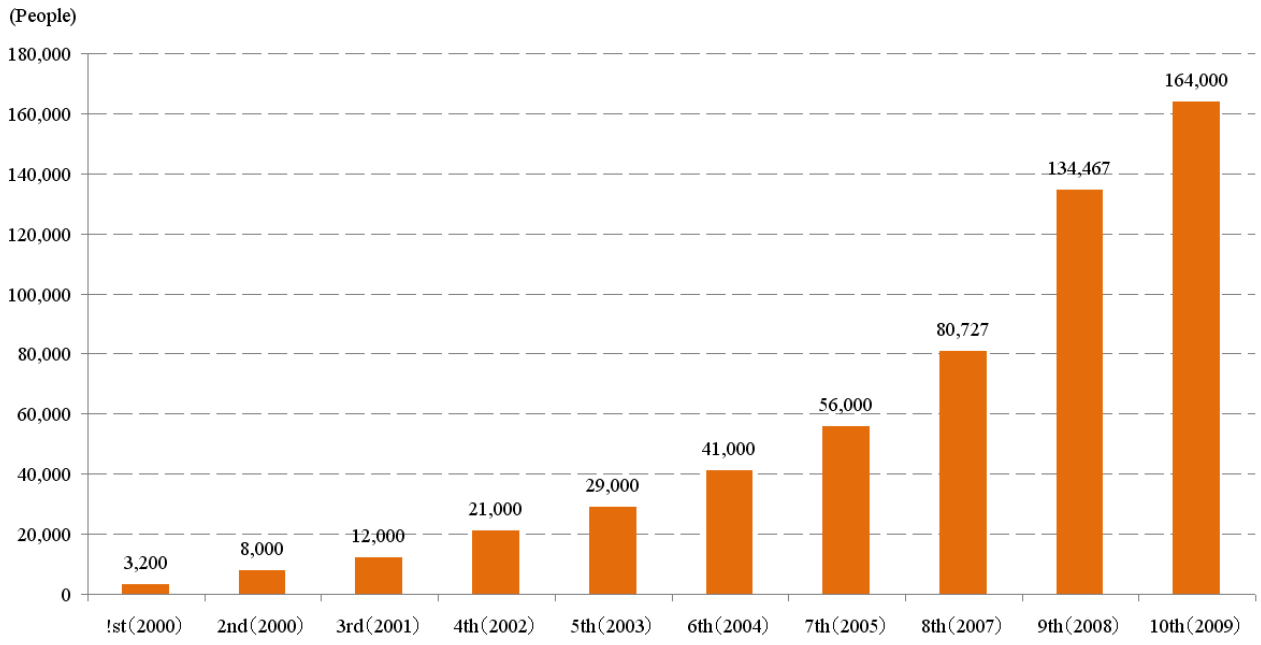
Source:The Ministry of Industry, Trade and Economy

Figure 3-2-1-49 Scale of Japan's culture industry



Source: Created by the Ministry of Industry, Trade and Economy based on the following material:
Business activity basic survey (The Ministry of Industry, Trade and Economy),
Business/Company statistics research (Ministry of Internal Affairs and Communications)
Industry statistics survey(The Ministry of Industry, Trade and Economy), *Service business basic survey* (Ministry of Internal Affairs and Communications)
Specific service industry actual state survey(The Ministry of Industry, Trade and Economy) (2004)

Figure 3-2-1-50 Changes in the number of visitors to the Japan Expo



Source : Degital content whitepaper 2009 (Digital content association)

(b) Synergy with other products and expectation as soft power

In the cultural industry, content of information or brand image itself, which is incidental to the goods or services, have a great-added value. When a consumer purchases goods or service related to the culture industry, he/she would find value not only in its function, but also in intangible objects such as its design, brand or image. Goods and services that Japan's companies provide are highly credited among consumers in emerging economies which include Asia economic zone, as high quality, cool/good taste, having particular personality/characteristic, etc (Figure 3-2-1-31). Such high credit and high image mean exactly added value with the goods and services. Japanese companies shall place importance on such added value, as price competition intense, in addition to the functional value of goods and services.

Thereby, combination of content of information or brand image that are existed in the goods or service related to the culture industry, with various goods or service, makes it possible of multilateral development that meets the customers' needs. For example, there is a marketing method called product placement, which connects content directly with the company's product marketing. This enables to capture the product-appeal-effect extensively and in long term by exposing the product in a film. Thus, a high economic ripple effect and a synergy are expected in the culture industry with the combination of other goods or services in other industries, such as the manufacturing or tourism industry (Figure 3-2-1-52)

Figure 3-2-1-51 Comprehensive evaluation on images toward each country's products replied by consumers of 14 emerging economies and regions, mainly Asia (Re-cited)

	Japanese products	European products	American products	Korean Products	Chinese products
Average of the 6 items below	**1) 43.0**	**2) 34.3**	**3) 33.4**	**30.4**	**21.2**
• High quality	1) 70.0	2) 46.9	3) 41.7	26.7	17.9
• Cool/good taste	1) 43.6	3) 39.6	2) 41.3	35.3	17.5
• Clear distinctive personality	1) 39.7	2) 35.3	3) 33.6	23.5	16.3
• Fun	1) 35.0	2) 27.4	3) 26.6	25.8	17.9
• Feel the momentum and vigor	2) 35.5	31.4	3) 31.6	1) 41.5	3) 31.6
• There is value for money	1) 34.1	25.4	25.3	2) 29.3	3) 26.0

Note: 1. 1), 2), 3) stand for ranking. 2. Average value of the 14 countries and regions for each item. 3. The 14 countries include China (Beijing, Shanghai), Hong Kong, Taiwan(Taipei), Korea(Seoul), Singapore, Thailand(Bangkok), Indonesia(Jakarta), Malaysia(Kuala Lumpur), Philippines(Metro Manila), Vietnam(Ho Chi Minh City), India(Delhi, Mumbai), and Russia(Moscow).

Source: *Attention of the world's emerging markets / Research on images toward Japanese products at 14 cities* (15 Jan.2009)(Hakuhodo Co, Ltd.)

Such synergy effect can be further enhanced by fostering "longing sentiment" toward Japan's entire life style, not only toward individual product. It is expected to maintain or emphasize brand power on Japan's goods and services that is deprived from "Made in/by Japan", and foster the brand image that creates "Longing sentiment" in consumers in emerging economies including Asia's economic zone.

"Trade Follows the Films" which is the title of an article written in the 1920s by a famous columnist in U.S. named Frank Crane. It was about American movies being such a competent salesman[58] of U.S products. It was like as if the life style of the U.S. was exported to the rest of the world by means of U.S. movies.

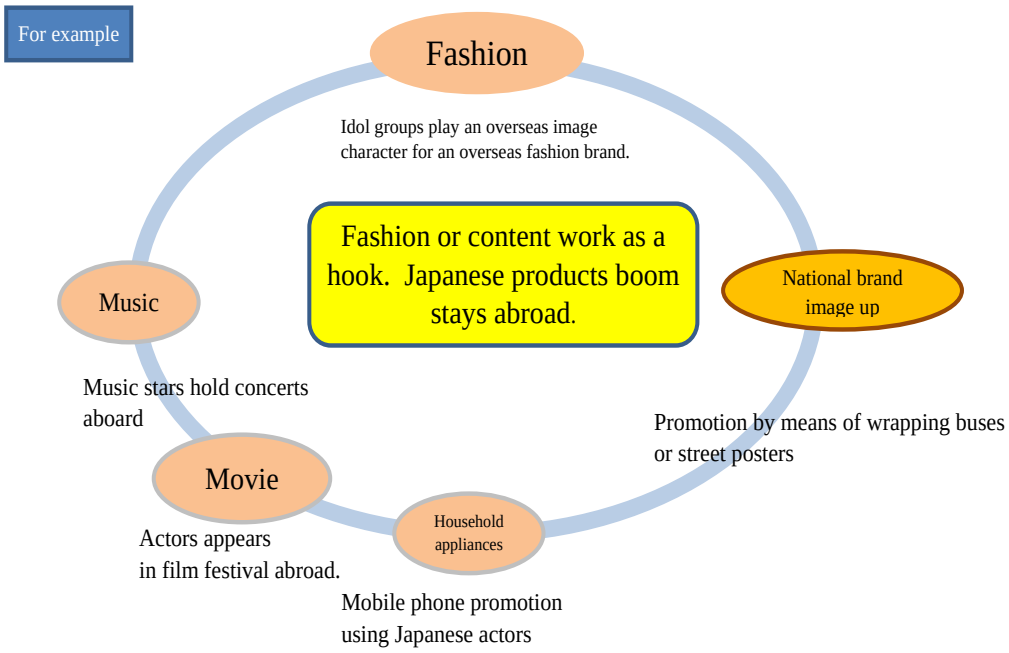
<<Case: Anime project and Toyama tourism>>

There is a project in an attempt to bring in the viewers to the actual place by having a tourism spot or local specialty product shown in an anime film. Toyama television broadcasting Co., Ltd. and Fun works, which engages in animation, movie projects and filmmaking, have jointly produce animation. Toyama's tourism spots and specially products are introduced in an anime film, and appeal Toyama's charm to the viewers in

[58] It was published on 10 September 1926 by McClure Newspaper Syndicate.

and out of the country, which is led by PA works Co., Ltd., which is an anime filmmaking company of Nanto-city in Toyama prefecture and The BERICH in Uozu city.

Figure 3-2-1-52 Soft power that gives out ripple effect on many industries



Source: The Minister of Industry, Trade and Economy

In this project, Tateyama mountains and Kurobe alpine route, which are the main feature of Toyama tourism, as well as the mystery sea Toyama-bay, firefly squid in Numerigawa, Gokazann of gasshou-tsukuri that was designated as a world heritage were introduced in the combination of anime style and live photo, which was engaged by Toyama television, and transmit it on air. This is broadcasted to not only Toyama region, but also entire China. It covers 600million audiences (Beijing, Shanghai, Tianjin, Chongqing, 20 provincial capitals, and 4 special towns including Dalian, Tsuingtao via China's satellite channel, which tied-up with Toyama television broadcasting Co., Ltd, as well as CATV. Of these Chinese cities, there are direct flights between Toyama and Dalian. Thereby, it is expected to bring in more tourists owing to the easy access[59].

In addition, their film was transmitted via video-sharing sites such as You Tube or anime video sites such as crunch roll. They target the high-income group or the middle-income group in Asia, including China in an attempt to bring in many tourists.

In the cases of other countries, their government is promoting global development of the culture industry strategically.

Figure 3-2-1-53 Foreign TV dramas which were permitted to be imported to China, categorized by country

[59] Sources: Material prepared by the Ministry of Economy, Trade and Industry, and each websites of Toyama Broadcasting Co., Ltd., and Fan works Co., Ltd., etc.

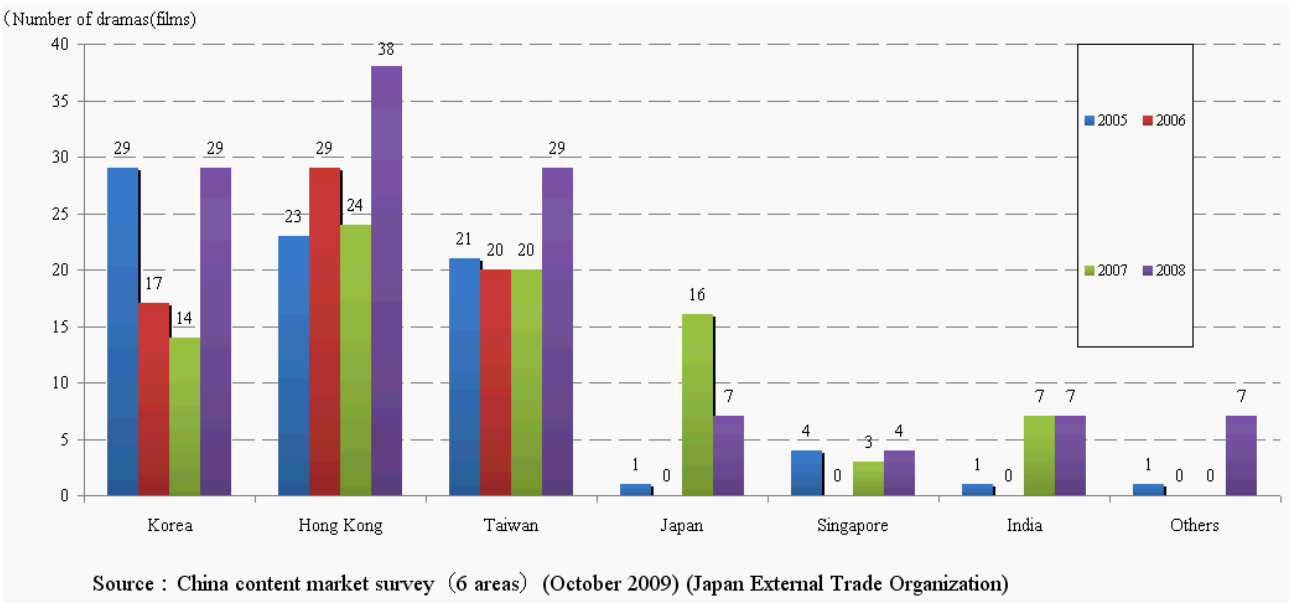


Figure 3-2-1-54 TV dramas categorized by country of produce broadcasted in Singapore, Thailand and Vietnam (Overseas produce)

Singapore		Thailand		Vietnam	
TV dramas top 10 country of produce 2008		Number of TV dramas broadcasted, categorized by country of produce 2007		TV dramas top 10 country of produce 2008	
Hong Kong	6 films	Thailand	199 films	Vietnam	7 films
Korea	3 films	China including Hong Kong	42 films	China	2 films
Singapore	1 film	Korea	24 films	Korea	1 film
		Europe	8 films		
		Japan	7 films		

Note: Street survey(Number of respondents 625)

Source: *Digital content whitepaper 2009* (Digital content association)

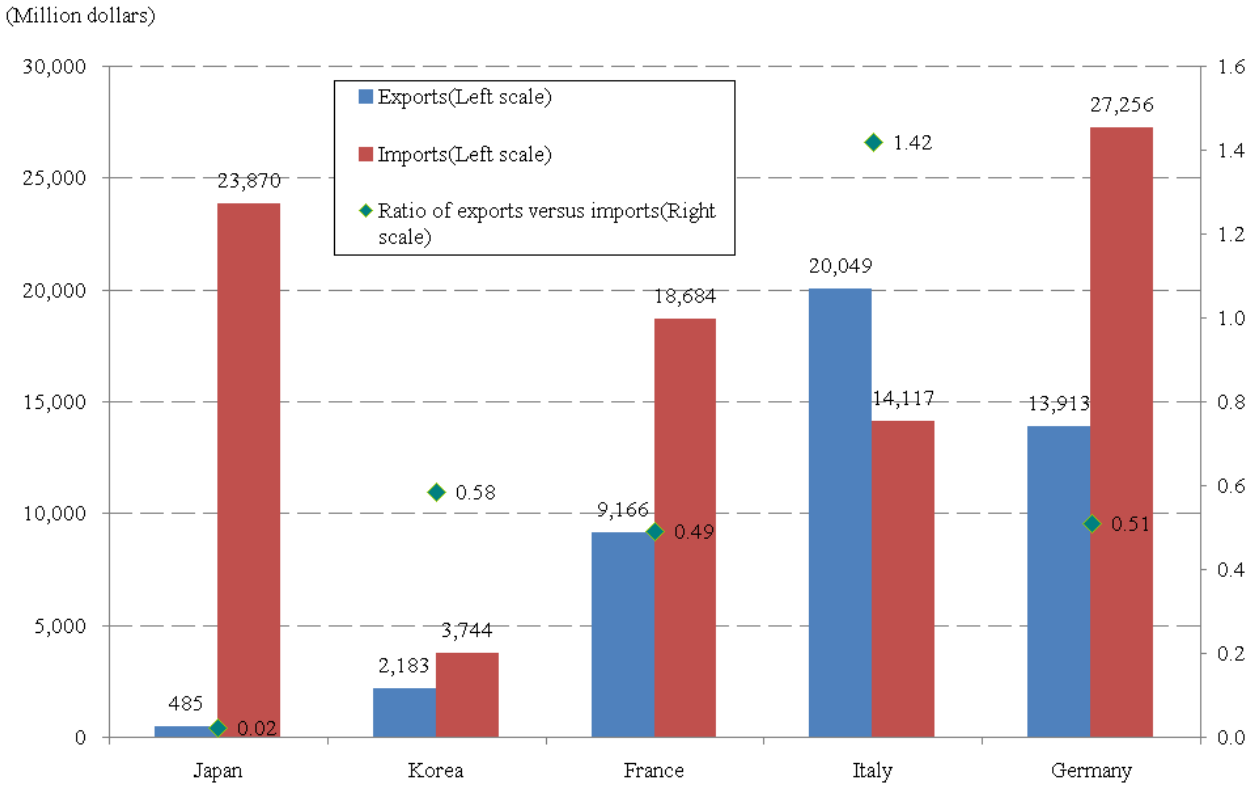
With the launch of "Cool Britannica" campaign, which chanted the national image strategy, initiated by Tony Blair, then prime minister, England has developed the creative industry promotion system. With awareness[60] that the creative industry is an industry with latent growth that can attributes to the export growth, "Design council" was installed aiming to enhance creativeness in the entire industry[61]. On top of it, embassies of England, Trade and Investment department for the U.K. are rendering support in overseas markets exploration. Meanwhile, in Korea, then president, Kim Dae-jung declared "Culture President" and established Culture industry promotion basic law (1999). Taking the opportunity of the moves, Korea worked out the Cool Korea strategy with the co-operation with the government. Culture and Content progression Agency and Design agency have been established ever since. Also Korea Trade-Investment Promotion Agency (KOTRA) has provided positive support for overseas development. Especially Korea's strategic campaign in emerging markets with the co-operation of the government has brought about Korean-

[60] "Creative Industries Export Promotion Advisory Group" which was formed by government and public organizations released a report titled "Export: Our Hidden Potential" in November 1999, in which support to England's creative industry for its overseas development was studied.

[61] The design council was installed in 1971. It provides free business consultation service and advises a company on what innovation is possible for the company through the use of design.

boom in fashion, content and consumer goods combined into one. Taking a look at the number of overseas television drama films broadcasted in Asia, Korean drama is thriving outstandingly (Figure 3-2-1-53, and Figure 3-2-1-54)

Figure 3-2-1-55 Textile industry Exports and Imports ratio



Source:Textile handbook 2009 (Japan chemical textile association)

(c) Culture industry nation

Japan's culture industries have a big potential, however, the export ratio is extremely low compare with that of other countries. Therefore, it doesn't generate much profit owing to the failure to capture the overseas needs. For example, export ratio with regard to the content industries, US marked 17.8%, while Japan marked 1.9%, which is low[62]. In addition, as for the Japan's textile industries, the import value is prominently low compare to its export value (Figure 3-2-1-55).

In order not to let go of business opportunity of developing Japan's attractive culture industries in overseas markets, as stated above, it is important that public and private sector work together in a strategic manner toward procurement of global market. In addition to overseas development of the culture industry itself, a strategic measure using Japan's charm as a source of competitiveness shall be sought, for example, a promotion of Japan's life style as a whole aiming for maximize synergy of culture and other industry.

Column 33 Japan brands General exhibition event - Organizing "Feel Japan Style in India".

The 1st Japan brand general exhibition event was held as a demonstration project of "Asia consumer trend

[62] Material prepared by the Ministry of Economy, Trade and Industry based on the World Bank homepage, "White paper on Digital content 2006" by the Digital Content Association of Japan, and the survey data compiled by the Digital Content Association.

study group" organized by the ministry of Economy, Trade and Industry, for 4 days from 12th March 2010 in India, where the medium income group is anticipated to grow in the future. This event was a joint work by public and private sector, with the theme "Get to know Japanese brands, Feel Japan's lifestyle",

The exhibition event was held in a shopping mall in Mumbai, where trend-conscious consumers gather. Companies that represent Japan brands participated in it. About total of 100 of Japan's products and services were exhibited. (Visitor: about 5000 people). At the venue, Japanese lifestyle at large was introduced, for example, a fashion show by using Indian models clad in Tokyo fashion. Thereby, consumer potential with Japan product and Japan brand in India was studied (Column 33-1 and Column 33-2).

Column 33-1 Participants receiving Explanations of kitchens (dining), and cell phone content delivery services (right)

Column 33-2 Japan Fashion Show (2 left) and product tours for the press (right)

At the same time, a survey was conducted. Subjects were divided into 3 groups, namely, general consumer (higher than the middle class based on the household income), student and buyer. In the indoor venue, Japanese products were exhibited in a modeled house that imitated the floor plan of a typical Indian house. In outdoor, exhibition booths were installed for Japanese cars, where features of the cars, nominal price, etc were explained in a tour style, and hearing was conducted using a questionnaire form.

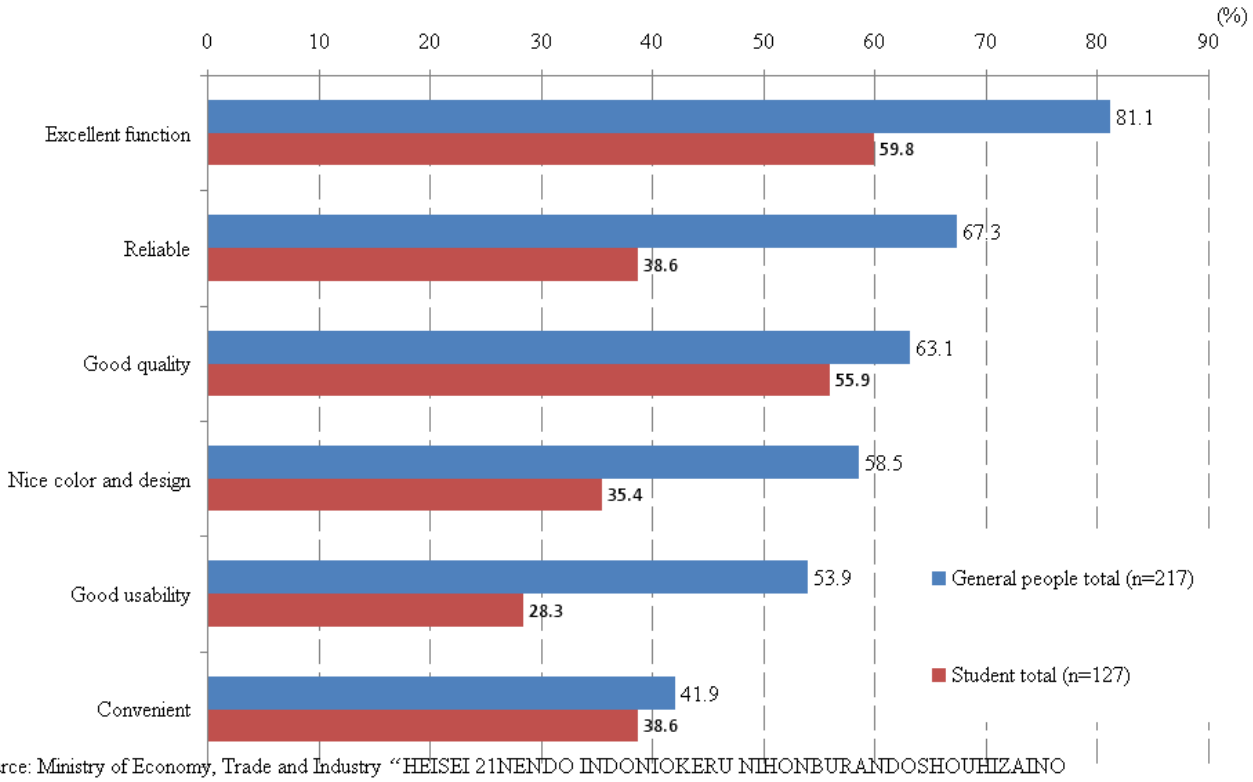
(Result of the major survey)

This survey at the exhibition showed that 91% of the general visitor group and 80% of the student group answered that they grew more interested in Japan products. 89% of the general visitor group and 70% of the student group answered that they grew willing to buy. Which explained that it was an effective presentation for Indian consumers who are not familiar with Japan products.

In addition, taking a look at the figure with regard to function/quality of Japan's products (Column Figure 33-3), as high as 81% of the general visitor group answered that Japan's products are of excellent function, followed by the answer that Japan's product is reliable, the quality looks good, both of which marked 60% mark. Furthermore, this survey showed that before the subjects come to the exhibition, they had an image toward Japan products such as high price, high technique/high quality, not easy to use, etc. but after viewing the exhibition, their image turned differently that Japanese products are generally high, but some are found reasonable in price, stylish (not only in terms of goods), modern, pretty easy to use, comfortable/convenient, etc.

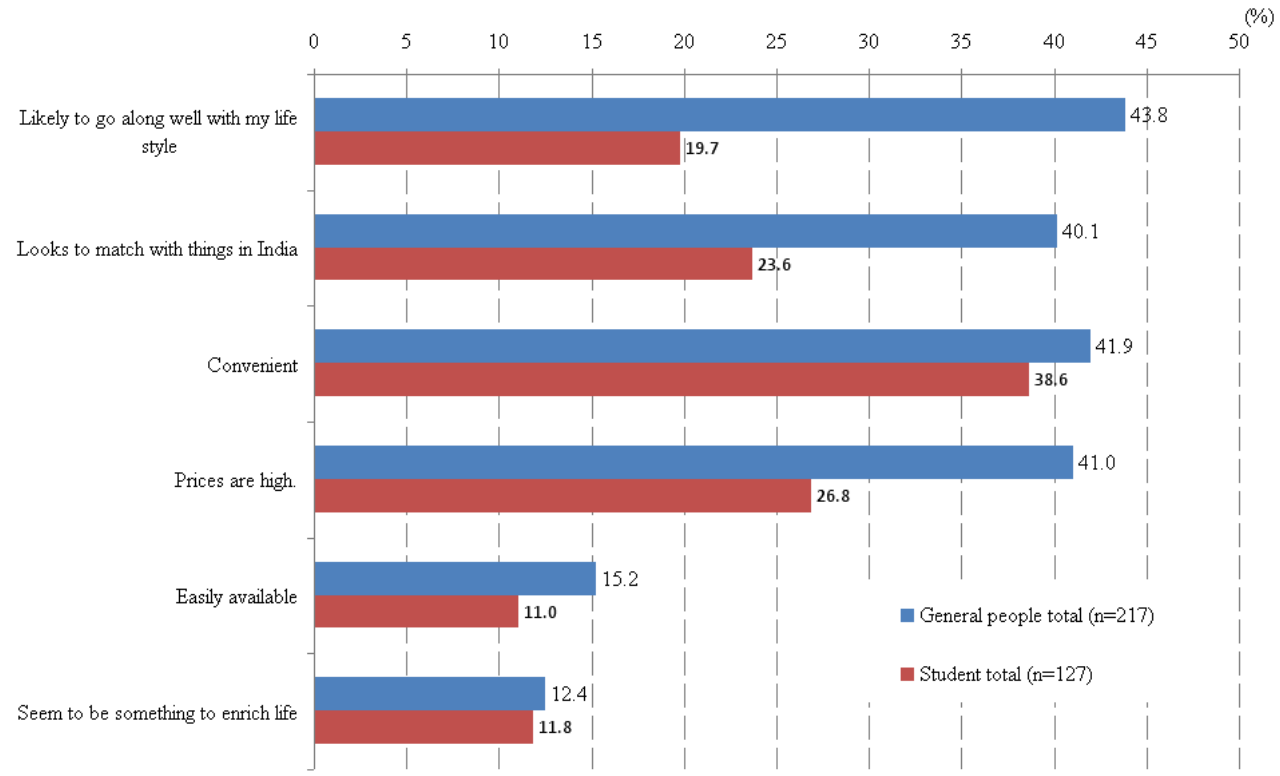
On the other hand, taking a look at the figure with regard to adoptability to Indian life (Column Figure 33-4), both the general visitor group and the student group answered it may suit to my life style and it may suit to India, the answer of which ranked among the top. However, the score doesn't exceed 40% figure, which is lower than the evaluation with regard to the evaluation/quality and image. On the contrary, many people answered that the price is high. Less people answered that the price is reasonable, and Japan products will enrich life. Thereby, on top of the pricing issue, selecting a function of the products that meets the Indian market is a theme to be worked out.

Column 33-3 Japanese Products (Function/Quality)



Source: Ministry of Economy, Trade and Industry "HEISEI 21NENDO INDONIOKERU NIHONBURANDOSHOUHIZAINO FUKYUUNIKANSURU CHOUSAHOUKOKUSHO (Survey on the popularization of Japanese brand consumer products in India)"

Column 33-4 "Conformity to Indian Lifestyles" of Japanese Products



Source: Ministry of Economy, Trade and Industry "HEISEI 21NENDO INDONIOKERU NIHONBURANDOSHOUHIZAINO FUKYUUNIKANSURU CHOUSAHOUKOKUSHO (Survey on the popularization of Japanese brand consumer products in India)"

Column 34 Commitment to make the costume play culture, that spreads to the world, into a business

Masquerade is an act existed from the ancient time all over the world. It originated from various occasions such as religious ceremony or Europe's imperial life. And today, masquerade originated from Japan's pop culture is infiltrating in the world.

The so-called "Cospure (short form of Costume play)" disguised as a character in a comic or anime has spread in Japan before 1980s. However, following an advancement of comic and anime to the world in 1990s, fan of Cospure emerged.

One of the turning points, which made Cospure known to the world, was, "The World Cospure Summit (WCS)" which started in 2003 hosed by TV Aichi. It started in three countries in the first place. However, Cospure became an official event in Aichi-Expo in 2005, then more and more countries made a move for a participation in Cospure events. At present, it has grown to the world biggest Cospure event with the participation of 15 countries (Country of participation: Germany, Denmark, Spain, Finland, France, Italy, China, Korea, Singapore, Thailand, Australia, America, Mexico, Brazil and Japan).

In the system, participant of WCS have to win the qualifying tournament, which is taken place in each country. Those won out in the qualifying tournament are qualified to enter in to the World Cospure Summit, which is the champion tournament, that is to be held in Japan (Nagoya) (Column 34-1). There is a unique aspect, which is an entire operation scheme. A nature of a parent body, which is to organize a qualifying tournament in a country, varied depends on the country. In some country, it is organized by NPO, while in some country, it is organized by a private company or government organization. One loves Cospure more than anything is not all that matters to be an organizer. Competency to make it an event and manage the event is required. Personality of organizers from 15 countries are all different, who are simply willing to

partake in the event after the news about the event spread in people's talk. But WCS committee that consists of the parent's body from the countries in the world is supporting the World Cospure Summit. This should be called a huge transnational circle.

A qualifying competition that is taken place in each country mobilizes a very large crowd. Japan Expo in France, China Joy in China, etc are regarded as prestigious. That explains how the World Cospure Summit is regarded by the funs, like reaching the summit. According to the performance in 2008, the combined number of visitors mobilized in the qualifying competitions and the champion competition was approximately over 400,000 people.

The World Cospure Summit, which was originated in Japan, was grown into a global scale thereby. An execution committee lead by Television Aichi was installed in 2009 in an attempt to make the world' Cospure event develop even further, which has been working on to make the event into business. Collaboration with "Japan content platform (JCP, Secretariat: Dentsuu social planning group) " which is engaged in the amalgamation of Japan culture dissemination in overseas markets and company marketing, is one of the attempts. JCP works with a movie company, television company, printing company, anime producer, recording company, etc, and promote various projects to support Japanese-based companies in terms of overseas marketing while making use of various kinds of entertainment contents.

One of the benefits of the collaboration with JCP is the value of the events that gets enriched. An organizer who operates the qualifying competition in each country has close relationship with a local media. Thereby, there is a movement to plan television program for Cospure event in those countries, too. In addition, enhancement of the collaboration is crucial in improving the value of WCS. It was determined that WCS China qualifying competition to be held in collaboration with Shanghai Expo for this year. WSC in other countries also intend on accelerating such a move.

JCP intent on using WCS as a company marketing test bed. JCP is planning to create a space in the venue of the qualifying competition so as to let people come into contact with Japan product for an experience. In addition, an event is planed where local specialty goods of each country are brought in together through a tie- up with highly popular products among the young such as drink/food, fashion, etc. This is an ideal opportunity for the countries where the product was already sold to improve awareness, while for those the product has not been sold, it is an ideal opportunity as well for test marketing.

Product development associated with WCS is also important business resources. There are many prominent figures in the world that advocate a Cosplayer or a Cospure of a charisma character. A project is ongoing where a WCS theme song is produced, have an overseas sing the song, and eventually extend the existing business to CD and distribution business. Last of all, this is a project that nothing but WCS can make possible, eyeing on WCS's estimated total number of mobilization of approximately 500,000 people. It is a development of travel products incorporated with an admission to WCS. It seems that the day when the concept of pop culture tourism become firmly established may not far away.

Expectation is rising for the World Cospure Summit to become business in the future.

Column 34-1 WCS Championship held in Nagoya

Photo: World Cosplay Summit Committee

(d) Commitment toward overseas development of the contents business

Contents have a power to generate rich yield such as a big economic effect or improvement of status of the country.

Contents enables to arose consumers' enthusiasm by itself, and generate a large profit. For example, the media industry and information communication equipment industry is unable to stand on its own without the contents industry. Furthermore, it projects and delivers the country's whole image. Its content can influence anything such as, trading, tourism, citizen interaction, foreign affairs, etc. For example, England's today's international status cannot be talked about without Beetles.

From such a point of view, contents is a king in respect of culture as well as economy, Each country is committed to enhancing the contents industry so as to create culture, economy, etc.

As Japan's part, it is important to enhance high creativeness and foster overseas business into a new pillar of income. To do so, promoting of overseas development of the contents industry is necessary and 3 viewpoints as below become important. 1. To actualize latent profit in overseas markets 2. To recover profit loses in overseas market 3. To support via a bilateral dialogue between the governments including that of Asia.

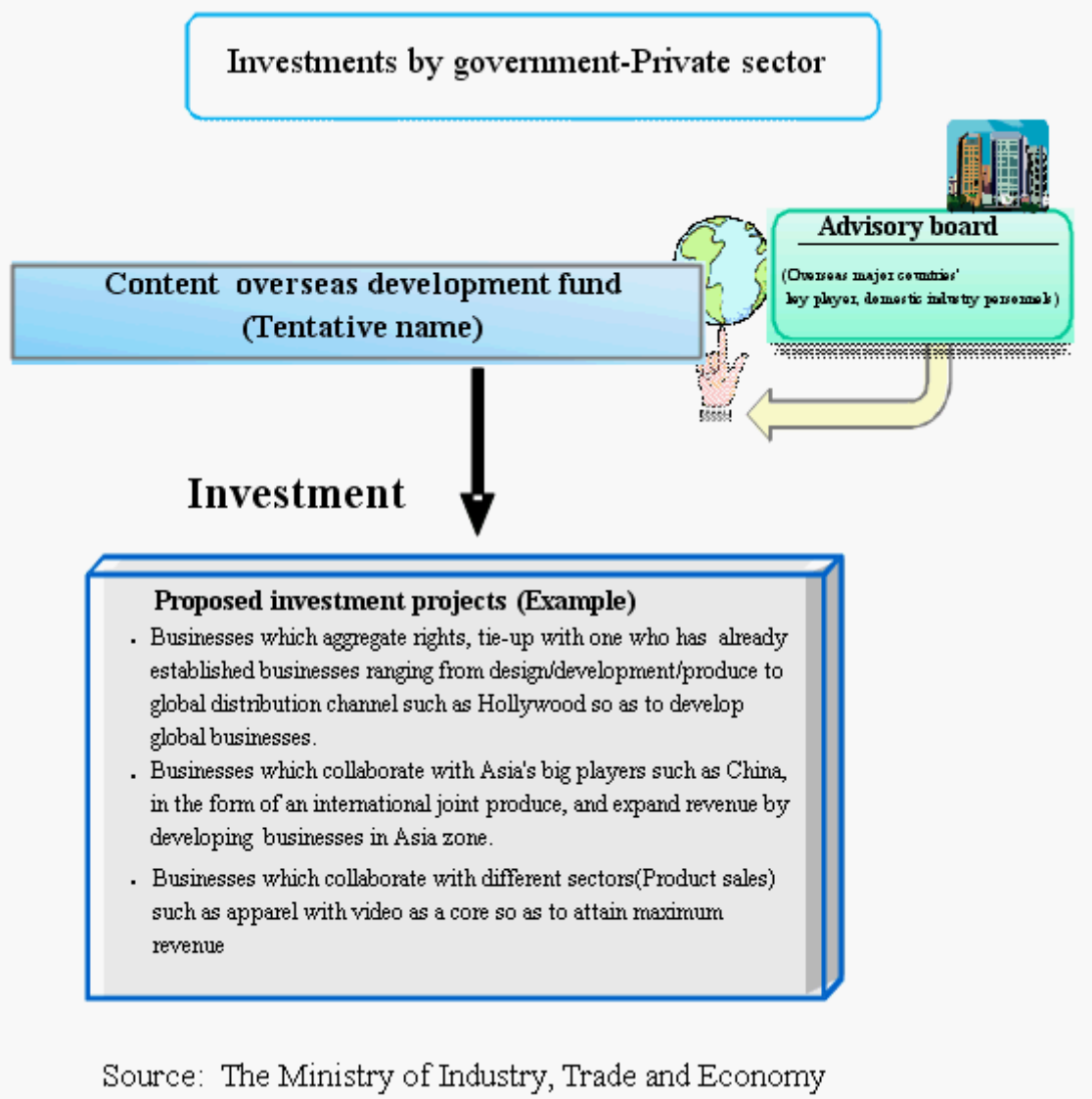
(i) Actualize latent profit in overseas markets

In an attempt to actualize latent profit in overseas market, take measures in each of steps of the value chain, namely financing, information gathering, production, transmission and distribution, and support overseas development.

Japan's contents are highly regarded, however hasn't reached a point where the latent value thereof is fully utilized and derived profit out of it. On the other hand, many other countries have a fund appropriated for the support of contents production already. As Japan's part, it urgently needs to establish a framework for providing support to those that wish to set on overseas development in positive manner. After public and private worked together, and know-how, manpower, etc are gathered from in and out of the contents business sector, "Contents overseas develop fund (provisional name)" is planned to be established to support companies in term of funding that wish to set on overseas development (Figure 3-2-1-56).

In respect of information gathering, it is important to maintain an overseas information gathering hub for information on market, government movement, business of emerging economies, including China, where companies find it difficult, especially those of meddle-small size, to access to information thereof. In addition, Japan government has to enhance maintenance of the system to promote/support domestic companies' commitment to overseas development, while working in collaboration with relevant organizations in and out of the country making use of a specialist who is well versed with contents industry of Japan and local country (including an advisory team such as a lawyer or accountant),

Figure 3-2-1-56 Outline of the Content Overseas Development Fund (Tentative name)



Source: The Ministry of Industry, Trade and Economy

In order to enhance overseas development of Japan's contents industry, it becomes necessary to globalize production activities themselves. Especially, as for live-action films, capturing Asia markets, which share the similarity with Japan in terms of culture, would be a mainstream in overseas development. Hence, it is necessary to establish the structure to create "Made in Asia", and set on producing an international collaboration product.

When working for enhancing overseas development of Japan's contents industry, it is also focused on releasing products to the world in positive manner. "Japan International contents fair[63] (Co festa) has attained a certain level of result for the past three years as a place to release Japan's contents, as stepping stone[64] for overseas development, a place to form network, which is exchanged transversally with the same business. In order to enhance its function as an international trade fair, it has to engage in 4 measures emphatically, such as holding the fair continuously, increment of number of overseas buyers by way of integration and centralization of events, promotion of overseas development of Co Festa, fostering a function as a hub in the world.

To deliver contents related products to consumers around the world, it is important to establish a global distribution channel. It is no doubt that every content related company in Hollywood has a global distribution channel. When a Japanese company wishes to develop business overseas, it has to establish new distribution channel in the overseas market from the beginning. Measure for securing a distribution channel is various depend on what sector the contents is in. Taking a live film, for example, the supply needs is considered high within Asia, which shares the similarity with Japan in terms of culture. However, in respect of anime/comic, it is considered effective to release them via Internet targeted at the whole world, based on the fact that there are anime/comic fans all over the world.

(ii) Recovery of profit loss in overseas markets

On the other hand, it seems Japan's contents industry produce profit loss in overseas market. Against such a situation, promotion of measures against pirates (measures against invasion on Internet) needs to be implemented.

With regard to law and regulation establishment, at present a negotiation is ongoing on the Anti-counterfeiting Trade Agreement (ACTA)[65], aiming to establish a regulation which is of high level associated with execution of the intellectual right, in collaboration with relevant personnel in and out of the country and relevant authorities. This negotiation is supposed to come to an agreement within this year.

With regard to an execution of the right through the Content Overseas Distribution Association (CODA), when a package is associated with an infliction of the right, CODA supports continuously in execution of trademark and copy right by making use of CJ mark. With regard to a video sharing sites in China, it is important to perform demonstration tests on the illegal contents elimination request.

(iii) Promotion of dialog between the government on Asian countries.

When providing support via a bilateral dialog between the governments, especially it is the case where content business is to be developed within Asia, there are so many problems that have to be worked out to the foreign government and companies, with private and public cooperation, such as overcoming barrier to enter the market of the counterparty country, gathering information on the market of the counterpart market, measure against pirates. Thereby, it is expected to establish a relationship with the counterpart country and companies, and work steadily to find a cue for a market entry by making use of more flexible framework strategically such as framework for public and private interaction, in addition to framework (negotiation tool) for bilateral negotiation, etc.

(e) Commitment toward enhancement of the fashion industry

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[63] It recorded as many as 1million visitors in 2009. The advertising effect was approximately more than 5billion yen.

[64] TIFFCOM is an international business market place, and was organized by the Ministry of Economy, Trade and Industry, UNIJAPAN and Japan movie promotion Co., Ltd. In 2009, as many as 2,871 cases of business negotiation were brought in at TIFFCOM, which was held at the venue of the Tokyo International movie festival.

[65] Publication of the draft of provisions of the Anti-counterfeiting and trade agreement (ACTA). http://www.meti.go.jp/press/20100422001/20100422001.html.

Fashion have been beloved by a wide range of generation regardless of old or young, or male or female, as a means of self-expression that are the closest to humans from long time ago. Even today, it is one of the major means of express lifestyle, which become one of the sources of Japan's soft power like games, animes or movies. Charm with Japan's fashion is deprived out of excellent sense of Japanese or craftsmanship. However, when fashion is regarded as an industry, it cannot be denied that there is some issues needs to solved such as ability of delivering information or international competitiveness.

So, the Ministry of Economic, Trade and Industry has been providing support to "Japan Fashion Week, JFW" in collaboration with Small and Medium Industry Development Organization Foundation or Japan External Trade Organization in order to appeal Japan fashion to the world effectively. JFW promoted collaboration of Japan's high value added fashion and high quality fiber material, at the same time, improved environment for information release from Tokyo to the world, and established Tokyo as a business hub. It was initiated at October 2005.

JGW was held 10 times so far. Collections of each brand, joint exhibitions or fashion events for general consumers (Figure 3-2-1-57) have been held.

Figure 3-2-1-57 JFW brand collection

The measures taken came out with a steady and increasing popularity and brand power in respect of an increment of visitors to the events from media around the world or diversification of the event. The Ministry of Economic, Trade and Industry would continue to support JFW so that JFW could grow to a hub for fashion and business.

Furthermore, in order to activate Japan's fibre/fashon industry, it is important to work on branding that put all together Japan fashion's charms, let it infiltrate in overseas market directly, and eventually, let it connect it with the business so as to secure overseas market, by making use of the momentum with Japan's soft power that are highly credited by the rest of the world,

There are many young people who are interested in Japan's life culture by way of Japan's fashion magazines as a source, in particular, around Asia. Soft power, which is mainly Japan's fashion, has a full potential to secure overseas markets.

Taking into consideration of thereof, the Ministry of Economy, Trade, and Industry (MITI) is working on a project called "Tokyo eye". In this project, MITI puts together Japan's hot fashion brands of today (not only

apparel brand, but also fashion brand that are close to the life and culture such as bags, shoes or accessories), then brands the commodities as a whole. After which MITI engages in promotion for market procurement or business matching

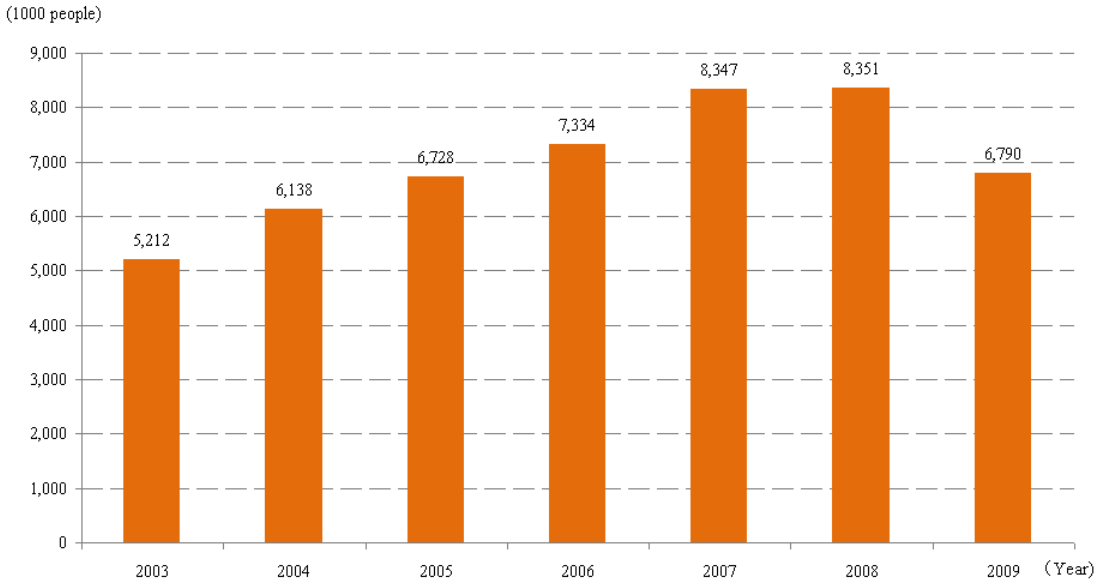
In specific, it implemented business matching and test marketing with overseas buyers in Shanghai and Paris, in collaboration of a local exhibition organization company and department stores or retailers, between November 2009 and March2010. MITI is aimed at overseas infiltration and market procurement of Japan's fashion.

(f) Commitment toward the tourism nation

(i) Commitment toward the tourism nation

Figure 3-2-1-58 Display of tokyo eye products at a department store in Shanghai

Figure 3-2-1-59 Changes in the number of foreign tourists visiting Japan



Source:The tourism agency Web site

The estimated number of foreigners visiting Japan for holiday shows an upward trend (Figure 3-2-1-59). Affected by the world economy crisis or strong yen appreciation, the figure dropped to 6,790,000 visitors (decreased by 19% compare to the previous year) in 2009, however, since the beginning of the year 2010, it has showed a upward trend, more than that of the same month last year, which suggests it has recovered. When taking a look at the tourist visiting Japan categorized by country, approximately 71% of them are from Asian countries (Figure 3-2-1-60).

The amount spent by the tourists visited Japan in 2008 amounts to 23.6trillion yen and the production-induced effects amounts to 51.4trillion yen, the added value induced effect[66] is 26.5trillion(5.3% of the nominal GDP), employment induced effect[67] was 4.3million persons (6.7% of the total workers)[68]. In the Tourism nation Promotion Basic Plan, Japan announced its plan[69] that it increases the number of foreign tourist to 10million by 2010 and also to increase the number of International conferences to be held by more than half by 2011. In addition, "New growth strategy (Basic policy) ~ Shining Japan~" which was approved by the Cabinet, shows that Japan targets to increase the number of foreign tourists visiting Japan to 25million in 2020 and targets 30million in the future.

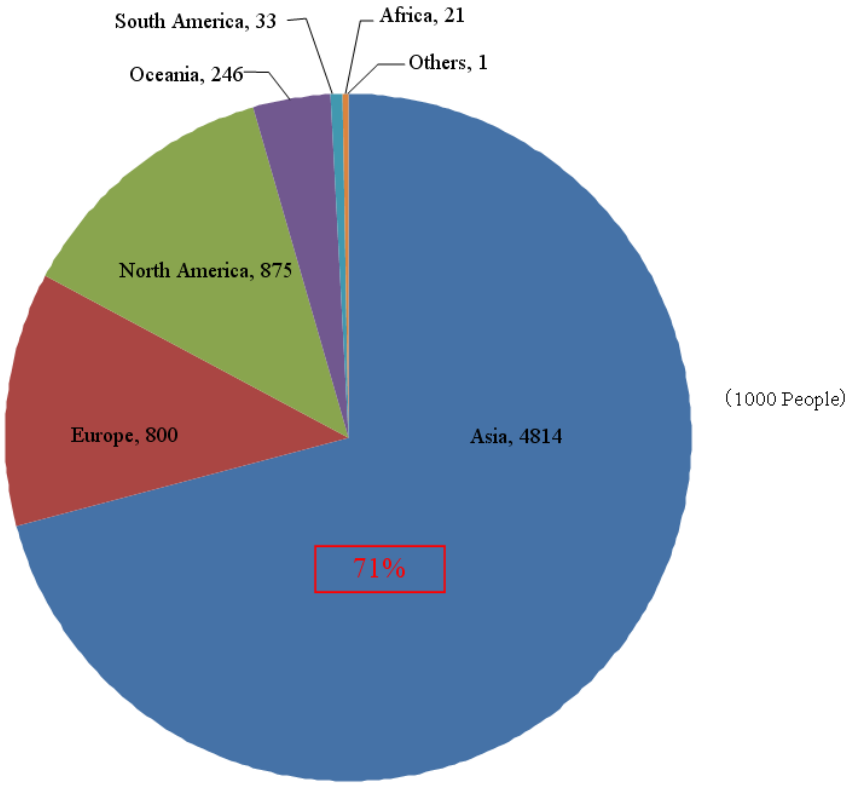
Figure 3-2-1-60 Proportion of foreign tourists visiting Japan categorized by country / region (2009)

[66] The added value induced effect means added value that was induced as the production value increases. It is calculated by subtracting the amount of intermediate input such as raw material from the production ripple effect.

[67] The employment induced effect is a figure to indicate the increment of labor demand directly and indirectly when consumer demand occurs by one unit in an industry.

[68] "Travel and tourism consumption movement survey" and "Economic effect of the travel and tourism industry survey and research 2008" by the Tourism Agency.

[69] It was decided by the cabinet on 29 June, 2007. In this basic plan, it also targets Japanese national traveling overseas: 20million by 2010, domestic travel consumption amount: 30trillion yen, and Japanese national domestic travel number of accommodation: 4 nights a year a person by 2010.



Source: The tourism agency Web site

In order to achieve the new target thereof, there is an issue as to how to lure tourists from Asian nations including China, which is achieving economic growth quickly. And it is necessary to enhance overseas promotion by carrying out a detailed analysis and evaluation on strategy of other government tourism bureaus.

Toward improving the standard of intake of foreign visitors, following factors becomes important, for example, easy acquisition of Japan tourist visa, shortening time of immigration process, enrichment of foreign language display at public transportation, enrichment of intake of foreign visitors in accommodation facilities.

Furthermore, there are some business area where Japan's works such as anime, comic, game, etc have gained many fans in many countries, which can be utilized for disseminating information so as to allure foreigners to Japan. A method to enhance synergistic effect is also effective such as promotion of trips to Japan in collaboration with PR in overseas, in an attempt to promote contents thereof or Japanese food, etc.

Column 35 Market which targets at the high-income group in overseas

It is said that there are more than 100,000 populations in the world's luxury travel market who spend more than 100million yen annually for trips for leisure.

Despite of such a trend, it was focused that business model tailored for overseas rich group is not rooted in Japan. And now, concierge companies are emerging which place importance on the inbound business targeting at overseas rich group. In this initiative, they are not taking overseas rich group as just a rich group of people, rather taking them as a group of individual who understand real value and pursue special experience and essence of things.

The Ministry of Economy, Trade and Industry established a committee, which consists of concierge

companies, contents holder and experts, and discovered a harmony of high quality contents, which are scattered everywhere in the country. In this initiative, a business matching with content holders, concierge companies and domestic travel agents was organized in Kyoto and Kanazawa. Furthermore, a business matching with concierge companies, domestic travel agents and buyers in and out of the country was organized as "JLTF (Japan luxury travel forum)[70]" in order to develop such contents to overseas, in collaboration with the travel agency.

For an example, Ishikawa prefecture has an abundant of regional resources which offer real Japanese experience, such as the castle town (jyouka-machi) Kanazawa where history and tradition of Kaga-hyakumanngoku still rooted in, traditional crafts such as Wajima lacquer-ware, Yutani-yaki (china), Ryoutei (restaurant) and Japanese style inn (ryokan) service. By making use of these resources, there is a move to supply order-made individual trips, which offer high quality hospitality and special experience. In correspond with such a move, concierge companies who take in overseas luxury group are offering services in response to every needs for authentic experience by customers such as an arrangement of accommodation in a high-class hotel/ryokan (Japanese style inn), special lecture by a traditional craftsman, private jet or helicopter service as a means of transportation, nou-play and flower viewing in a private garden.

In addition, in the same prefecture, local ryokan (Japanese style inns), ryoutei (restaurants) and concierge companies set up "The Real Japan Ishikawa Project Promotion Council[71]" in April, 2008 and held "Luxury life style International conference" with the aim to disseminate information on Ishikawa's rich tourism resources and understand the market movement of world's luxury market, by inviting an opinion leader who is an influential figure on the world's luxury market. In the first international meeting in 2009, the founder of Six senses resort was invited, who manages a resort hotel the customers of which belong to the luxury group. For the 2nd meeting in the following year, the founder of Ritz Carlton hotel and the world's famous France cuisine chef were invited as an opinion leader. In these meeting, information on Ishikawa's charm was disseminated to the world through the opinion leaders, and the organizers were able to understand the movement and needs of luxury group in order to explore future demands.

In the future, Japan's tourism sector and a sector which attracts customers shall act in positive manners in order to capture targeted customer with the integration of exploration of regional high quality contents and commitment to commercialization. Expectation toward the improvement of service standard and new development by taking in overseas luxury groups heightens.

(g) Commitment toward overseas development on agriculture and food

(i) Promotion of exports of agriculture and marine products and foods in integration of commercial/agriculture and industry.

It is anticipated that domestic demand for agriculture and marine products and food in Japan will decrease due to the decline of population owing to the low birthrate and longevity. Amid the trend, it is crucial to take measures to capture overseas demand for food.

Of late, Japanese food is prevailing in the world. Quality of Japan's agriculture and marine products and food is highly regarded in the world. In some countries, Japanese food is spreading as a luxury foodstuff. Opportunity of growth for Japan produced agriculture and marine products and food is widened. However,

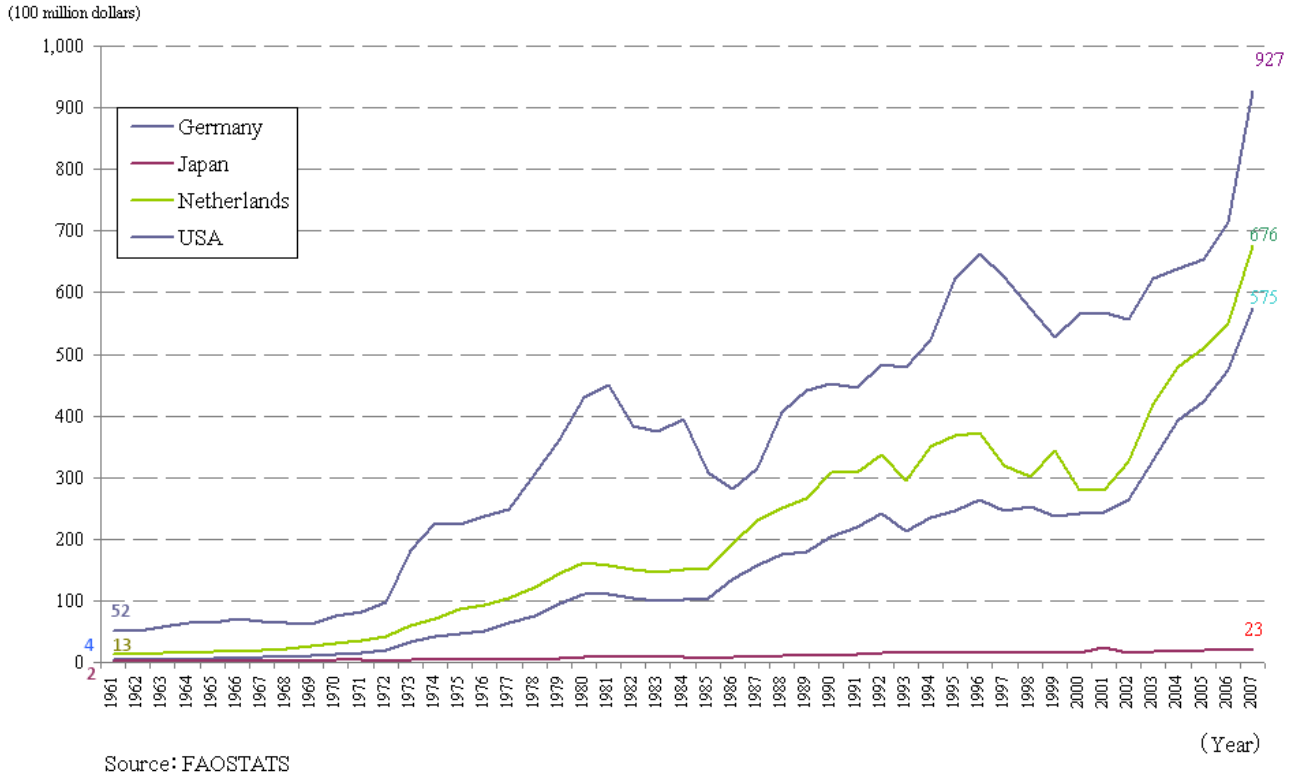
[70] JLTF is held by inviting overseas buyers who are specialized in luxury travels, as well as media. This forum organizes business matching with domestic companies, implementation of experience programs on high quality Japanese style content aiming at effective information distribution, and seminars by experts from in and out of the country aiming at promoting for involvement in luxury business by enterprises. It was held in Tokyo in 2009, and Kyoto in 2010. (http://www.jltj.net/)

[71] It is an organization formed by volunteer companies in Ishikawa Prefecture in order to expedite development of the local economy through the tourism with sustainability. It aims to maintain the structure of distribution of information on Ishikawa's tourism resources toward the wealthy class in the world, and structure of intake of wealthy tourists. (http://www.illf.jp/real/ja/main/realjapan/).

taking a look at the Japan's export performance, export of prime produce is still small. It hasn't responded to the growing overseas needs.

In the other hand, countries regarded as the agriculture nations in the world are improving the export value for agriculture products steadily in emerging economies, including the Asian economic zone, where high income group and the middle income group are increasing remarkably along with the economy development. For example, according to the statistics by FAO, as for agriculture export value during the period of 1960 and 2007(except forest products and marine products) categorized by country, U.S saw the growth by approximately 18 times, England approximately by 23 times, Holland approximately by 53 times and Germany approximately by 148 times (Figure 3-2-1-61). Holland, in particular, which has a land area as small as Kyushu, the export value of its agriculture product amounted to approximately 67.6billion dollars, which is the world's 2nd agriculture exporting country after the U.S. On the contrary, Japan's export value of agriculture products for the period between 1961 and 2007 grew approximately by 14 times, however, its value is approximately 2.3billion dollars, which indicates small compared to that of Holland. The world's export market size for agriculture products is approximately 900billion dollars. That indicates that Japan captured merely 0.3% of the world market share.

Figure 3-2-1-61 Changes in agriculture produce export values in developed countries



In such a circumstance, there are increasing attempts in recent years where agriculture and fisheries enterprises and commercial and industrial enterprises and government authority are working together, and found a business opportunity in exporting agriculture and process products to overseas.

Taking K.K.Producer association Dekopon for example, which originally engaged in distribution and sales of agriculture produce in collaboration with farmers around 11 towns and villages in Chiba prefecture, and now ventured into the business of home delivery service of produce to Hong Kong or Singapore consumers from Chiba. While in Saijyou food industry cluster council in Ehime prefecture, the third sectors in the city

and local trading companies are working in collaboration with JA (Japanese agriculture association) and food makers and developed a food export route outbound from Shikoku region.

Thus, there is a potential for export business for agriculture/marine products and food to be on track as an alternative of management strategy, if local agriculture/fishery enterprises and commercial/industry enterprises are working in collaboration, and manufacturing technology of agriculture fisheries and process technology of commercial/industry, or management know-how are amalgamated. It is expected that development of domestic agriculture fishery, development of export of agriculture marine products and food are promoted in the future by reinforcing business in collaboration with agriculture, commercial and industry.

Therefore, it is necessary to reinforce exports of agriculture products to overseas by providing support in fostering farmers who intent to set on an export business, improving the environment aiming at new enterprises' involvement and by maintaining the environment of agriculture produce export.

(ii) Export of plant factories

It is said that skilled knowledge, experience and technique are crucial for agriculture management, as it requires a high degree of production control due to the factors such as weather, which is difficult to forecast, a chain effect of soil planting or so many variety of breed of plants. For a non-farmer who intends to enter into the agriculture business, agriculture is said to be of high risk in terms of management.

An agriculture production system called "Plant factory" is drawing an attention, which may be the solution to the issues thereof. The plant factory is able to produce vegetable of the maintained level of quality for the entire year, in a well-planned and stable manner without the effect of weather or geographic locations by controlling the plants growth environment (light, temperature/humidity, density of carbon dioxide, nutrient, etc) artificially inside the facility. Also plants' growth environment can be controlled through a computer as well. As labor in the facility is lightened compare to the conventional soil planting, involvement of other sectors other than agriculture or involvement of elders or young are expected.

The ministry of Economy, Trade and Industry (METI) organized the "Plant factory working group" in collaboration with the Ministry of Agriculture and Fisheries and compiled a report on unsolved issues and measures of support aiming to prevail and enlarge plant factories. In the report, it targets to expand the number of plant factories to the world by 3 times and cut down manufacturing cost by 30% in three years time by means of expanding a sales channel for food that was produced in plant factories, promoting support on research and development of basic technique, maintaining the legislative environment including the review of law and regulation, etc. Furthermore, The ministry of Economy, Trade and Industry suggests about exporting plant factories, as a plant to the Middle East and Southeast Asian regions, where demand of fresh vegetable is heightened.

The potential of export of plant factories was addressed in the "Plant factory promotion forum" which was held twice in the past in February 2010 by researchers and enterprises, as well. This forum addressed that plant factories have properties that high quality vegetable is produced throughout the year, in the well-planned and stable manner without effect of weather and geographic location; furthermore, it has a potential to be a solution to the unsolved problem such as environment preservation, measures to curb global warming or food shortage. Therefore, it is pointed out that exporting plant factories have a potential to become one of Japan's export industries.

Figure 3-2-1-62 Container vegetable plants (Left: Outer feature, Right: Inside view)

Photos ：Mitsubishi Chemical Co., Ltd.

Actually, container vegetable factories are scheduled for export to Qatar in September 2010 by Mitsubishi chemical corporation (Figure 3-2-1-62). In addition, in Middle Eastern regions, water is supplied by bowling underground water or processing seawater. Therefore, it is difficult for plants to secure good quality water. The plant factories exported this time are equipped with a filter, the function of which is to make pure water, or installed with a hydroponics solution renewal facility so as to ensure effective procurement of water. As stated thus far, it is expected that plant factories not only play a role as a planting device, but also a technique to solve problem with water resource in agriculture.

In addition to an export of facilities, there are some companies, which export a planting technique itself. Soujitsu Co., Ltd. has developed special film sheets that enable to plant vegetable with minimum usage of water without using soil in collaboration with Mebioru Co., Ltd. United Arab Emirate has performed a test on tomato planting since Jan 2009. Despite the climate of dry, high temperature and little precipitation, it succeeded in the tomato planting which is of high sugar contents and high quality.

As in the above case, expectations heightened that Japanese excellent technique is applied in the agriculture sector, and it will turn to an industry that can contribute to external demand development. Even a technique, including the plant factory related technique, that won't be introduced in the agriculture sector in Japan due to the high cost, there is a need for it as a tool to stable, safety food procurement in overseas.

Therefore, The Ministry of Economy, Trade and Industry and the Ministry of Agriculture, Forestry and Fisheries are working together and promote dissemination and expansion of plant factory market and overseas development.

(2) Creation of domestic demand in emerging economies including the Asia economic zone

(A) Supporting Asia's growth through infrastructure maintenance

In order for emerging economies including the Asia economic zone, which shows prominent growth and expansion, to realize constant economic growth, it is important to maintain infrastructure, as shortage of which has been addressed. Maintenance of industrial infrastructure, which is the base of company activities, will bring about an investment expansion to the relevant regions. And, maintenance of life infrastructure will provide the base to expand consumption. Therefore, as maintenance of infrastructure in emerging economies progresses, which will allow domestic demand to expand. Now it is expected to bring about consistent economic growth.

In the Asia economic zone, in particular, as addressed in Cheaper 2, needs of infrastructure is expanding along with its economic growth. Approximately 8trillion dollars' worth infrastructure needs are created for 11 years during 2010 and 2020. At present, various development projects are in progress in extensive areas aiming at economic development or improvement of the life and income standard (Figure 3-2-1-63). Japan is expected to contribute to infrastructure maintenance actively in Asia's nations so as to let Asia's growth connect to Japan's growth[72].

(B) Overseas development of infrastructure industry

(a) Overseas development of infrastructure industry

(i) Significance of overseas infrastructure maintenance

At present, approximately 2% of the world's GNP, which amounts approximately 1trillion dollars is spent for infrastructure investment and maintenance every year. In order to cope with the expanding infrastructure demand, a total of 41trillion dollars is said to be in need in the sector of water, electronics, railway, road, airport, and harbor (Figure 3-2-1-64). Especially, approximately 726billion dollars of infrastructure demand per year is forecasted in Asia where high growth has persisted[73]. This worldwide trend of high demand is a big opportunity for Japanese economy (Figure 3-2-1-65).

As one of the sectors that are expected to grow, it is important to procure overseas' infrastructure markets. Since the world economic crisis, with regard to sectors which have supported Japan's economic growth, such as automobile or consumer electric sectors, markets in developing countries is shrinking. In contrary, countries in emerging economies including those in China and Korea are notably rising. Owing to the low birthrate and aging issues, there is a certain limit to an expansion of domestic demands. Considering the status of Japan's economy, it is important for Japanese companies to involve in overseas infrastructure maintenance actively, and grow together with emerging economies, including the Asia's economic power.

Figure 3-2-1-63 Regional development projects in progress around Asia

[72] For further details, please refer to "Chapter 2, Section 4 Japan's contribution toward Asia's infrastructure maintenance".
[73] "Infrastructure for a Seamless Asia", 2009, ADB and ADBI

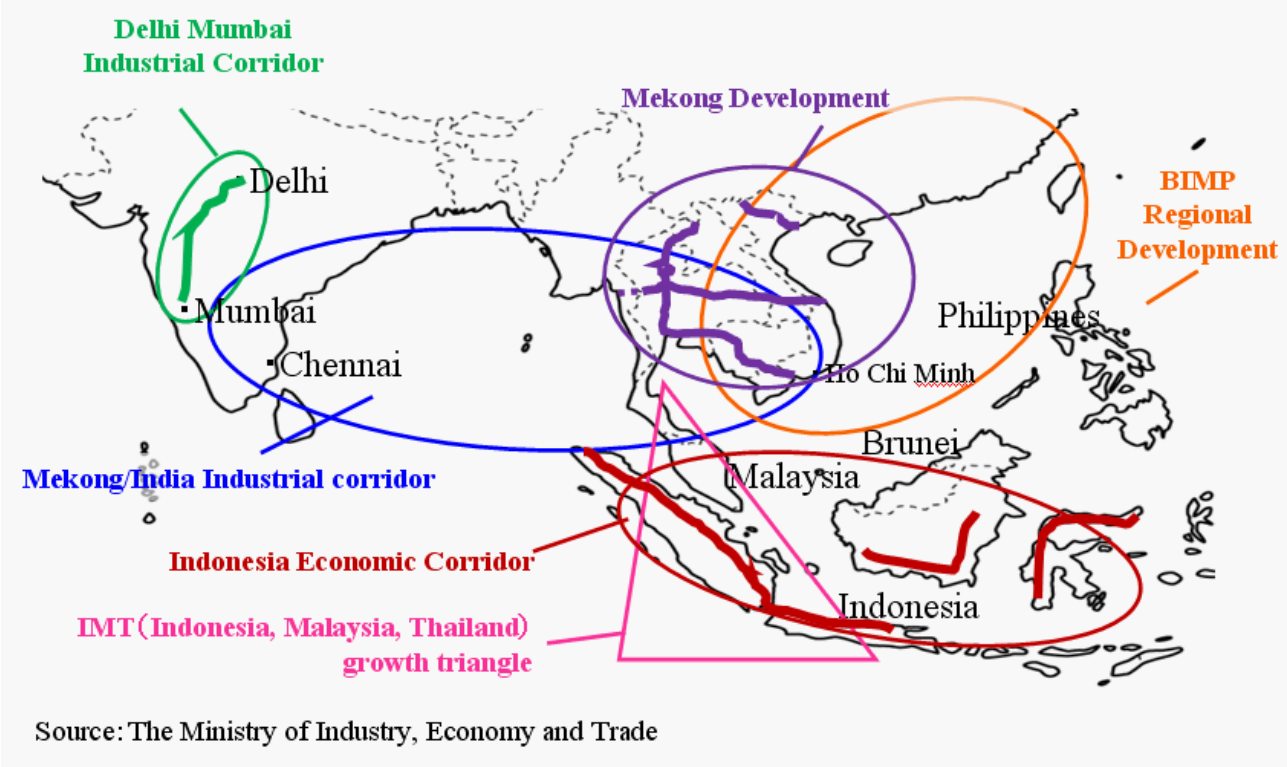


Figure 3-2-1-64 Infrastructure outlook (2005 - 2030)

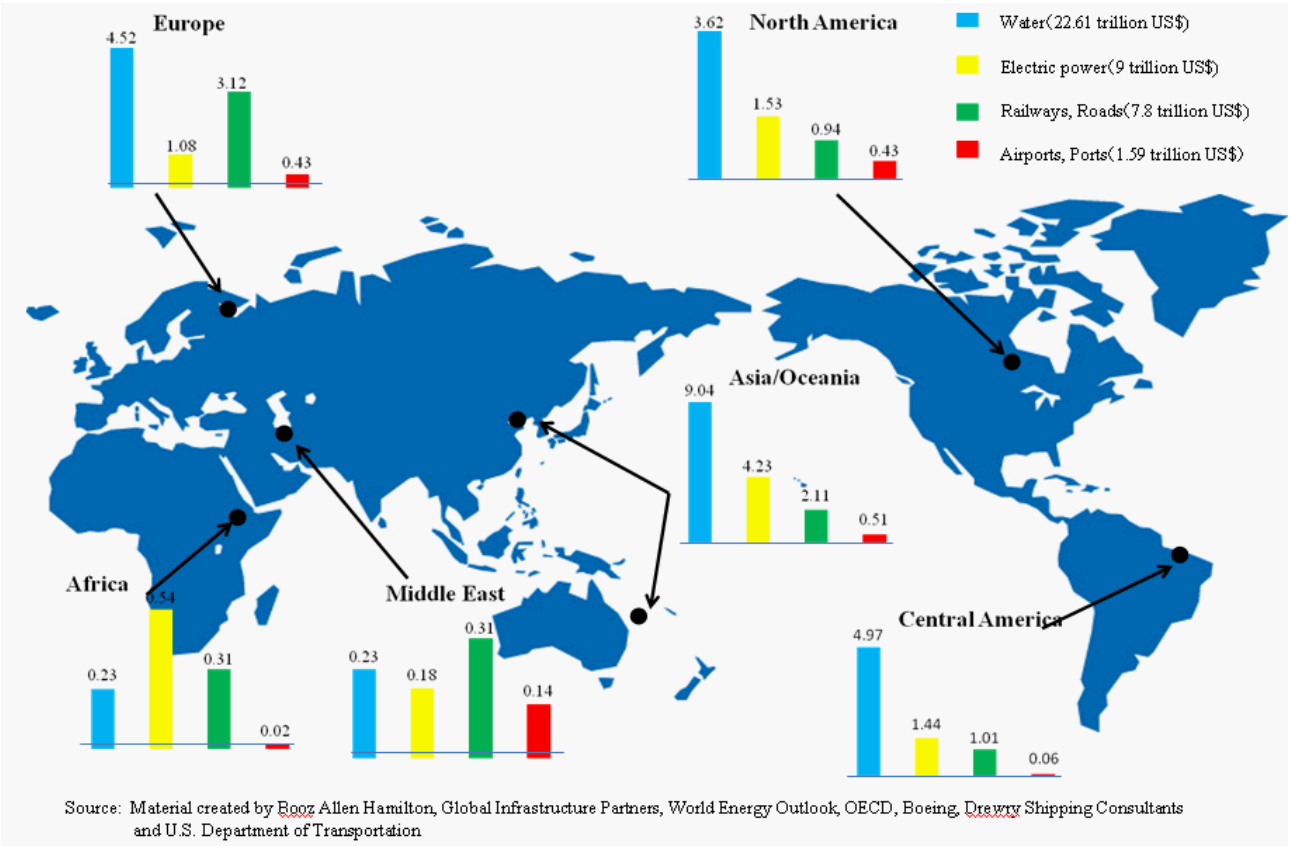
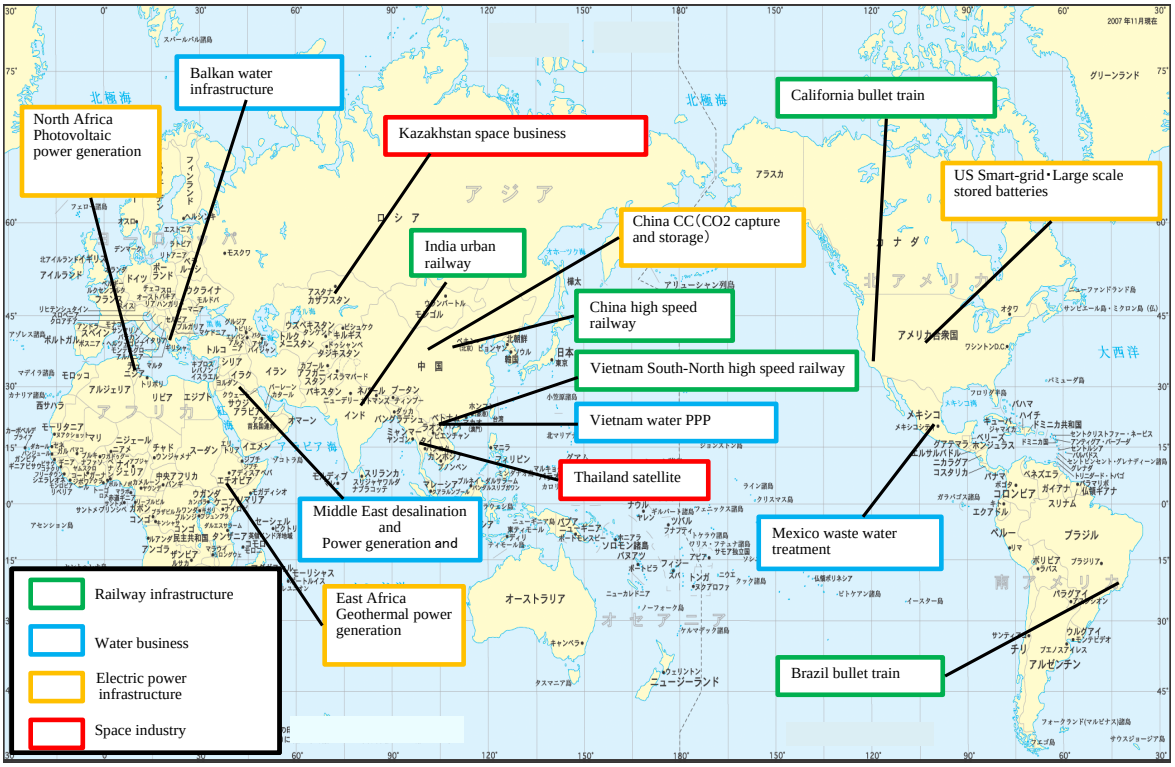


Figure 3-2-1-65 Overseas infrastructure / plant system business development – Example cases



Source：Material created by JETRO

In addition, Japan, which possesses the world's top technologies in terms of environment, is capable to reduce negative impact to the global environment which progresses along with the economic growth through maintenance of infrastructure, such as reduction of carbon dioxide or water purification in emerging economies. The know-how pertaining to pollution problem, energy saving activities, recycle activities that Japan has accumulated so far is a valuable property, which enables to solve issues that emerging economies will be facing such as economic growth, saving of resources, harmony with the environment. As the economy progresses in emerging economies, it is anticipated that such values will be emphasized.

Furthermore, infrastructure maintenance is not only generating economic value by providing cooperation for infrastructure maintenance based on a big project such as Delhi Mumbai economic corridor plan, Indonesia economic Development Corridor (IEDC) or Japan-Mekong Economic Cooperation and Industry, but it is also a symbol of a deepening bilateral relationship. In addition, regarding to high-speed railway maintenance all over the world, expectations are heightening toward Japan's bullet train. In a situation where emerging economies raise, and multipolarity progresses in the world, it is important to enrich economic diplomacy through infrastructure maintenance, and enhance international relationship.

(ii) Development of a system

(Unit sales or system sales)

In order to procure overseas' infrastructure demands, there are several methodologies. For example, a method to procure demands by supplying core components or parts such as a membrane water treatment in the water business or by undertaking up to construction of facility in electric generation business as in EPC Engineering, procurement and Construction, by undertaking of project which covers management control

as in IPP: Independent Power Produce, undertaking construction works at site, investing into projects thereof and procuring investment profit, or undertaking a whole consultation of the project, etc.

In infrastructure business, what business areas are covered varies naturally depend on the sector, counter party's market, strength and weakness of Japanese companies. However, as a general consideration, as long as business style are concerned in which parts are sold separately, unless a strategic measure is executed such as an installation of a black box, commoditization would progress and competition would worsen amid the situation where Chinese and Korean companies edge toward Japan. An EPC equipment sale such as a supply of turbine gains a tentative profit. On the other hand, in the case where an order includes from construction of a facility to operation and management, it is possible to gain profit for the long duration.

It is important, in view of architect of business as a whole such as management and control in the local country, to gain high profit in collaboration with companies in the local country and other companies when necessary. It is necessary to consider taking an order based on system sales taking a look at the whole picture of business and switch to system sales from unit sales.

(Response to a comprehensive needs)

As for emerging economies with less experience in infrastructure maintenance, an order of a project inclusive of comprehensive nature is increasing which covers from the design, construction, operation, management, and even areas that are nothing to do with infrastructure (such as education, technical support, etc). On the other hand, in the case of Japan where infrastructure equipment makers and plant management organization (In most cases, a regional self-government takes a lead) is separated, which results in lack of collaboration. Hence, it is difficult for Japan to respond such a demand from emerging economies.

For example, UAE decided to place an order with a group of Korean companies for a construction of a nuclear generation plant last December, which was the first move in Middle East regions. One of the reasons why UAE chose Korea is, they made a bargain that Korea is responsible for the operation and management, fuel supply and fostering local manpower for 60years[74]. In case of a group of Japan-US companies, it was a consortium consists of mostly makers without an existence of a plant management company. On the other hand, the group of Korean companies has a well-organized structure lead by Korea electric company (national run), which enables to respond the demand of the emerging economy flexible and quickly.

Hence, in addition to the concept of taking an order based on system sales and developing it, as stated thus far, when having a business with emerging economies, it is needed to respond to the needs of the counterparty country even further by developing a package sales.

(b) Common issues which lies in each sector and direction of future policy

(i) To enhance international competitiveness with Japan's infrastructure related industry (Structure of order receiving system, which covers operation of the infrastructure)

In order to cope with a comprehensive order from emerging economies, it is important for Japanese companies to procure the function of operation and management in overseas. In order to so do, the following shall be performed: 1) re-organization of domestic companies and business 2) Collaboration with a foreign company which has a previous performance in overseas infrastructure management (formation of a consortium) 3) Fostering Japanese companies' infrastructure management function.

[74] Nihon Keizai Shinbun (27 February, 2010).

Especially with regard to 3) as above, Singapore or Korea installed a test bed in their countries with the purpose addressed above[75]. Japan should promote an improvement of environment so that public sector could acquire experience of infrastructure management in their own country.

(To enhance competitiveness in terms of cost)

In response to the trend where emerging economies such as China or Korea are partaking in an order-taking competition with the low cost as their strength, European companies are thriving to enhance their competitiveness in terms of cost by engaging in a re-organization of business through a large merger to reinforce the capital, before expanding the supply chain in developing nations[76].

It is preferable for Japanese companies to make use of the investment function offered by Industry innovation Co., Ltd., which aims to support commercialization of cutting edge technology or patents, or provide support to local suppliers in fostering manpower, and engage in the domestic business, re-organization of the company, overseas investment and collaboration with overseas companies.

(Promotion of technical development and demonstration test)

With the heightening concern toward the environment worldwide, the government in each European country is promoting a technology development and demonstration test on renewable energy, energy saving, etc, need of which are expected to heighten further in the future. Japan, too, shall enrich and develop a demonstration project associated with renewable energy and energy saving such as smart grid, solar power or wind power by making use the New Energy and Industrial Technology Development Organization (NEDO), and aim for the development of global standard or market gain by means of domestic technology. Expectation toward NEDO's role-play as project organizer is heightening, which makes use of their excellent knowledge in energy saving and new energy field as well as the network with various government organization, and will work for the enhancement of consistent strategic measures in the future, which support global development of demonstration project as a system in the relevant sectors in various city.

(ii) Enhancement of financial support

In order to cope with huge demands for infrastructure in emerging economies, utilization of public fund is crucial. On the other hand, it is difficult to do so with only public fund, as infrastructure investment involves a long term and big risk, generally speaking. Due to such reasons, it is important to make further use of the function of the Nippon Export and Investment Insurance (NEXI) in order to promote activities of public financial institutions. It is also important to make further use of JICA (The Japan International Cooperation Agency) or JBIC (The Japan Bank For International Cooperation) to supplement public funds.

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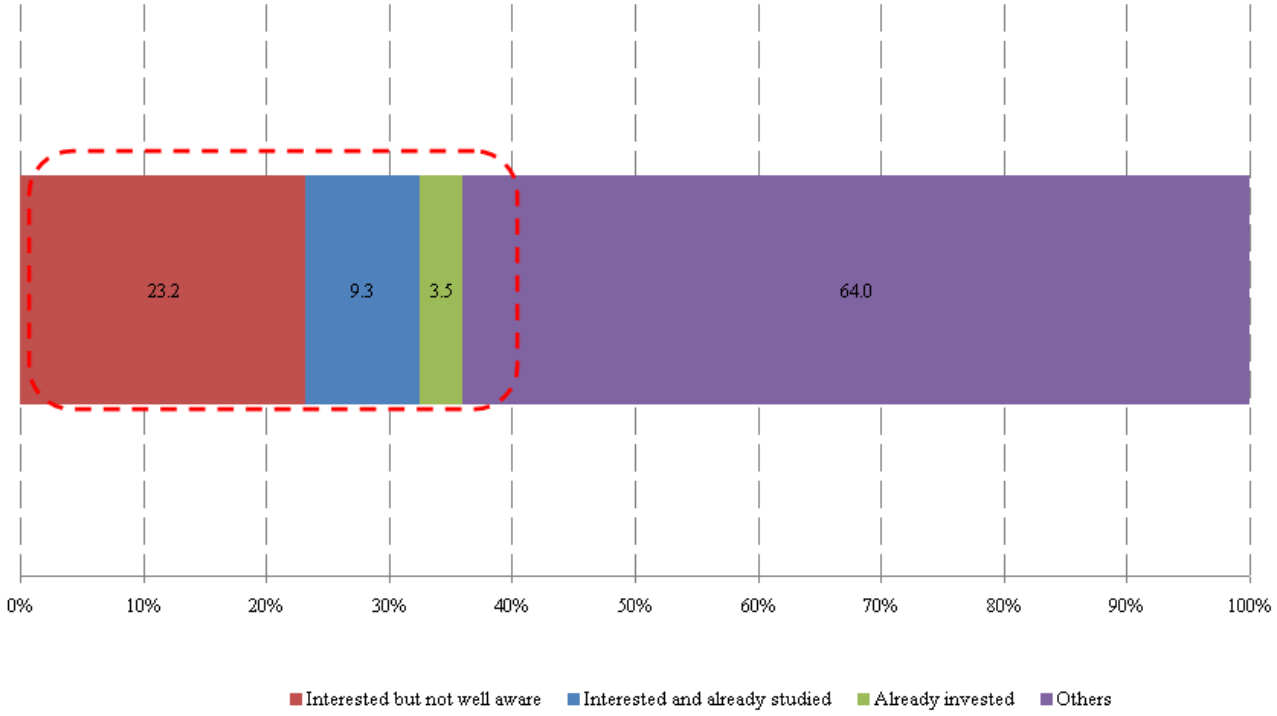
[75] There are some cases for example,
- Korea is proceeding demonstration projects in order to have its domestic companies acquire operation/management technology. For example, a seawater desalination project by the Ministry of Land, Transport and Maritime Affairs, and a water purification project by the Ministry of Environment. Both test beds can accommodate approximately 50,000 ton/day, which are going to be used practically even after each demonstration project was over. Hence, the Korean companies, which involved in the said demonstration projects, are able to fulfill the requirement of the actual performance in operation and management, upon a bidding for an overseas project.
- Keppel Seghers (Singapore) secured a domestic project by bidding in 2005. A wastewater reuse project named Ulu Padan NEWater Plant, which comes with 20-year operation service. Later, the said company secured an order of a project of wastewater reuse plant named Doha North from Qatar in 2007, which comes with 10-year operation service.
- Hyflux (Singapore) secured a seawater desalination plant project named Sing-Spring, Tuas, which comes with 20-year operation service in 2003, which is the biggest plant in Singapore. Later, the said company secured orders one after another for large-scale seawater desalination projects in overseas.
- 2004: Tienjin (China) a project accompanies by 30-year operation service
- 2006: Souk Tleta (Algeria) a project accompanied by 25-year operation service
- 2008: Mactaa (Algeria) a project accompanied by 25-year operation service

[76] A France's heavy electric machinery manufacturer major: Alstom and an electric power distribution and control equipment manufacturer major: Schneider Electric substantially acquired a nuclear power major: Areva (France)'s Electric transmission and Distribution equipment departments in the bidding in December 2009. Areva procured funds for the expansion of nuclear business, while Alstom and Schneider Electric expanded their high profitable departments and reinforced its manpower.

Furthermore, it is important to promote investment in the Infra-fund toward diversification of funding source. The targeted average return for the Infra-fund for emerging economies is maximum 25% and minimum 15%, which far exceeds that of Japan's national pension plan and pension annuity, the average gain of which is 3.5%[77]. Approximately 40% of investment in the infra-fund is covered by pension fund worldwide. On the part of Japan, the government's support via NEXI will promote utilization of public fund, aiming at establishment of an infra-fund sourced from pension fund or by institutional investors

Figure 3-2-1-66 40% of Japanese investors are interested in infrastructure funds



Source：Research by The Ministry of Industry, Trade and Economy （Conducted in October 2009）

(iii) Enhancement of involvement of infrastructure maintenance planning of emerging economies including the Asia's economic zone

Most of infrastructure maintenance projects worldwide are undertaken by the government of various countries. Therefore, urging infrastructure maintenance to the counterparty country through bilateral government basis talks as to what kind of infrastructure needs to be maintained or improved, taking their economic growth into consideration, can lead to the revitalization of demands.

Most of emerging economies tend to apply low cost technology in order to keep down the initial investment cost in their attempt to respond quickly to their enormous infrastructure demand in own country. It is preferable that factors such as energy efficiency, performance of environment friendly nature, low and long term total cost, which are the strength with Japan's infrastructure related technology, are included in an evaluation during a bidding. Hence, it is important to encourage the government and government related organization such as public corporations, or regional self-government of the counterparty country in positive manner. In Europe, infrastructure related consultant companies fulfill such functions. For

[77] In the second report " Toward reform of the public pension fund management" – Turning the world's economic growth to the wealth of life – by the Globalization and reform expert committee in the Economic and Fiscal Policy council (23 May, 2008).

example, in the Urban Environmental Construction Project (Masdar Development Plan[78]) in UAE, consultant companies such as CH2M Hill (USA) were sending out many personnel to the site, who provides consulting and advisory services to the said project.

In Asia, planning of extensive regional developments such as Asia comprehensive development plan is undergoing, which is led mainly by the East Asia/ASEAN economic research center (ERIA), in which Japan's personnel is involving in the consulting and advisory services.

(iv) Promotion of support in package and top diplomacy

In order to promote an important infrastructure project, which shall be dealt with by the entire country, beside financial aids, support or cooperation, that are directly nothing to do with the infrastructure maintenance in need by the counterparty country shall be incorporated in a package, and offered it in positive manner by a top sales bureaucrat.

(v) Coping with international rules

In order to avoid excessive competition between each country and carry out infrastructure maintenance under a fair rule, it is important to relax the OECD rule in accordance with the characteristics of the project. The renewable energy sector water project agreement, which is a special rule of OECD export credit arrangement, can be relaxed by changing it to Climate change, water project sector agreement, and including high efficiency coal fired power generation, extending maximum repayment period, etc. In addition, encourage countries which involve in official export credit, which is a deviation of OECD rules or WTO subsidiary agreement, to comply with the rules, at the same time, take countermeasure (matching) if necessary.

On the part of Japanese government, it is expected to work on the environment maintenance in positive manner in order to promote overseas development of infrastructure sector, for example, establishing a structure to evaluate contribution of Japan's excellent technique and products to the green house gas emission regulations, as well as promoting conclusions of tax treaty and investment agreement.

(vi) Establishment of all-Japan system

With regard to individual infrastructure areas, relevant ministries shall engage in the promotion of overseas development in collaboration with relevant organizations or public sectors. In addition, in a case where action is required beyond a ministry, then, it is required to establish a system for collaboration and coordination in terms of all-Japan.

(c) Condition of market categorized by sector and strategy to be taken by Japan

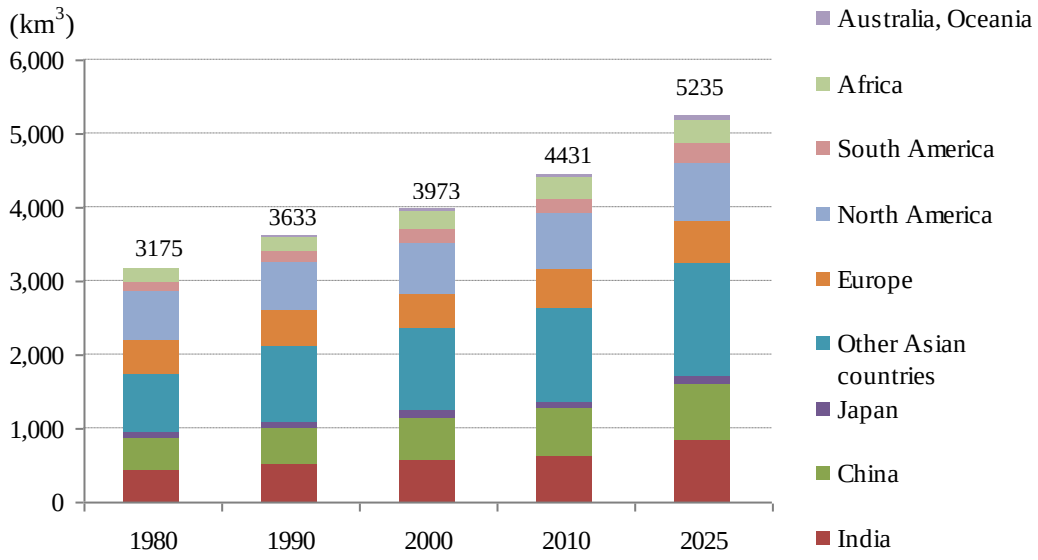
(i) Water sector

Concern with water related business is heightened mainly around emerging economies. World's demand for water is in the upward trend along with the population growth or advancement of urbanization and industrialization. In 2025, it is anticipated to grow by approximately 30% compare to that of in 2000. Asia, on particular, where population growth is remarkable, will take up approximately 60% of the world's water intake (Figure 3-2-1-67).

[78] Masdar Development Plan is an urban community project targeted at zero CO^2 emission, which is ongoing in Abu Dhabi, with the budget of approximately 2trillion yen on the premises of approximately 7km^2, aims to complete in 2015 United Arab Emirates has declared to increase renewal energy introduction ratio to more than 7% by 2020.

Water demand has been increasing in a pace which exceeded to that of the population growth. It is anticipated that the market size will expand from 36.2trillion yen year-to-year basis in 2007 to 72.5trillion yen in year-to-year basis in 2020 (Figure 3-2-1-68). Of 72.5trillion yen, 62.7trillion yen (Total of water and sewage (treatment) as in Figure 3-2-1-68) is associated with traditional water and sewage treatment business (Volume zone), which doesn't require high water treatment technology which Japan takes predominant position. On the other hand, Japan's "Businesses which require utilization of technology" (Growth zone) such as seawater desalination, industrial water, recycled water, amounts to 9.8trillion yen, which is comparatively small in term of the market size. However its growth rate is more than 3 times larger compare to that of in 2007. This is a promising sector in terms of growth of the market.

Figure 3-2-1-67 Changes in worlds' water resource volume



Source : *World water resources and their use - a joint SHI/UNESCO product*

Table 3-2-1-68 World's business water markets (2020)

Service area

Business area

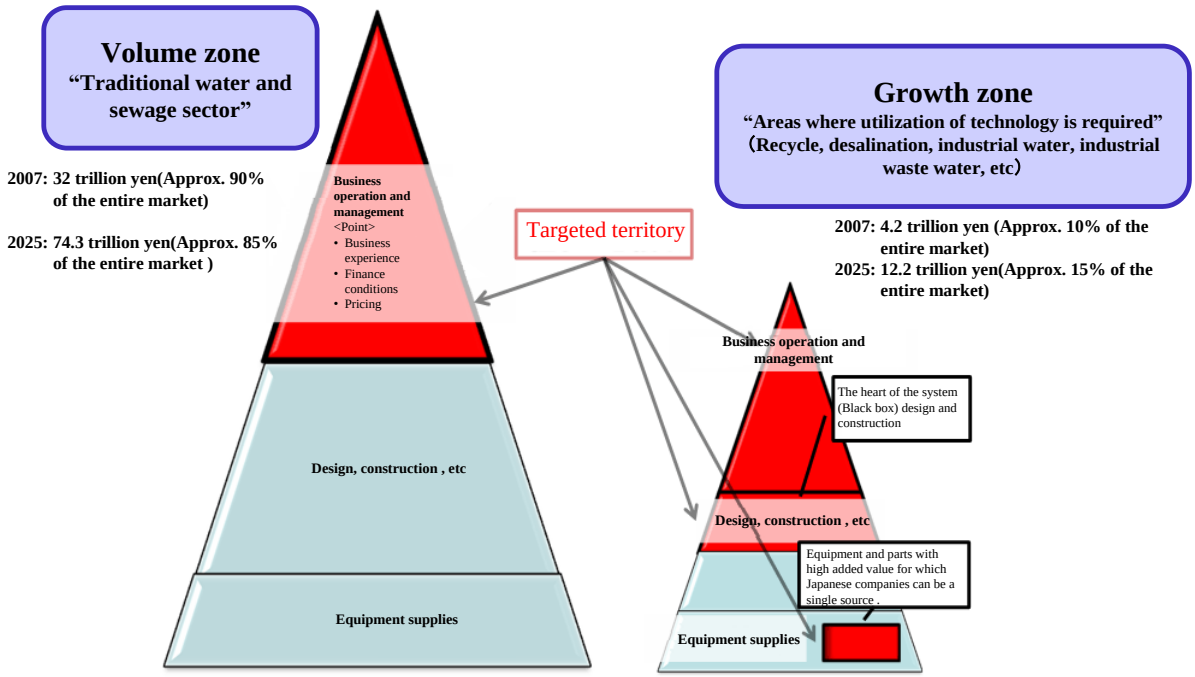
	Material/parts supply, consulting, construction , design	Management/operation service	Total
Water supply	15.6 trillion yen	17.2 trillion yen	32.8 trillion yen
Desalination	0.9 trillion yen	2.7 trillion yen	3.6 trillion yen
Industrial water and waste water	4.4 trillion yen	0.3 trillion yen	4.7 trillion yen
Recycled water	1.5 trillion yen	—	1.5 trillion yen
Waste water (Treatment)	17.3 trillion yen	12.6 trillion yen	29.9 trillion yen
Total	39.7 trillion yen	32.8 trillion yen	72.5 trillion yen

: Volume zone (Market growth will mark more than twice bigger than the 2007 level and Market scale marked more than 10 trillion yen)

: Growth zone (Market growth will mark more than three times bigger than the 2007 level

Source: *Global Water Market 2008* and the estimates by the Ministry of Industry, Trade and Economy

Figure 3-2-1-69 Markets Japan must target at



Source: The Ministry of Industry, trade and Economy

Japanese companies remain in the same business style. Their participation of limited to supplying membranes for water treatment or equipments related to water saving technique to Europe's water major prime contractors, or investment to local companies. Even though Japan takes predominance in equipment technology, previous performance of operation by Japanese companies is lacking, as operations in Japan is undertaken mainly by local self-governments.

As long as the volume zone market is concerned, it is necessary to procure markets by showing predominance in terms of operation and management know-how, finance, etc through a collaboration of overseas companies which involve in management and operation of water business, or creation of an entity lead by Japanese companies including local self-governments. Meanwhile, as long as the growth zone markets are concerned, it is preferable to work on the development and demonstration of new water related technology while making use of NEDO, etc as well, while retaining design/building technology, know-how and core technology of equipment, so as to procure the market (Figure 3-2-1-69).

By means of such strategy, it is expected to foster and create companies, which undertake the entire business so as for Japanese companies to obtain a business license as a prime contractor.

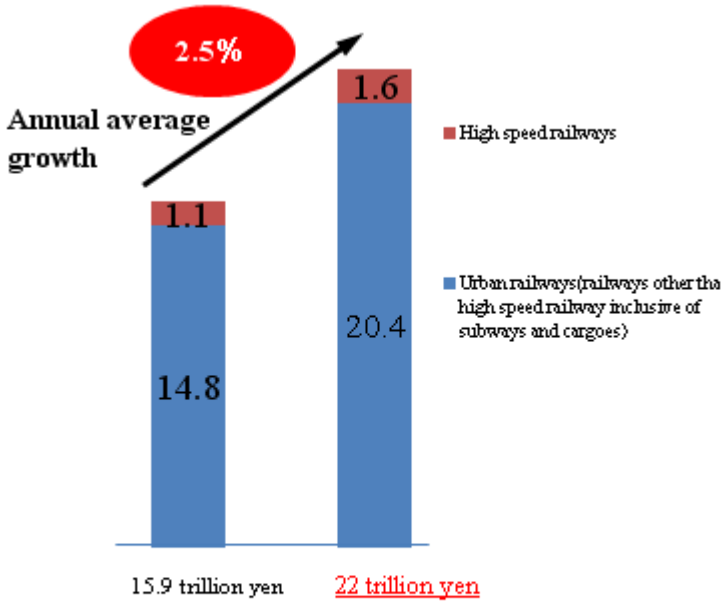
(ii) Railway sector

Public transportation system such as railway is drawing an attention again in terms of the environment and energy constraint, by not only emerging economies, but also by developed countries such as U.S. The market size is 15.9trillion yen in average a year during the period of between 2005 and 2007, but it is anticipated to grow to 22trillion yen annually in 2020 (Figure 3-2-1-70). Maintenance business, in particular, is expected to account for 9.3 trillion, which marks 42% of the total transportation business (Figure 3-2-1-71). Market scale is big in Western Europe, North America and Asia. Of which, the growth rate in Asia is approximately 3.8%, which is very high (Figure 3-2-1-72).

While, Japanese companies is strong in highly reliable hardware. However, taking the railway coach market share, for example, Japan ranks the top 5, but marks only 10% of the world share. In the market

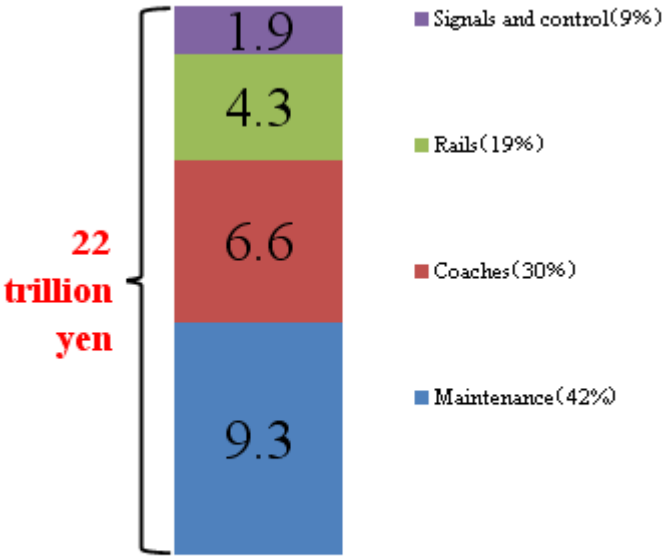
thereof, Europe's big 3 takes up approximately 60% of the world share. (Bombardier Inc (its head office for the railway department is in Germany), Alstom (France) and Siemens (Germany)) (Figure 3-2-1-73).

Figure 3-2-1-70 Market scale categorized by railway type (Average of 2005 - 2007 and 2020 outlook)



Source: *UNIFE Worldwide Rail Market Study – Status quo and outlook 2016*

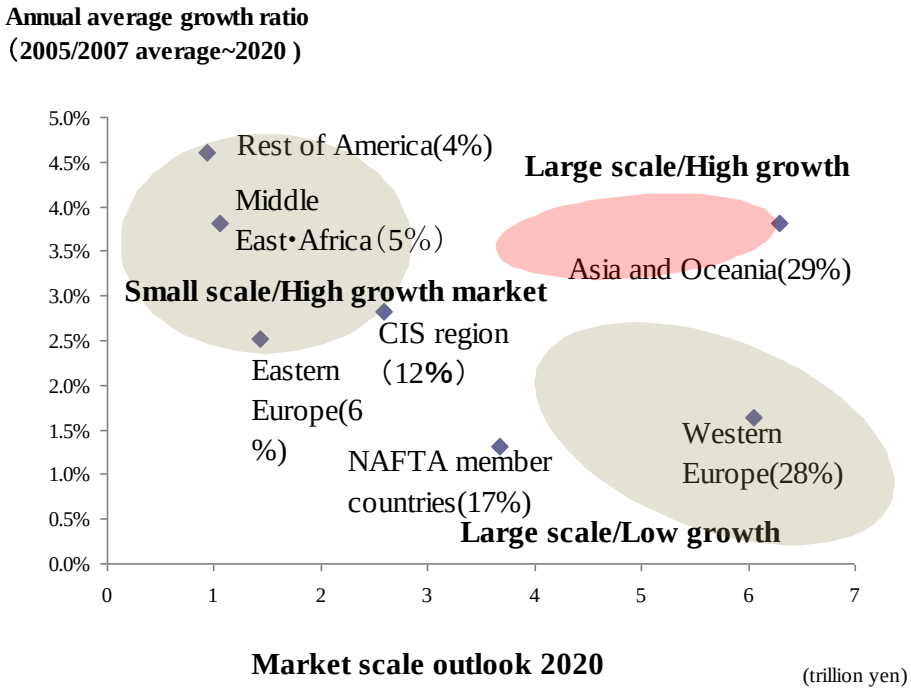
Figure 3-2-1-71 Market scale categorized by business 2020 outlook



Source: *UNIFE Worldwide Rail Market Study – Status quo and outlook 2016*

Competitiveness with Europe's big 3 lies on their established structure in which a consul who is deeply related to the maker involves in an overseas relevant personnel from the stage of development and given a chance to make a proposal on the project which include operation and management (Figure 3-2-1-74). Japan's companies' influence to a project at the stage of the project development is weak, and influence thereof to the bidding is limited. In addition, an operator is less foreign-oriented, and proposal power on the operation and management in overseas is weak.

Figure 3-2-1-72 Railway infrastructure market scale and growth prospect categorized by region



Note: Exchange rate 1 euro＝130 yen
Outlook 2017 and beyond is an estimate using CAGR (10-16 years) for each region.
Figures inside the parenthesis show proportion of market scale
Source:*UNIFE Worldwide Rail Market Study – Status quo and outlook 2016*
(Annual average growth ratio: 2.5% (2005/2007 average~2020))

Figure 3-2-1-73 Company share in the railway coach market (2001 - 2006 average)

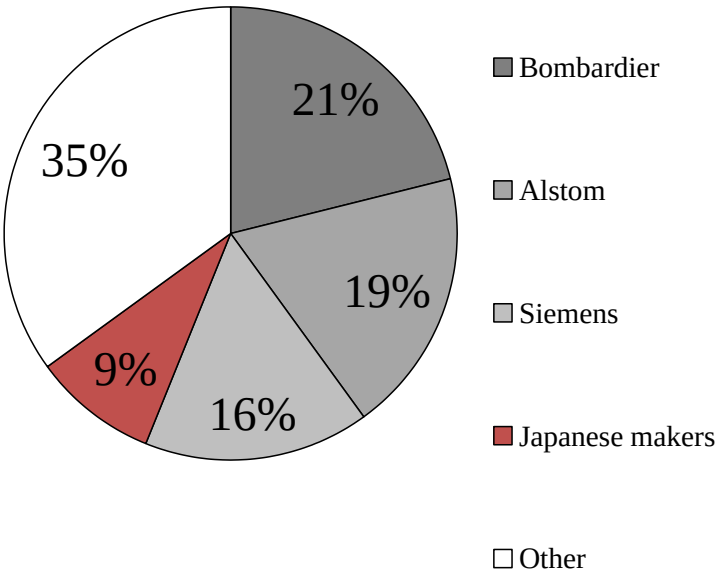
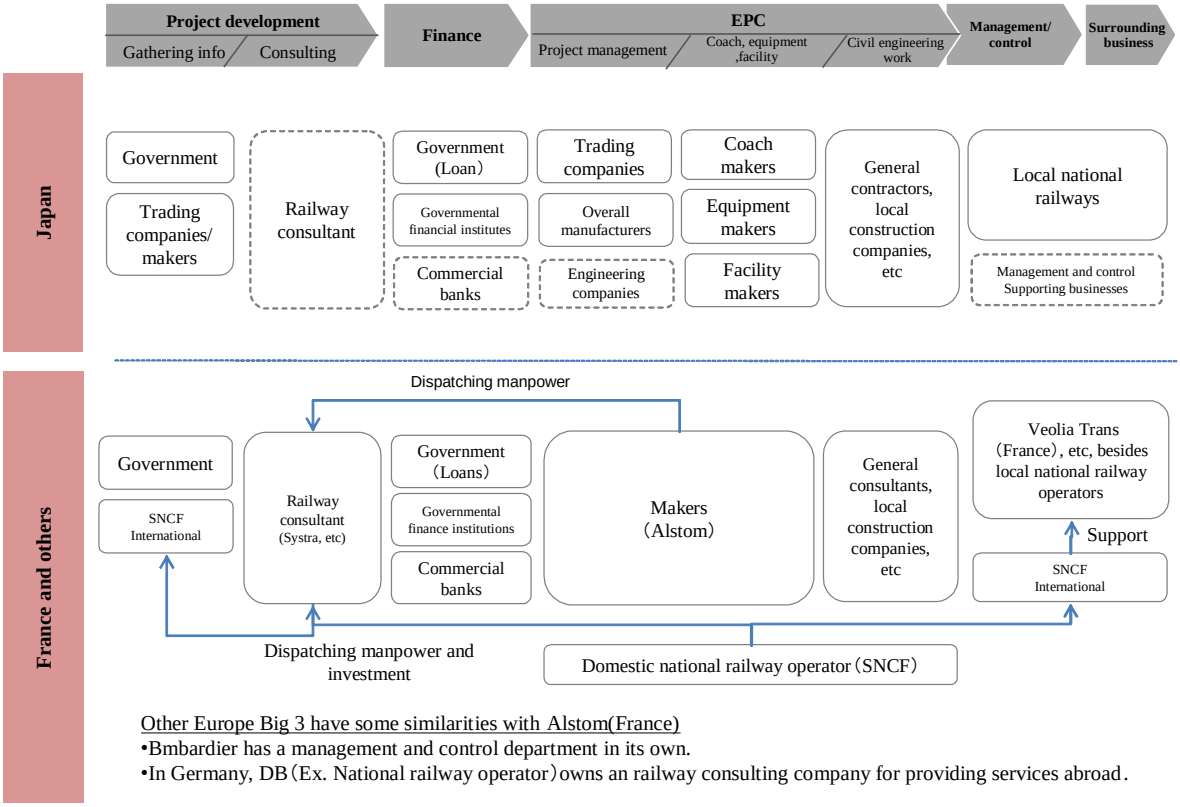


Figure 3-2-1-74 Japan- Europe railway sector industrial structure



Other Europe Big 3 have some similarities with Alstom(France)
•Bmbardier has a management and control department in its own.
•In Germany, DB（Ex. National railway operator）owns an railway consulting company for providing services abroad.

Source:Industry competitiveness committee's material (The Ministry of Industry, Trade and Economy)

In the future, in addition to expanding the market share by way of enhancing competitiveness in term of cost, it is important to enhance the competency of consul function within Japanese companies, deepen involvement in the counterparty country from the formation stage of the project, and ensure competitive environment that won't fall behind in terms of the product standard or safety standard, for example. In addition, it is necessary to support a formation of a consortium which is capable of involving in a scope of business, such as operation and management, and allow companies to build up performance records in operation and management in overseas by realization of a model project.

(iii) Power Generation and Transmission and Distribution field

As for market scale, it is anticipated that the power generation sector amounts to approximately 3.5trillion dollars in total during the period of between 2008 and 2020 (Yearly average 266.6billion dollars), The transmission and distribution field amounts to approximately 3.4billion dollars (Yearly average 261.4billion dollars).

Demand growth in Asia region especially China and India is conspicuous. As for the investment scale in electric power infrastructure facilities estimated by 2020 is, China expects approximately 1.82trillion dollars, India expects approximately 580billion dollars and ASEAN expects approximately 260billion, which indicated that Asia takes up approximately 38% of the world's demand (Figure 3-2-1-76).

Figure 3-2-1-75 Electric power facility investment scale 2008 - 2020 outlook

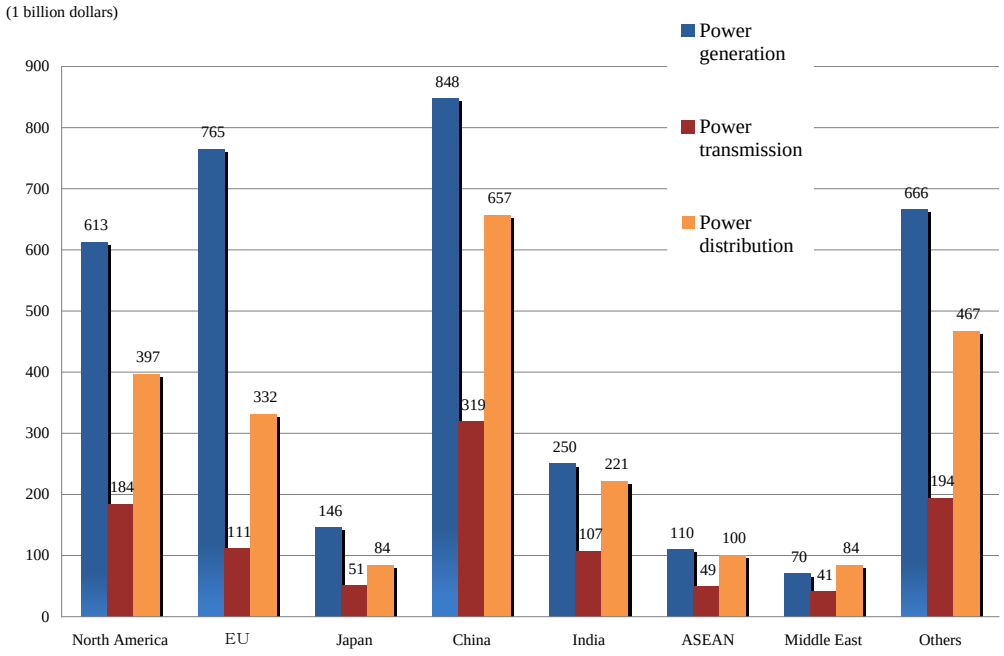


Figure 3-2-1-76 Capital spending categorized by region 2008-2020 outlook

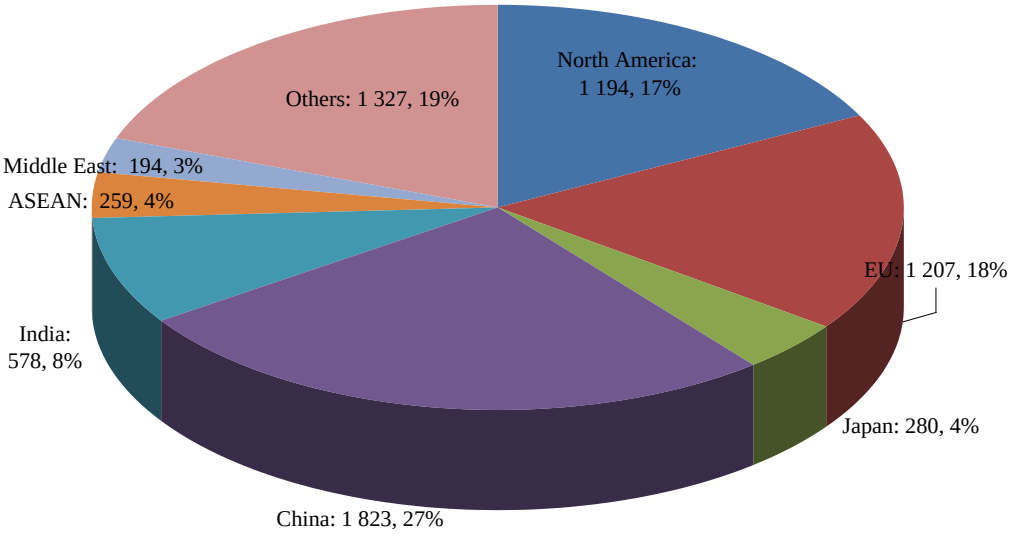
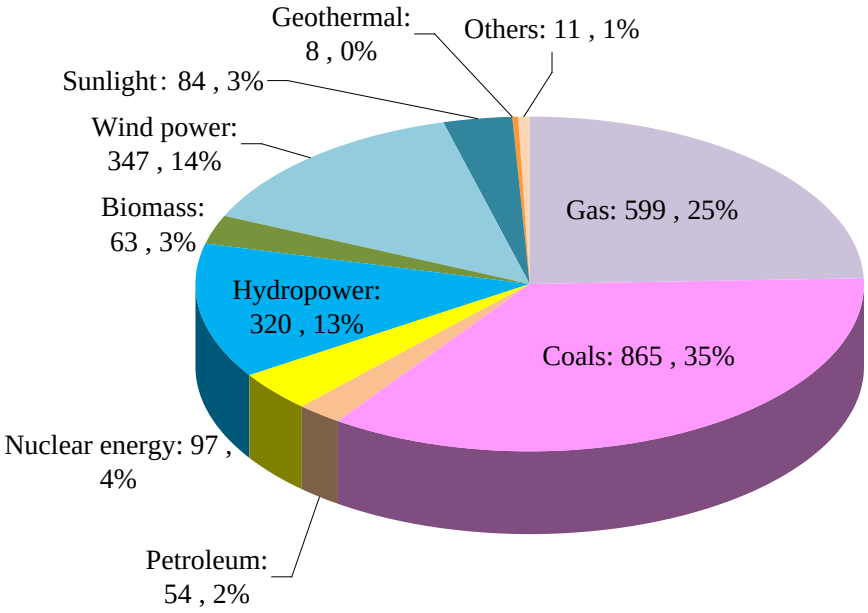


Figure 3-2-1-77 Additional capacity of facility 2008 - 2010 outlook

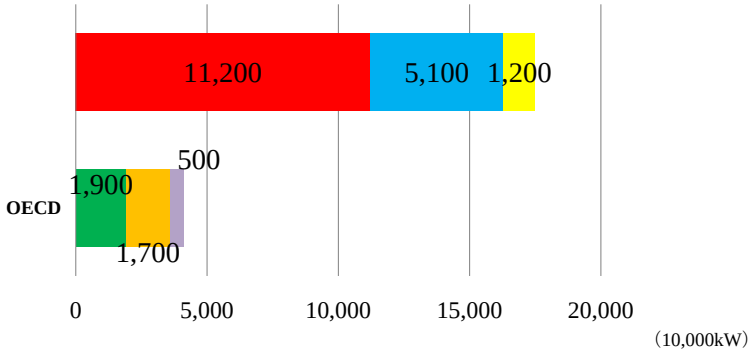


Of the power generation sector, the coal-fired power generation field in particular showed the biggest proportion in terms of capacity of facility to be expanded (Figure 3-2-1-77 and Figure 3-2-1-78). As for regional wise, Asia region including China and India have a large share in terms of the demand. Amid a growing concern toward the global warming, technology of highly efficient coal-fired power generation, which Japan is good at, is drawing an attention. In developed countries, a demonstration project on even more efficient technology, such as integrated coal Gasification Combined Cycle (IGCC[79]), or Carbon Dioxide Capture and Storage (CCS[80]), are ongoing.

[79] IGCC is a highly efficient electric generation system with the combined cycle operation of steam turbine and gas turbine after it gasified coals. IGCC is said to enable coal-fired generation with the same CO^2 emission volume as in oil-fired thermal power generation (Federation of Electric Power Companies' Web site: http://www.fepc.or.jp/future/technology/sekitangas/index.html)

[80] CCS is a technology, which separates and collects carbon dioxide from exhausted gas generated from large-scale emission sources such as thermal power generation, then stores or segregates them under the ground or under the sea for a long period of time so as to curb CO^2 emission to the air.

Figure 3-2-1-78 Capacity of coal fired power generations currently under construction



However, in the markets in developing countries, coastal coal-fired power plants (Figure 3-2-1-79), which costs less on construction, but the energy efficiency is low, remain the mainstream of power generation. As companies in emerging economies are in possession of the technology of construction of the said plant and ability for supplying equipment, Japanese companies are being forced to have a desperate fight against those companies (Figure 3-2-1-80).

As long as high efficiency coal-fired power generation are concerned, it is preferable to commit to oversea development in the future by emphasizing on business which can make use of Japan's excellent know-how on operation and management such as Japan's high competency to produce hardware, preventive maintenance, etc.

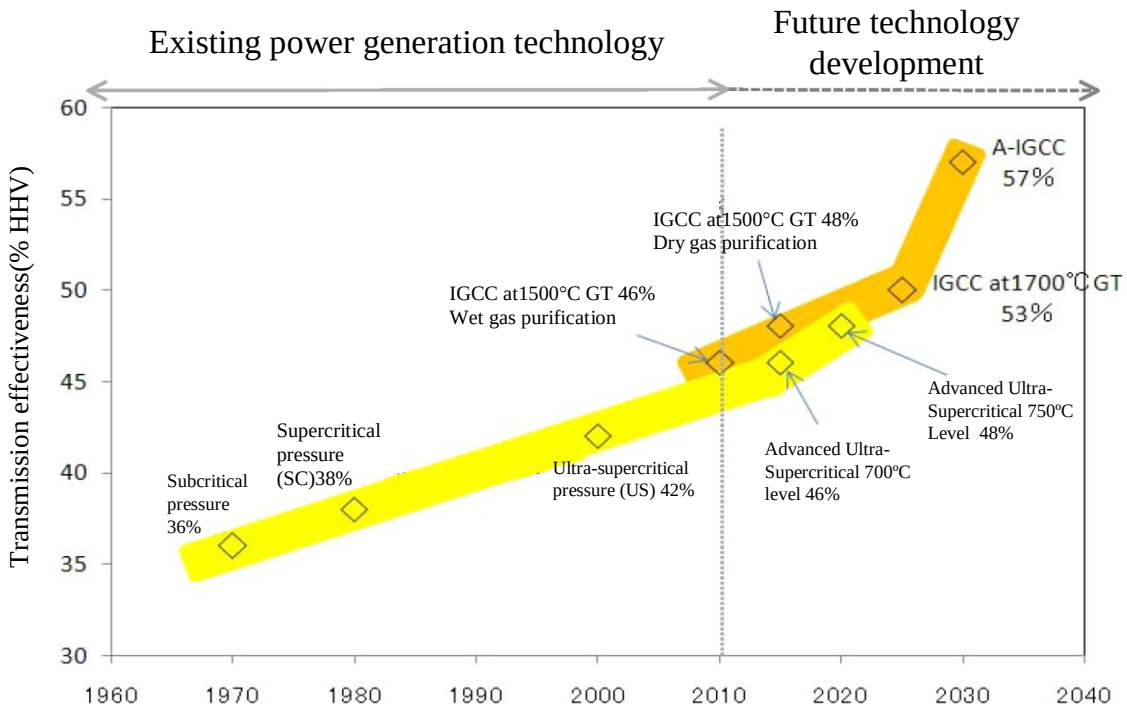
With regard to energy generation, beside coal-fired power generation, demands for the maintenance of renewable energy generation is high worldwide, in which there is a need for infrastructure maintenance which makes use of Japan's high technology.

As for transmission and distribution field, in addition to the demand in Asia region, there is a big demand for replacement of facilities in advanced countries such as North America and EU, as well. Especially emerging economies in which power system is unstable, there is a great concern about the technology that ensures stable electric supply with less transmission loss for areas especially industrial areas.

Japanese companies boast high reliability in power system, and have strength in technology of high efficiency and large capacity high voltage transmission or downsizing transformer. Despite the fact, Japanese companies captured as little as 5 or 6 percents in the world share (Figure 3-2-1-81).

Japanese companies shall commit to overseas development on transmission and distribution system in the future in Asia region where urban population density is high and high temperature and high humidity, also Japan's technology is easy to be used, or in developed countries where demand for a marine cable installation along with offshore wind power installation is expected. In order to do so, further cooperation between an electric company which is competent in drawing a master plan of whole transmission and distribution system and an equipment maker is required.

Figure 3-2-1-79 Coal fired power generation - Improvement of efficiency



Source: *Clean coal committee report outline* and *Cool Earth-Energy innovative technology* planning (The Ministry of Industry, Trade and Economy)

Figure 3-2-1-80 Steam turbine world share

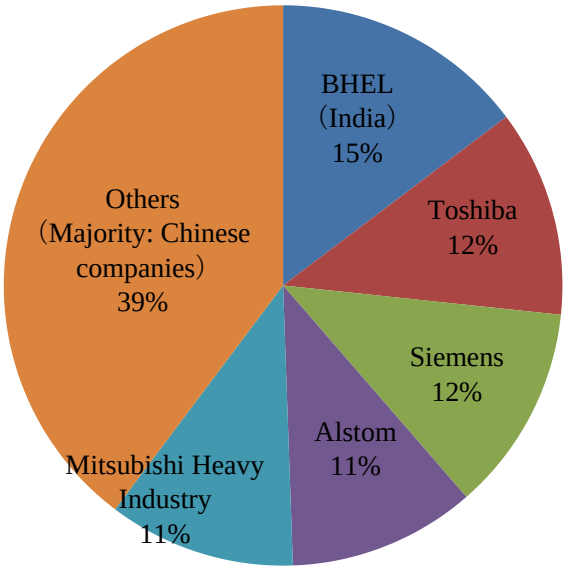
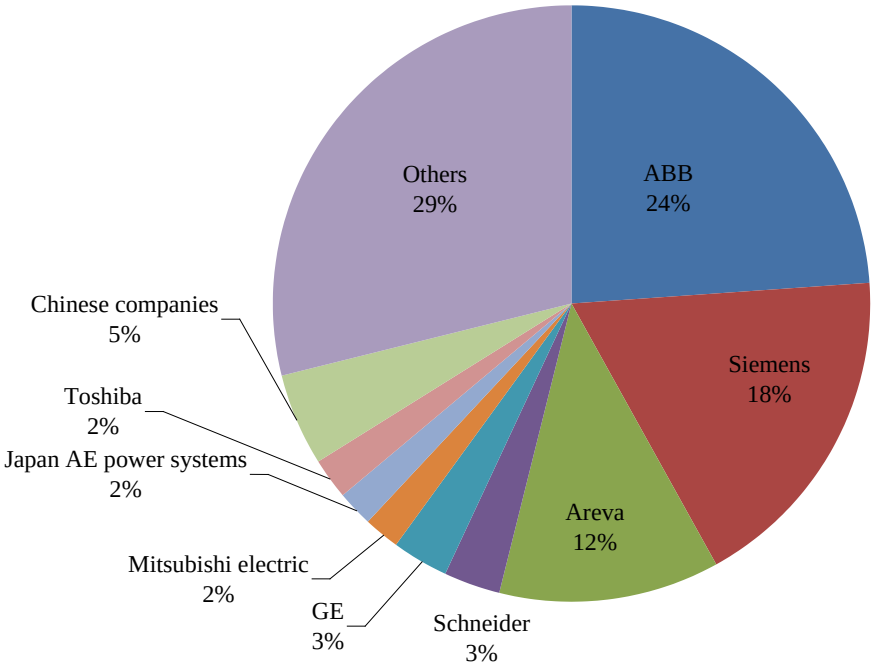


Figure 3-2-1-81 Transmission and distribution equipment world share



Together with the coal-fired power generation sector and electric transmission and distribution sector, it is expected to work in the government level to change counterparty country's supply criteria[81] from the introduction cost sensitive to the total cost, complex criteria inclusive of external diseconomy. At the same time, it is expected for Japan's government to support consulting operation which is undertaken by Japanese company to the counter-party country.

(iv) Nuclear power sector

Nuclear power is focused again in view of the environment and energy constraint not only by emerging economies, but also by developed countries. Many nuclear plant construction projects are now being planned worldwide. It is assumed that nuclear power business would grow steadily and smoothly. Capacity of nuclear facilities is expected to grow by double by 2030 compare to that of at present, and the market scale will grow to approximately 11trillion yen in the year-to-year basis (Figure 3-2-1-82). In the meantime, North America is a promising market for its biggest scale and low risk, as well as China and India for the prospect of rapid growth. In addition, countries where atomic power generation was newly introduced such as South East Asia or Middle East regions are markets to be focused. However such region is considered to place an order inclusive of operation and management, which will become mainstream trend.

As Japan has been constantly engaged in nuclear power plant construction even during the world's nuclear stagnation period in the late 80s and later than that, Japan's reactor makers achieved a high technology and played a central role in the global industry restructuring (Figure 3-2-1-83). In addition, Japan steel work Co., Ltd. (JSW) takes up approximately 80% of the world's share in term of large forging such as nuclear pressure vessels.

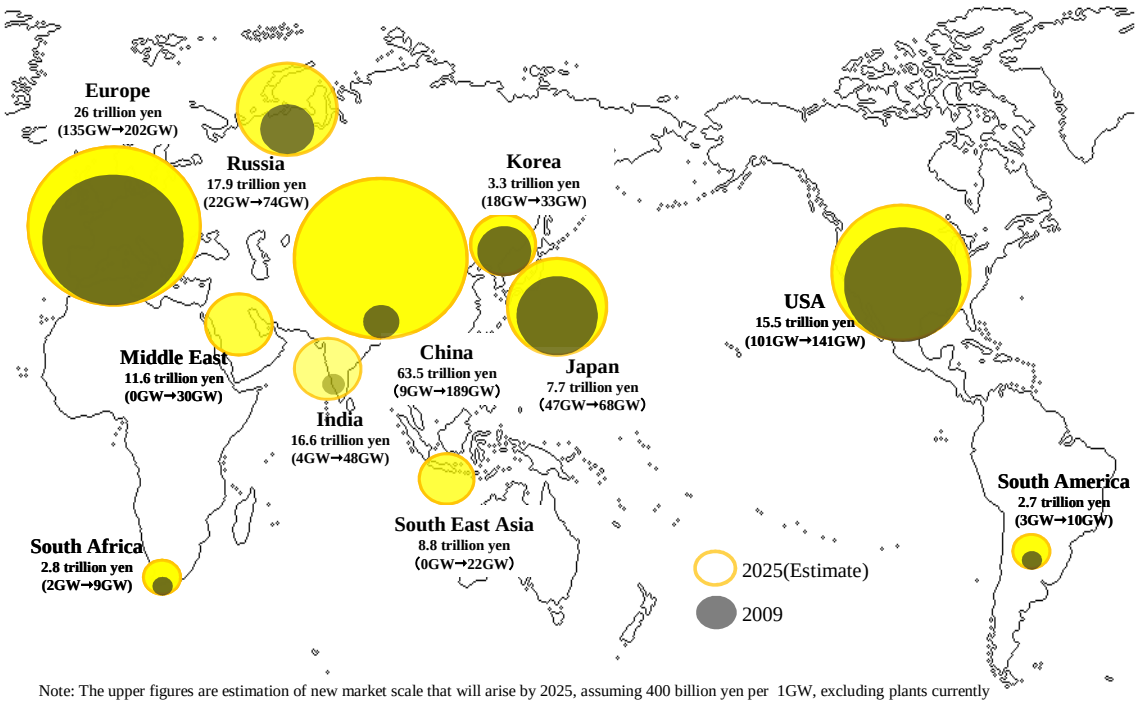
However, this is a difference case where Korea established a unified order-receiving structure, which includes the operation service, and got an order for a nuclear project from UAE. Japan is in the difficult

[81] "The first crash program" was proposed in 2006 by Indonesia, in which coal-fired plants, which hold 10million KW worth' electricity, are to be added urgently. A total of 8billion-dollar-project was put out to tender internationally. However, the bidding condition was much to the advantage of companies in emerging economies. In specific, neither environmental consideration, nor previous performance in overseas was required. In the end, Chinese based companies got most of the project.

position in coping with the needs of the countries, which introduce nuclear first time. Also Japan is different from France or Russia, as Japan doesn't possess a consistent fuel supply system. Hence, it is important for Japan to enhance cooperation with the countries which supply uranium or services, including Kazakhstan or Russia (Figure 3-2-1-84).

As a feature of the nuclear sector, when Japan supplies nuclear related items, nuclear technology and nuclear fuel to a country which introduce nuclear first time, conclusion of the nuclear agreement is essential. Japan entered an agreement with 6 countries (USA, England, France, Canada, Australia and China) and 1 international organization (EURATOM) all of which have come in effect. Russia and Kazakhstan signed the agreement; Korea and UAE are still under negotiation (Figure 3-2-1-85). Considering the status of the global nuclear development in the future, Japan needs to enhance the solid foundation necessary for a nuclear introduction, so as not allow major countries or Korea to subordinate greatly, at the same time, work on negotiation with Vietnam, Jordan and South Africa toward conclusion of the agreement, with the needs take into consideration.

Figure 3-2-1-82 Nuclear power generation demand 2025 outlook



Note: The upper figures are estimation of new market scale that will arise by 2025, assuming 400 billion yen per 1GW, excluding plants currently under construction, figured by the Ministry of Industry, Trade and Economy. The lower figures in ( ) are facility capacities expected in 2025 and current facility capacity (GW).
Source:The World Nuclear Association (WNA) Data (January 2010)

Figure 3-2-1-83 Transition of major nuclear reactor makers

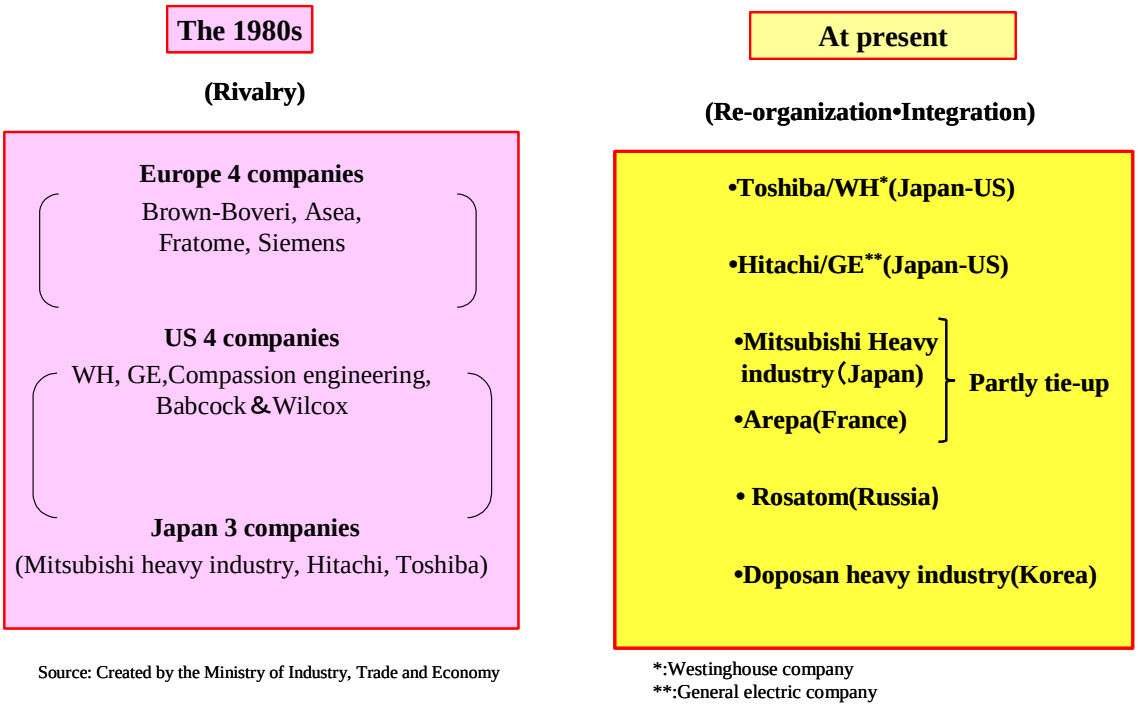


Figure 3-2-1-84 Fuel supply chain structure in each country

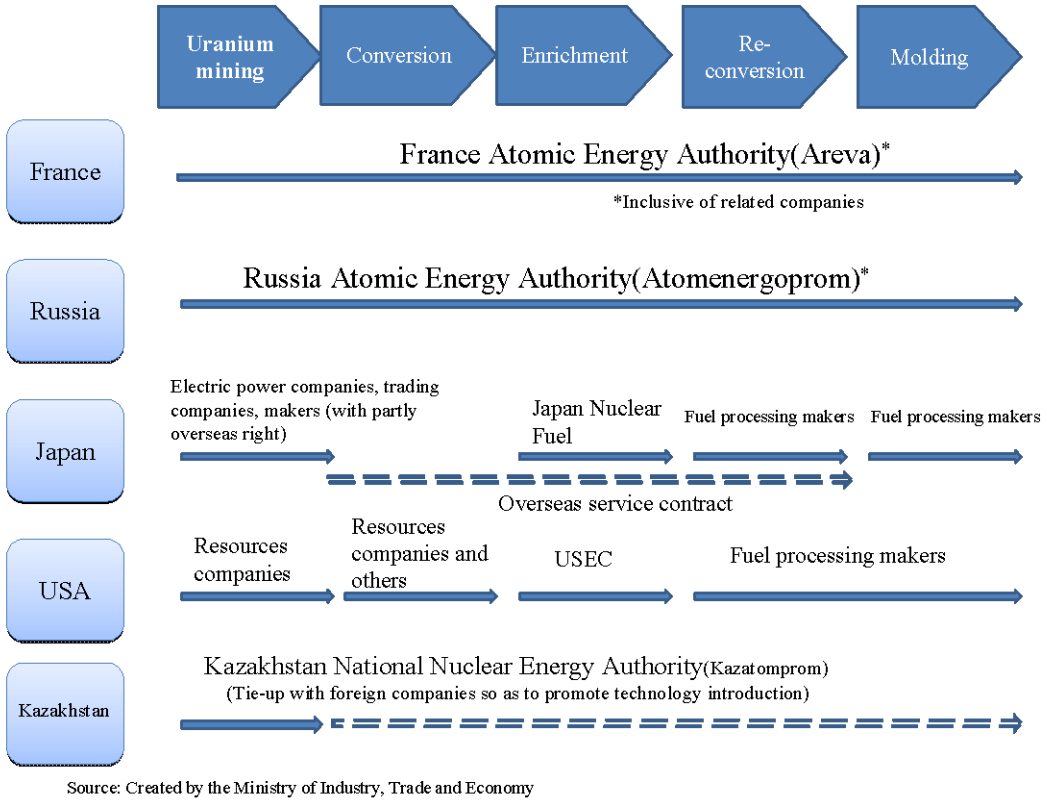


Table 3-2-1-85 Bilateral nuclear agreements with developed countries

Agreement signed(○: took effect, ●: Haven't taken effect ,*: Unknown the status

		USA	France	Russia	England	Canada	Korea	China	Japan
Developed countries	USA			●		○	○	○	○
	France	○		○			○	○	○
	Russia	●	○		○	○	○	○	●
	England			○			○	○	○
	Canada	○		○			○	○	○
	Korea	○	○	○	○	○		○	Under negotiation
	China	○	○	○	○	○	○		○
	Japan	○	○	●	○	○	Under negotiation	○	
Countries which newly introduced nuclear energy	Vietnam		●	*			○	*	Negotiation to be initiated
	Brazil	○	○	○		○	○		
	Jordan	Under negotiation	○	○	○	○	○	*	Negotiation to be initiated
	Turkey	○		○		○	○		
	Indonesia	○		○		○	●		
	Thailand	○							
	Egypt	○	○	*		○	○	*	
	Kazakhstan	○		○		Under negotiation	●		●
	UAE	○	○				○		Under negotiation
	India	○	○	○	Under negotiation	Under negotiation	Under negotiation		
	Argentine	○	○	*		○	○	*	
	South Africa	○		○				*	Negotiation to be initiated

Note:Canada takes a stance that it won't transfer nuclear related items to some of the countries which it signed with. The scope of nuclear agreement does not necessarily cover transfers of equipments.
Source: Various media reports.

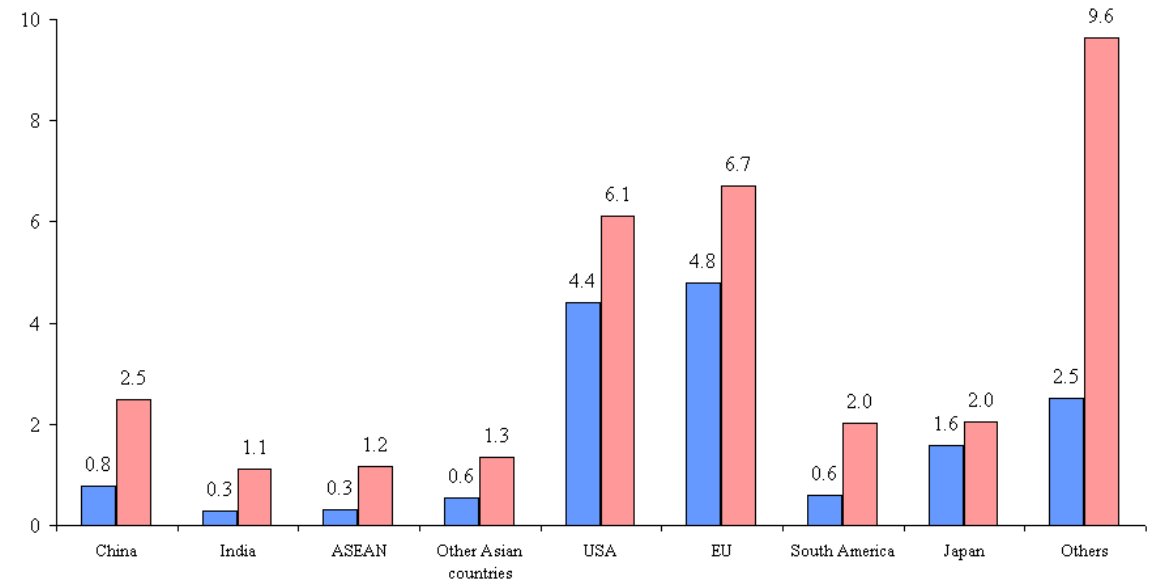
Japan is expected to capture the demand of new and expansion EPC and equipment steadily in North America's market making use of Japan's high technology, at the same time, enhance the fuel supply chain or strategic conclusion of the agreement. Also Japan is expected to maintain the all-Japan system led by electric companies, and cope with an order, which covers the operation and management from countries, which wish to introduce nuclear for the first time.

(v) Waste material treatment and recycle sector

The market scale of the sector thereof is expected to expand from 16trillion yen in 2005 to 33trillion yen in 2020, which is about 2 times larger. Rapid growth in demand is forecasted mainly in emerging economies, but growth of China's market, in particular, will draw an attention (Figure 3-2-1-86).

To establish a market for waste material treatment and recycle market, legislative system of relevant country is greatly involved. Taking a look at the legislation status associated with waste material treatment and recycle in Asia, which is a promising market, home appliances and automobile recycle field drew an attention, legislation system of which is assumed to be established in several years time (Figure 3-2-1-87).

Figure 3-2-1-86 Market scale of recycle business (2005 and 2020 outlook)



Source:Material created by Dream incubator Co., Ltd.

Table 3-2-1-87 Development of law and regulations on waste material and 3R law in Asia Countries (Enacted year)

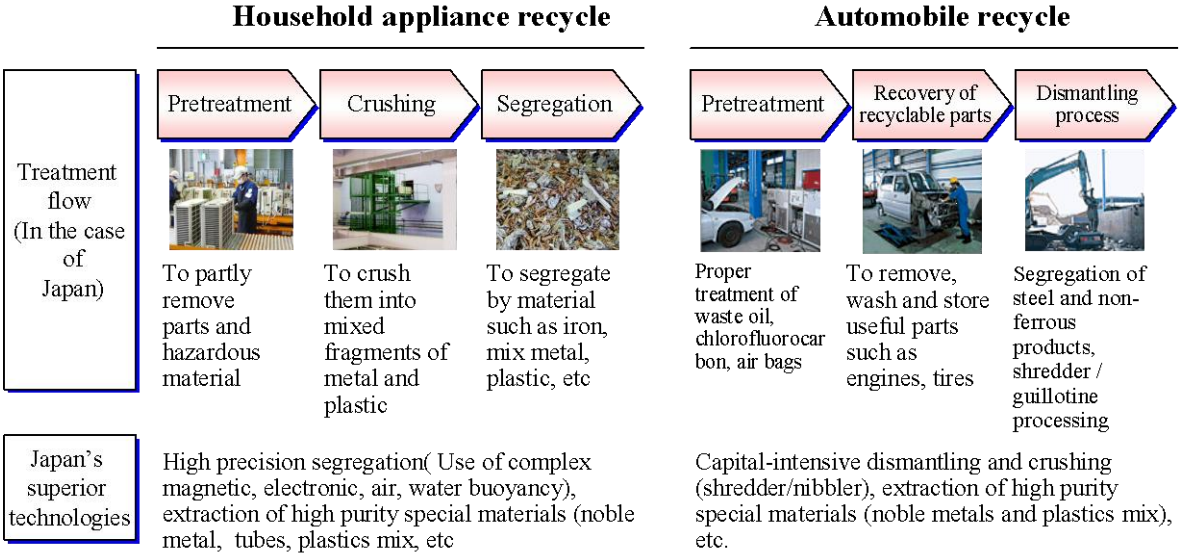
	Waste material treatment related law and regulations	Law and regulations concerning to recycle			
		Basic law	Individual law		
			Packaging	Household appliances	Automobile
China	Environmental pollution prevention act on solid waste 1995	Circular Economy Promotion act 2008		2009 (To take effect in Jan. 2011)	Under consideration
Taiwan	Waste material cleaning act 1974	Resource recovery and recycling act 2002			
Korea	Waste material management act 1986	Resource conservation and reuse promotion act 1992	1992 (Regulated in the basic law)	Resource Recycling Act on automobile, electrical and electronic equipment 2007	
Thailand	Promoting the National Environmental Protection Act, Factory Act, Hazardous Substances Act 1992			Under consideration	
Malaysia	Environmental regulations on designated waste 1989			Under consideration	
Vietnam	Hazardous waste management regulations 1999				
Philippines	Dangerous material and hazardous /radioactive waste material act 1990				
Indonesia	Hazardous waste management 1994 (Regulations 19)				

Sources: Various material

Backed by Japan's resource recycle system that is the world's highest standard, Japan possesses high technology and operation know-how in the waste treatment and recycle related industry, which enables to extract high purity material (Iron, non-iron, plastic, etc) from the waste (Figure 3-2-1-88). Europe's major companies such as Veolia (France), Suez (France) and Remondis (Germany) have promoted their business development to Asia. However those companies remain in the waste material treatment field. Hence, Recycle market is said to be a promising market for Japan in the future.

In order for Japan to create "Japan-made recycle major" in which a series of value chain from recovery, dismantling/treatment to recycle are performed in succession by working with a local company, with Japan's advanced technology and know-how made use of, it is expected to build up successful example cases in China as a first country to be targeted, where the legislative system is now under construction, and move on to other Asian countries or other sectors, with the performance achieved in China as a solid base. In that case, it is expected to promote each country's legislation maintenance through environmental cooperation not only in country level, but also in local self-government level, as well.

Figure 3-2-1-88 Outline of Japan's typical waste treatment and recycle system



Sources:Panasonic eco technology center Homepage ・Metal recycle company Homepage, and others

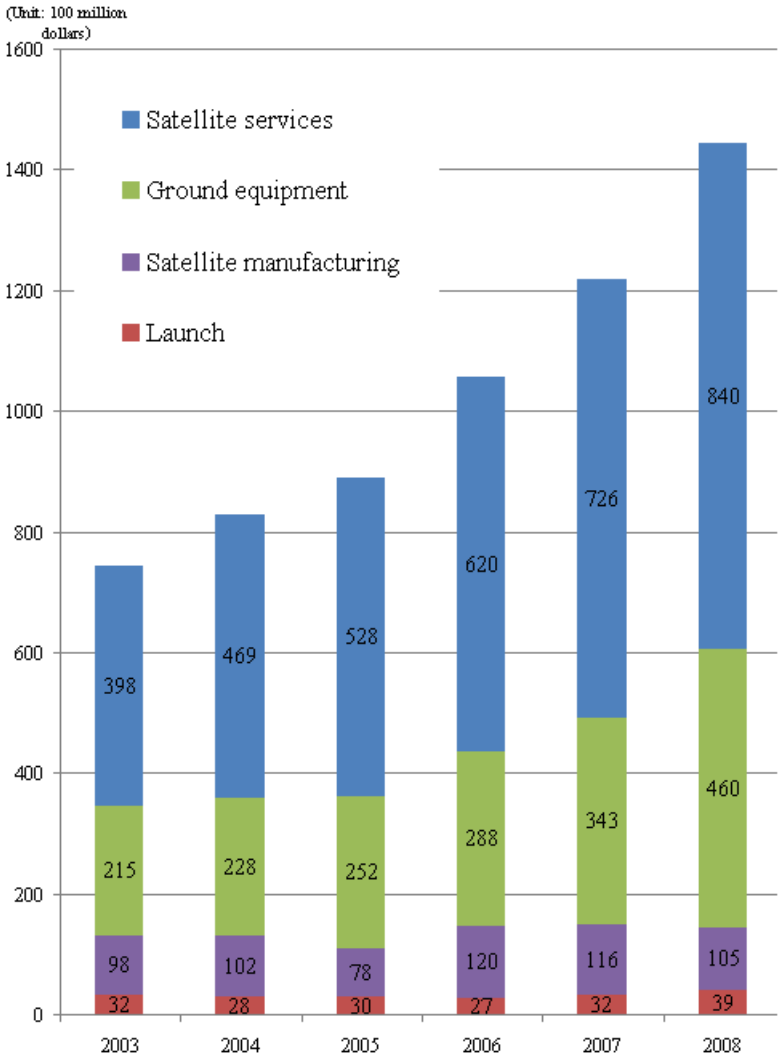
(vi) Space industry sector

The Market scale of the space industry is approximately 144.4billion dollars in year-to-year basis in 2008 (Figure 3-2-1-89). It has grown by average 14% every year for the past 5 years, and it is anticipated to grow even further. As for the market scale itemized by department, communication /broadcasting department expects growth in satellite launches by approximately 1.3 times larger (Figure 3-2-1-90), earth observation will increase by approximately double (Figure 3-2-1-91). To capture such markets, countries so called "emerging space nations", which intend to possess a new satellite or add to the existing one, are promising target.

Japan has exported mainly components, and dependent to the sales on domestic government demand, order of which is based on unit sales. As a consequent, there is no established order receiving structure for system sales, which covers from manufacturing of a satellite, launching service to fostering manpower to/of private companies. In the end, Japan got a late start to enter into the space service field where value chain is greater. Hence, top rankings in the market share are all European companies (Figure 3-2-1-92).

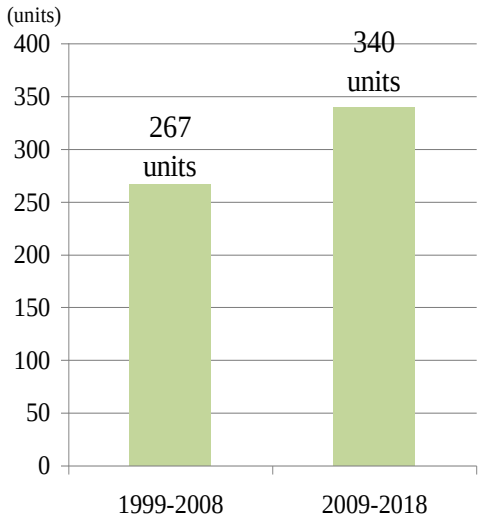
In addition, as a result after Japan attached too much importance on research and development on order receiving based on unit sale, Japan fell behind in taking actions such as building up actual performance on operation, standardization, and low costing. However, Japanese companies have high technology in component and have strength in downsizing equipment.

Figure 3-2-1-89 Sales scale of World's space industry



Source:*State of the Satellite Industry Report(2009)* (Satellite Industry Association)

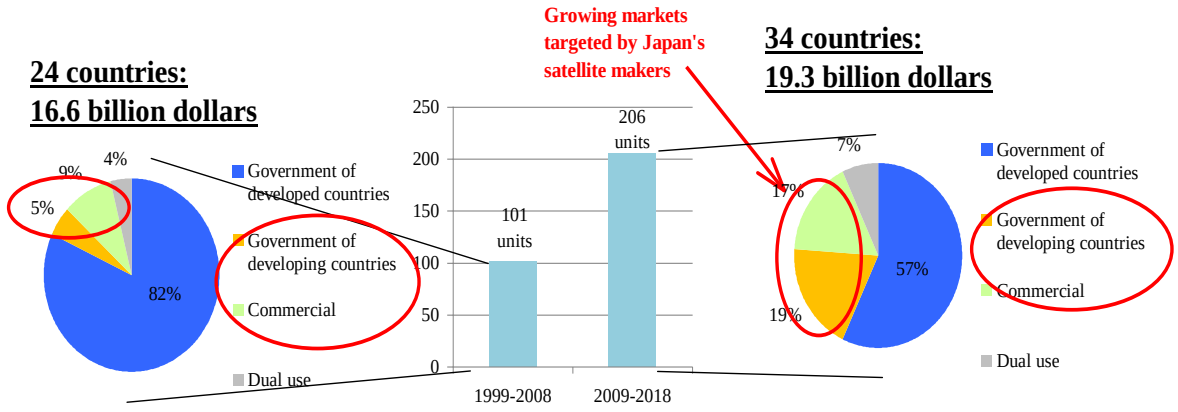
Figure 3-2-1-90 Commercial market scale of communication and broadcast satellite



Source: *2009 Commercial Space Transportation Forecasts*
(FAA: Federal Aviation Administration)

Japan shall aim to enter "emerging space markets" which consists of mainly developing countries with high access potential, and commit to the development of technology of small sized satellite, needs of which are high in emerging space nations. It is important to build up actual performance by promoting satellite launches. In addition, in order to cope with the needs of emerging space nations, Japan shall establish a structure which enables to supply solutions comprehensively from manufacturing a satellite to launching service, providing data utilization service, supplying ground equipment to fostering manpower, etc.

Figure 3-2-1-91 Market scale and ownership of earth observation satellites



Note:Excluding military satellites. No weather satellite is included in the number of launched satellites between 2009~2018.
Source: *Satellite-Based Earth Observation, Market Prospects to 2018* (Euroconsult)

Table 3-2-1-92 Space industry sales top 10 ranking and sales scale of Japanese companies (2008)

Ranking	Company	Country	Space sector sales 2008(million dollars)
1	Lockheed Martin	USA	10,700
2	Boeing	USA	7,130
3	EADS Astrium	Europe	6,046
4	Northrop Grumman Corp	USA	5,805
5	Raytheon	USA	4,405

Ranking	Company	Country	Space sector sales 2008(million dollars)
6	Garmin Ltd.	USA	3,494
7	Thales Alenia Space	Europe	2,890
8	Computer Sciences Corp.	USA	1,970
8	United Space Alliance	USA	1,817
10	Alliant Techsystems Inc.	USA	1,485

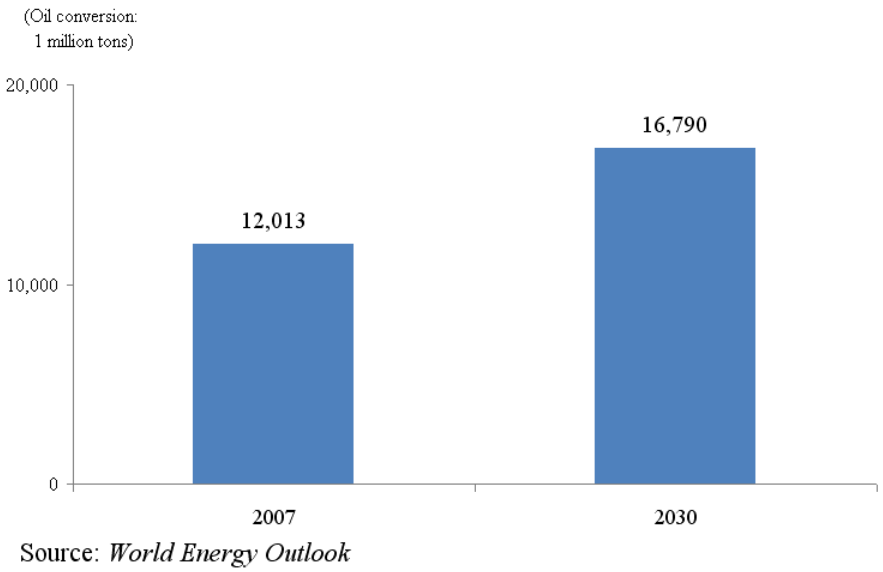
Ranking	Company
22	Mitsubishi Electric
29	Mitsubishi Heavy Industry
—	NEC
—	IHI(Ishikawajima Harima)

Source:*SPACE NEWS August 3, 2009* and questionnaire result on Japanese companies

(C) Japan, which takes a lead in environment/energy technology

Toward green house gas emission reduction worldwide, realization of a low carbon society is an immediate issue to be solved. On the other hand, many major countries have committed to the development of measures associated with the environment and energy. Japan is capable to contribute the world by making use of its high technology. For companies which possess excellent environmental energy technology, there is a large potential for business. There is a great need of Japan's excellent technology especially in emerging economies including China. It is important for Japan to take a lead in the world in the sector of the environment and energy technology, and deal with an issue with the world, including emerging economies. In addition, it is important to engage in global standardization of Japan's excellent environmental energy technology, and let it prevail. At the same time, toward a realization of a low carbon society world-wide, it is important to engage in a comprehensive measures such as providing cooperation on energy saving activities in Asia, where energy demand is expected to grow along with the economy growth, or technical cooperation with developed countries including USA.

Figure 3-2-1-93 World energy demand outlook

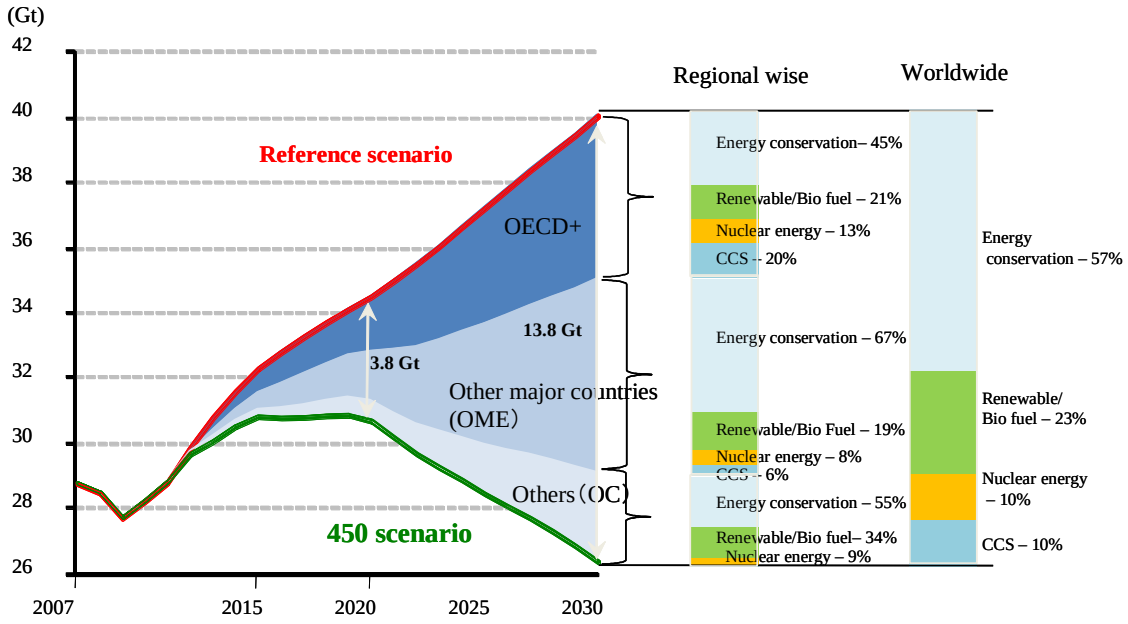


Source: *World Energy Outlook*

(a) Growing environmental related business market

According to the International Energy Association (IEA), the world's prime energy demand is expected to grow by approximately 1.4 times for the period of between 2007 and 2030 (Figure 3-2-1-93). World's carbon dioxide emission from energy sources is expected to increase greatly along with the demand. Approximately 90% of Japan's carbon dioxide emission is originated from energy. According to the 450ppm[82] scenario by IEA, of the reduction volume of 13.8Gt as shown in the reference scenario (natural phenomena case without special measure (BAU: Business as Usual) in 2030, 57% is by way of energy saving and 23% is by way of introduction of renewal energy (Figure 3-2-1-94). As pointed out thus far, efficiency enhancement for energy use and expansion of introduction of renewal energy are a great issue to be solved amid the speculation of expansion of energy demand and increment of carbon dioxide emission. Each country is making efforts in expanding environmental and energy saving related measures including economic measure after the world economy crisis and financial crisis (Figure 3-2-1-95). Owing to those measures, the environmental related business is activated worldwide, which draws an attention as a growing market in the world.

Figure 3-2-1-94 CO2 reduction categorized by region and energy type in 445ppm scenario



Source: *World Energy Outlook 2009* (IEA)

[82] The 450ppm scenario is a scenario designed up to the year 2020 in order to keep the temperature rise within 2°C. In this scenario, CO^2 emission volume in developed countries is to be reduced by 17% in 2020 compare to that of in 2007, and reduced by 41% in 2030 as a whole. At the same time, CO^2 emission volume worldwide is peaked out by 2020. Of the additional reduction volume which is necessary to make the 450ppm scenario realized, China takes up 30% and the U.S. takes up 20% in proportion, which indicates that both countries take up half of the world's total volume. Japan's reduction volume is only around 2 – 3% of them.

Table 3-2-1-95 Energy policies in major countries

1.USA

Item	President Obama's energy policies
1) Measures against climate change	•To reduce greenhouse effect gas emission by 80% by 2050 from 1990 level •All the emission allowance are allocated in auctions. Each year 15 billion dollars out of the auction revenue is invested in clean technologies.
2) Expansion of clean technology investment, creation of employment for 5 million people	•To commercialize plug-in hybrid cars, improve energy efficiency of renewable energy and other energies, 15 billion dollars is to be invested annually in low emission coal fired power generation, next generation bio fuel, transmission network, and ot
3) Improvement of car fuel efficiency	•To improve fuel efficiency standard by 4% annually while paying consideration to the burden of domestic car makers. •To expand investments in advanced car technologies or battery technologies. To let plug-in hybrid cars penetrate as many as the 1 million mark in 2015.
4) Introduction of national standard for low carbon fuels	•To expand utilization of advance bio fuel (60 billion gallons in 2030) •To introduce low carbon fuel standard, impose fuel suppliers to reduce carbon contents by 5% in 5 years and by 10% in 10 years taking into consideration of environmental sustainability.
5) Expansion of domestic energy supplies	•To increase oil and gas production in ways other than opening up protected area. •To expedite the Alaska gas PL construction plan.
6) Expansion of utilization of renewable electric power	•Now under consideration of renewable electric source ratio(10% of electric power in 2012 and 25% in 2025). •The federal government extended the tax reduction scheme on producers of renewable electric power aiming to boost renewal energy production.
7) Promotion of development of clean coal technology and penetration	•To provide investment incentives aiming at constructions of zero emission coal fired power plants. •DOE(The energy agency of America) aims to construct 5 coal fired power plants which adopt CCS technology in government-private sector partnership.
8) Safe and stable nuclear power generation	•In a state of union in 2010, President Obama stated that the America constructs clean nuclear power plants on the land of America from the viewpoint of creation of employment. •The budget for the Yucca Mountain plan will be cancelled. He is going to install an expert council and study comprehensively as to how the back-end policies of the U.S should be defined in budgetary, environmental, economic aspects, and conclude a r
9) To attain world top level energy efficiency	•To reduce electric power demand by 15% in 2020 from the figure in the DOE outlook by means of imposing electric business operators to reduce energy consumption or reinforcement of energy conservation standard. •To introduce energy efficiency standards for buildings by 2030, aiming at zero emission.
10) Investment in smart grid	•To install Transmission Network Modernized Committee, and support introduction of advance technology introduction such as smart grid, electric power storage, and others.

Source:Obama administration Homepage（http://www.whitehouse.gov/）, and others

2. China（Outline of the 11th 5-years plan）

Numerical target on energies（Excerpts from the Plan, Chapter 3）:	
Economic growth	GDP growth rate annual average 7.5% in the next 5 years The general assembly of 5 which was held in autumn 2005 raised the target to increase GNP by double in 2010 from the 2000 level. Later , it announced specific index values.
Energy standard denominator	To improve energy consumption per GNP by some 20% In the initial year（2006）, it targeted 4% improvement.

Energy related businesses - major points

Advancement of the energy industry（The plan, Part 3, Chapter 12）	
•"Orderly development of coals"	Large scale coal base constructions, coal mining reorganization, coal bed gas development, and others.
•"Positive development of electric power"	Advancement of fire power generation, positive development of nuclear energy, expansion of the West to East intercontinental electric power transmission project, and others
•"Acceleration of development of Petroleum gas	Joint development of overseas resources, construction of incoming LNG facility, expansion of national stockpile bases, construction of product transportation network across the nation (Oil transportation projects West to East and North to South） and the 2n
•"Reinforcement and development of renewable energy"	To improve proportion of renewable energy in primary energy consumption. >Wind power generation...Large scale projects of more than 100,000kW at 30 sites Formation of power generation base of as large as 1 million KW in inner Mongolia, Hebei
Construction of resource conservation oriented•Environmental friendly societies（The plan, Part 3, Chapter 22）	
• "Energy conservation"	To reduce energy intensive industries, to announce 10 projects on which energy conservation is emphasized, and others.
•"Reinforcement of policies and measures for energy conservation promotion"	To establish energy conservation indexes, to formulate guidelines, to weed out energy intensive systems, and others

Source: *The 11th Economic and National Development 5 Year Plan (2006 - 2010)* which was approved on 14 March 2006 in the National People

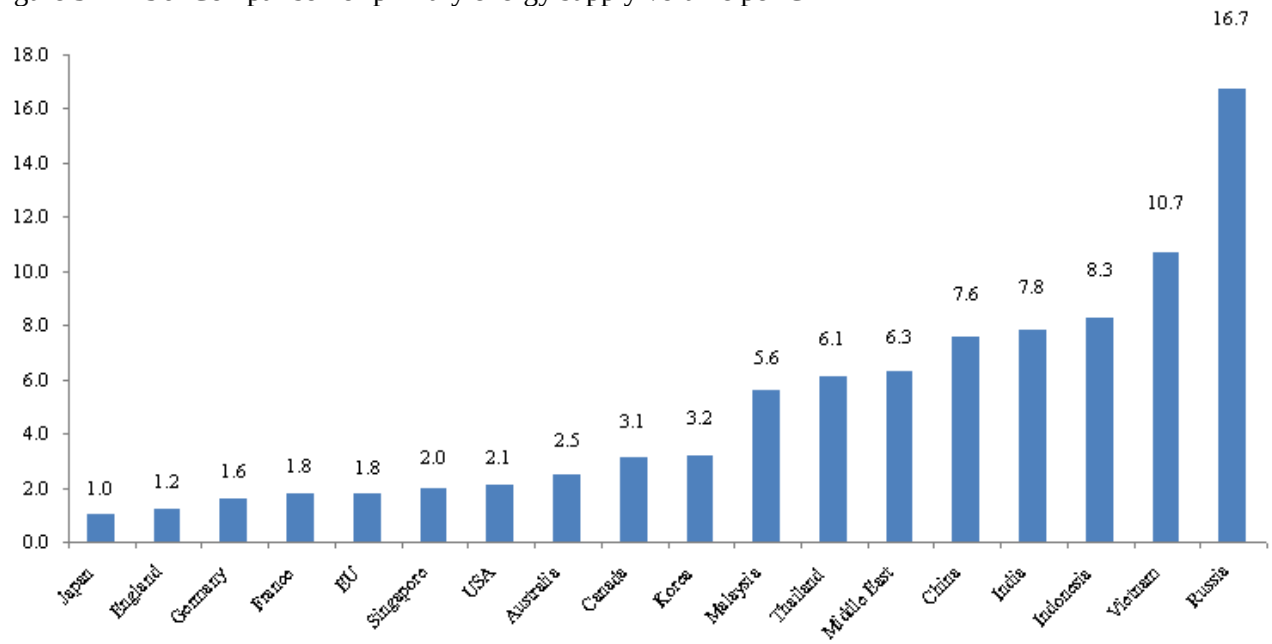
(b) Toward environmental energy nation

(i) Superiority of Japan, which leads the environmental technology

Japanese companies possesses products and technology related to the energy saving and renewable energy, which is the world's top standard. The supply volume of prime energy per GNP per unit is 7.6 / 1 of that of China's. which explains Japan boosts world's class efficiency (Figure 3-2-1-96).

In addition, with regard to technology of individual area, such as area of solar batteries, condensers, LEDs, inverter power semi conductor[83], Japan occupies a large proportion in the world's share (Figure 3-2-1-97). Japan also lead the world in energy saving technology (3-2-1-98), high efficiency coal-fired power generation such as Integrated Coal gasification Combined Cycle (IGCC)[84] or Carbon Dioxide Capture and Storage (CCS)[85] technology in term of efficiency of power generation, technology in carbon dioxide capture performance, etc.

Figure 3-2-1-96 Comparison of primary energy supply volume per GDP



Note:Each index was figured out in ratio to Japan as 1, after primary energy supply volume (TPES) was divided by GDP.
TPES/GDP=Primary energy overall supply volume/GDP. GDP was converted to US dollar based on the average exchange rate of 2000.
Source:*IEA Energy balance of OECD Countries(2009 edition)/Energy balance of Non-OECD Countries(2009 edition)*(confirmed value of 2007)

As pointed out thus far, Japan is the world's top in the technology of individual area in the environmental related sector. But in order to sustain the position as the world's leader in the energy saving and environmental sector, it is expected for Japan to establish a business model which includes after-service and systemization, not only technologies of individual areas, as stated herein-above. Expectation heightens that the environmental related technology is made use of in the infrastructure sector, demand of which is

[83] Inverter power semiconductor is a semiconductor element for power equipment with more improved breakdown voltage, current, speed and frequency oscillation compare with the conventional one. It is optimized for power conversion or control, and serves as a key device necessary for inverters or electric automobiles.

[84] IGCC is a highly efficient electric generation system with the combined cycle operation of steam turbine and gas turbine after it gasified coals. IGCC is said to enable coal-fired generation with the same CO^2 emission volume as in oil-fired thermal power generation. (Federation of Electric Power Companies' Web site: http://www.fepc.or.jp/future/technology/sekitangas/index.html)

[85] CCS is a technology, which separates and collects carbon dioxide from exhausted gas generated from large-scale emission sources such as thermal power generation, then stores or segregates them under the ground or under the sea for a long period of time so as to curb CO^2 emission to the air.

growing worldwide, as represented by smart gird (next generation transmission line), which is mentioned later. Hence, in such a situation, Japan is expected to make use of global standards strategically and make Japan's technology a business, which generates profit in the middle-long terms speculation (Figure 3-2-1-99).

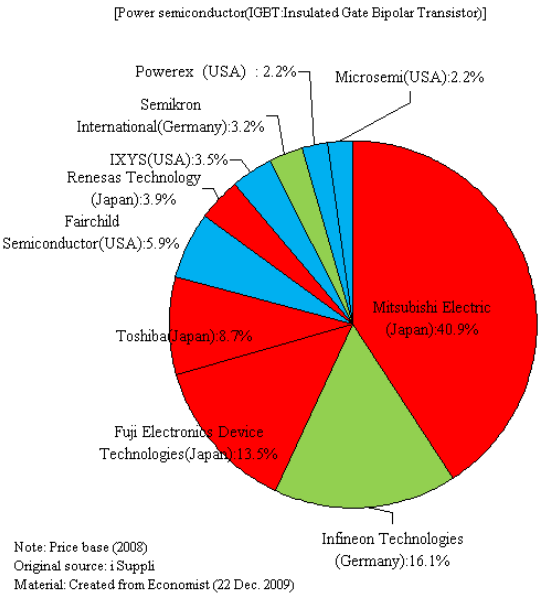
(ii) Commitment toward global standardization ~Example case of Smart gird (Next generation transmission line) ~

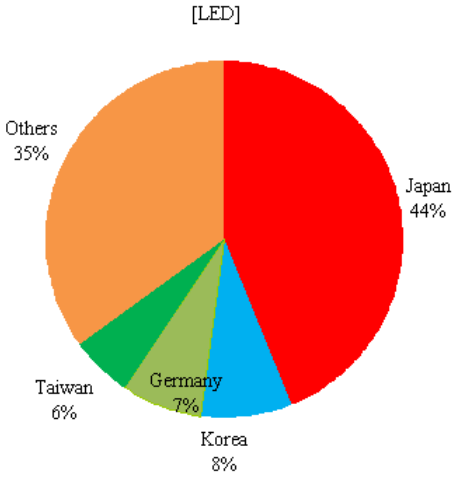
Smart grid is drawing an attention from the world toward an introduction of renewable energy. Smart grid enables stable energy supply while adjusting electric demand, by making use of information communication technology, in respond to introduction and expansion of renewal energy (Figure 3-2-1-100). The feature of electric power that was generated from renewal energy such as solar power or wind power is that the volume generated varies momentarily and is not available constantly. Amid the trend that renewal energy has been introduced in various countries, smart grid is drawing a great deal of attention in the world (Figure 3-2-1-101). Investment in smart grid related infrastructure is expected to increase in Europe and emerging economies including Asia , which will be a big business chance for Japanese companies, which possess excellent technology in the relevant field.

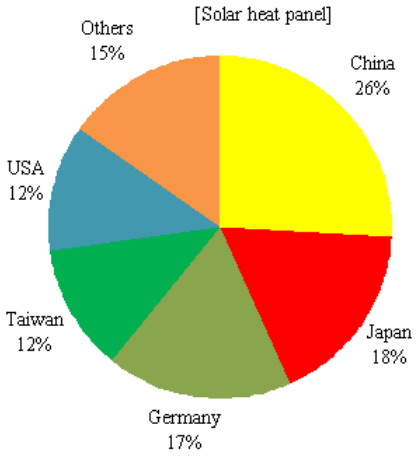
Wide range of companies from IT related companies such as IBM, Google, to environment and energy related ventures have entered in the smart grid field where business competition is intensified. It is necessary to promote strategic global standardization. Smart grid is a technology to become a core of the infrastructure maintenance associated with the environment, for example, urban community like eco-city. Smart grid also enables business development, which is integrated as system if global standardization was promoted strategically.

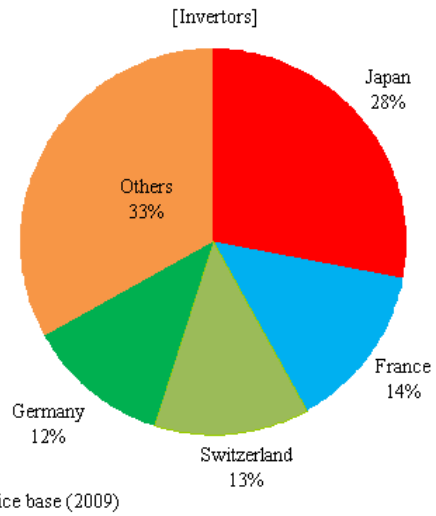
In such a circumstance, the Ministry of Economy, Trade and Industry has set up "Global standardization associated with next generation energy system study group" with the recognition that it is important to contribute in globalization of the relevant field positively and strategically. In January in 2010, the said study group compiled a report. In the report, it suggests to work out a road map as a comprehensive globalization strategy with regard to Smart grid (Figure 3-2-1-102) and identify important items that need to be globally standardized and mentioned the importance of collaboration with various countries (Figure 3-2-1-103). On the other hand, a study on next generation energy such as smart grid and social system has been held or considered to be held by study groups or workshops within the Ministry of Economy, Trade and Industry. Due to a need for a mutual collaboration between the relevant study groups in order to show a unified direction by reviewing comprehensively on the groups activities, "Next generation energy and social system council" was set up in November 2009. The interim report was released in January 2010. Based on which, "Smart community alliance" was established in April, 2010 as a parent body to study overall strategy toward market gain, after gathering wide range of business sectors and with the cooperation of government and private sector (Figure 3-2-1-104). Expectation heightens toward acceleration of overseas development, not only as individual technologies, but also as system.

Figure 3-2-1-97 Individual technology share in the new energy and energy conservation sector









[Lithium ion batteries]

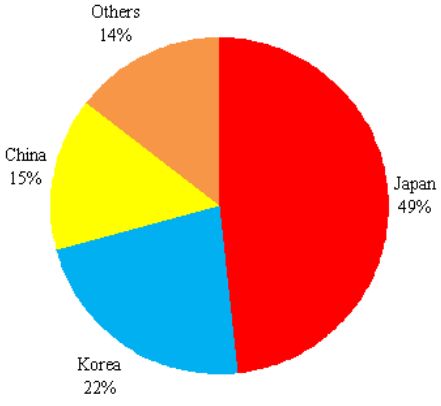
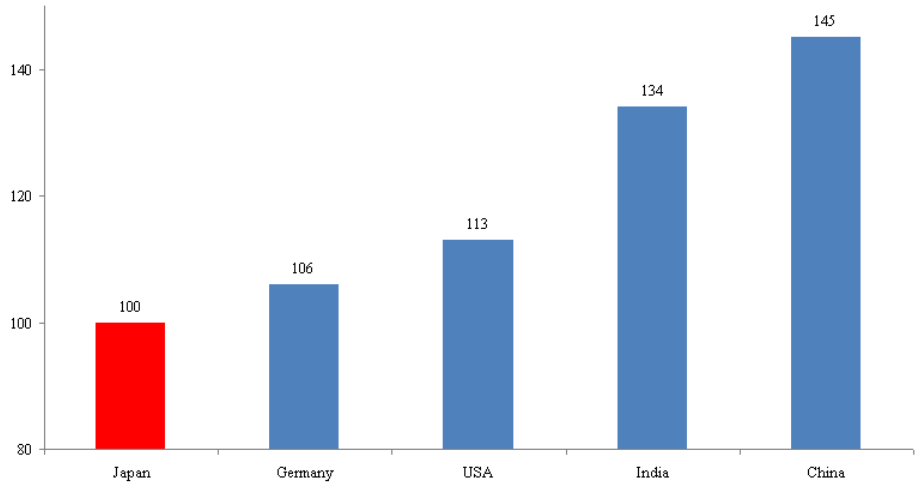
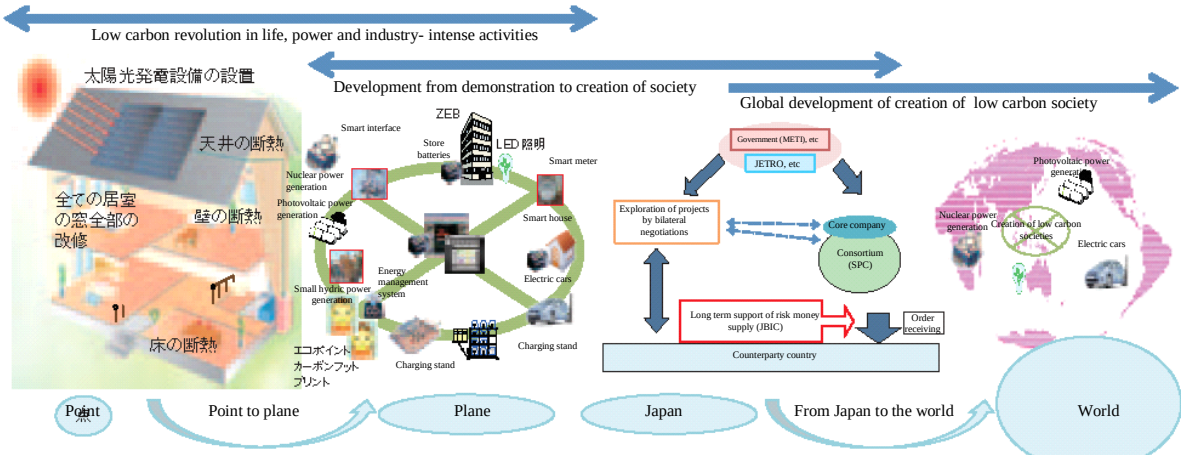


Figure 3-2-1-98 Comparison of energy indexes that are necessary to produce 1kWh of electric power by fire power generation



Original source: The Nippon Keidanren's Environment voluntary action plan(Global warming countermeasure) Summary of the follow-up result for 2008, which was created based on the material by ECOFYS (Nederlands)
Source: Japan's situation of recent energy policies and Japan's approach (Energy Agency)

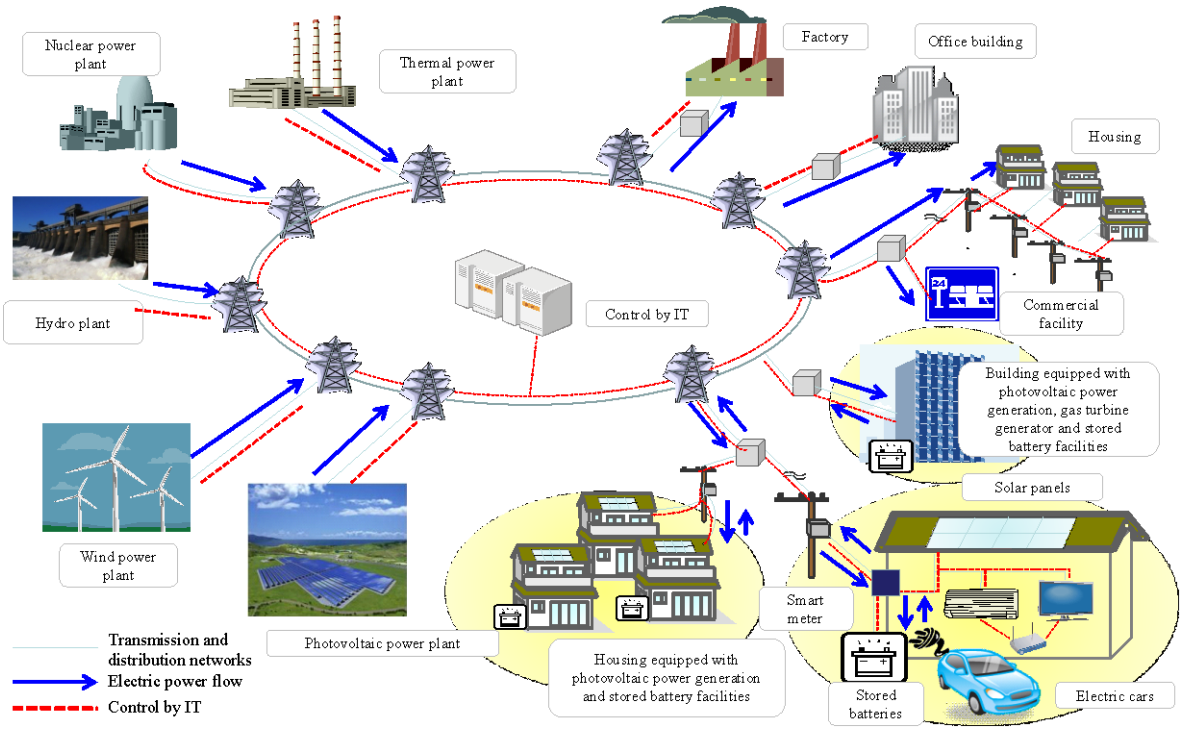
Figure 3-2-1-99 Green Innovation - Environment Energy Strategy



Installation of photovoltaic power generation equipment, insulation of ceilings, walls and floors, and renovation of every window in the rooms.

Source: *New growth strategy* (The Ministry of Industry, Trade and Economy)

Figure 3-2-1-100 Smart-grid conceptual diagram



Source: Global standardization of next generation energy system research council (The Ministry of Industry, Trade and Economy)

Figure 3-2-1-101 Commitment of each country in smart grid field

Commitment of USA

- Renewal energy introduction target (2025) is 25% of overall electric consumption (President Obama's election promise)
- Budget on smart grid:4.5 billion dollars
  - ✓ Introduction of smart meters, various demonstrations
- To promote global standardization of related equipment initiated by NIST(Bureau of Standards and Technology: 15 million dollars

Commitment of Germany <Outline of DESERTEC>

- Renewal energy introduction target (2020) is 18% of final energy consumption
- A mammoth project that electric power which was generated using wind or photovoltaic power generation in deserts in North Africa is transmitted to Europe or Middle East regions
  - ✓ Project target: To procure 15% of EU's electric supply of 2050
  - ✓ Project overall amount:400 billion euro
  - ✓ Participated in by 12 Germany companies (ABB, Siemens, Deutsche Bank AG and others)

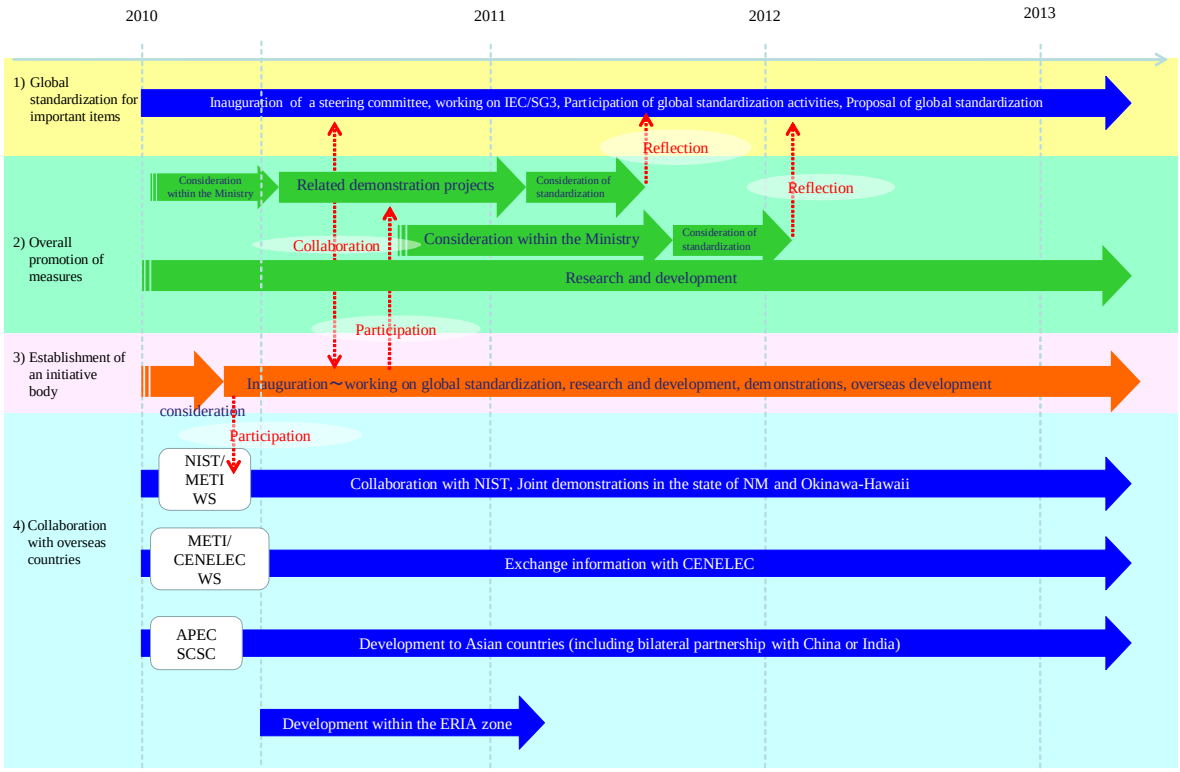
Commitment of Korea

- To formulate national strategy for Green Growth, to place smart grid on its emphasis sector
  - ✓ Target at one third of world market share
- Model project aiming at overseas development
  - ✓ Jeju Island 37 billion won (about 3 billion yen)
- To set up Korea smart grid association
  - ✓ LS Industrial systems, Korea Electric Power Corporation, LG Chemical, KT, and others

In major countries, government is involving in the smart grid development and global development with its initiative.

Source: The Ministry of Industry, Trade and Economy

Figure 3-2-1-102 Smart-grid global standardization roadmap



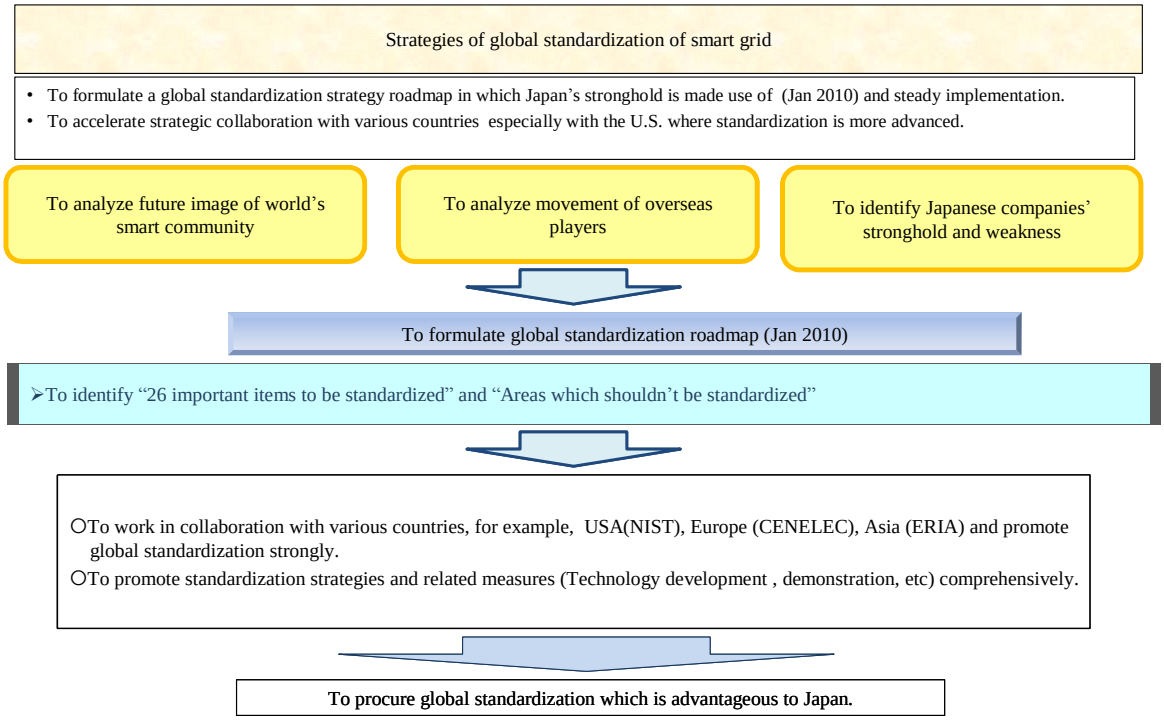
Source: The Ministry of Industry, Trade and Economy, Global standardization of next generation energy system – Research council

(c) Promotion of cooperation with various countries in the environment sector

Promotion of cooperation with various countries by making use of the environmental technology, which Japan boosts, means a contribution toward solving global issues such as a growing energy demand or global warming. But also it leads to a rise of new business demand in various countries. It becomes new source of Japan's economic growth as well (Figure 3-2-1-105).

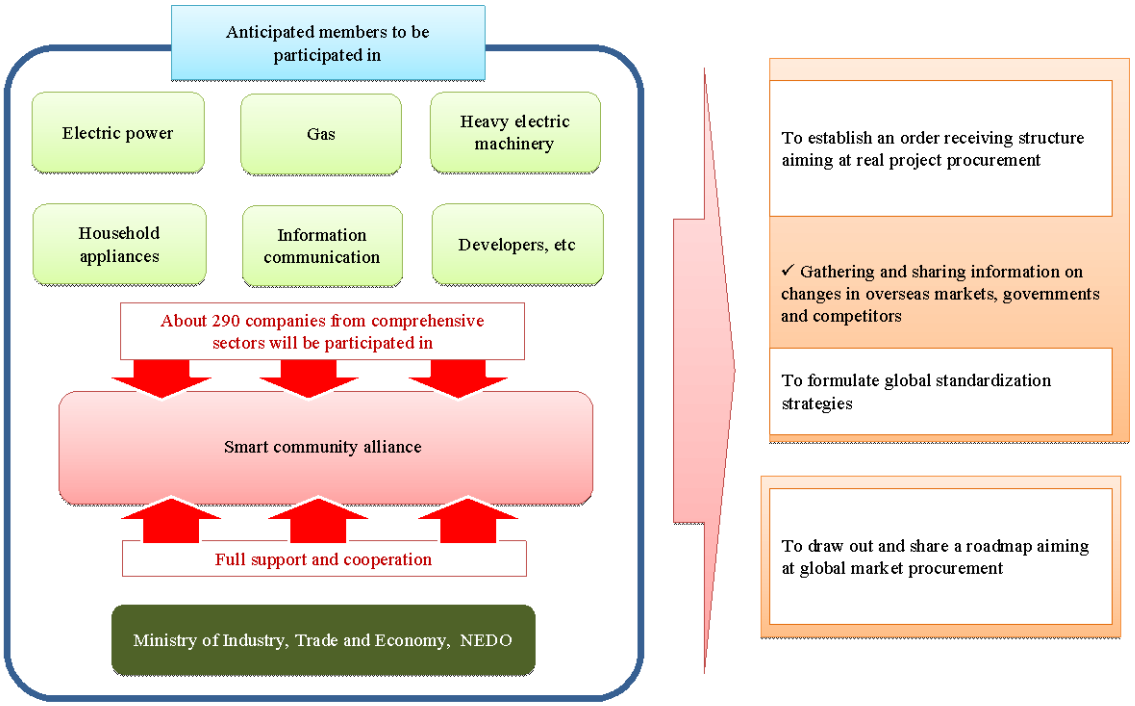
Promotion of cooperation is focused especially with the U.S, which places importance in an introduction of renewable energy through a utilization of smart grid especially as a measure for economic recovery, with EU, which intends to engage in technology development positively after said plan was established, and with Asia which shows rapid growth in energy demand along with the economic growth.

Figure 3-2-1-103 Collaboration with related organizations in various countries



Source: The Ministry of Industry, Trade and Economy

Figure 3-2-1-104 Outline of the smart community alliance



Source: *Next generation energy solution* (The Ministry of Industry, Trade and Economy, the 2nd industrial competitiveness sub committee)

(i) Promotion of international cooperation on the innovative environment and energy technology area ~Japan- U.S. clean energy technical cooperation ~

At Japan-US summit which was held in November, 2009, both leaders affirmed the intent of both nations and to expand their cooperative activities wider in research and development in clean energy technology to provide solution to the issues such as energy security and climate change. They announced initial areas for joint activities to strength their cooperation. Based on the agreement, the Ministry of Economy, Trade and Industry and US's department of energy announced the action plan. In specific, following areas are raised as cooperative work needs to be accelerated.

(Smart-grid technology)

It aims at the Japanese companies' global development though a participation of Japanese companies in a joint demonstration project on a large scale transmission and distribution network that is to be taken place in New Mexico, U.S. In addition, joint demonstration projects in Okinawa and Hawaii will be officiated. Also, through a strengthened cooperation with U.S. on global standardization, allow the entire system of smart grid technology to develop globally (Figure 3-2-1-1-106).

(Carbon dioxide capture and storage technology (CCS))

Conduct a joint research though the combination of Japan's forte: capture and storage technology using liquid chemical absorption and monitoring technology, and U.S.'s forte: development of a solid absorbent and long term simulation technology so as to reduce the cost on carbon dioxide segregation and capture storage activities or accelerate improvement of the safety on storage (Figure 3-2-1-107).

Figure 3-2-1-105 Activities for energy conservation international development

[Bilateral cooperation]

China	Japan-China Energy conservation • Environment comprehensive forum (May 2006, Sept 2007, Nov.2008, Nov.2009) Energy minister policy dialog (May 2007) Japan-China Energy conservation • Environment business promotion model project Japan-China Energy conservation • Environment cooperation consultation center Energy conservation human resources development cooperation framework, and others
India	Japan-India Energy forum (Dec. 2006, Feb. 2008, Feb 2010) Japan –India Energy dialog (April and July 2007, Sept 2008) and others

[Multilateral cooperation]

◆ **IPEEC (International Cooperation Energy Partnership):**
○ **In the Aomori G8+3(China, India, Korea) Energy minister meeting conducted in Aug.2006, Japan led discussion. In the Italy G8+3 Energy minister meeting of May 2009, with the initiative of G8+3, a framework was established to share energy policies (Currently, G8, China, India, Korea, Brazil, Mexico, EU). Japan proposed Energy Manager Network Project (EMAK) to promote energy conservation in the industry sector., and currently promoting it.**

◆ **IRENA(International Renewable Energy Agency):**
○ **This is an international cooperation framework to support penetration of renewable energy in the member countries. Up to now, 141 countries including Japan, USA, Germany, UAE, India signed the IRENA charter.(of G8, Russia and Canada are excluded).**

◆ **APP(Asia Pacific partnership):**
○ **This is a regional cooperation partnership participated in by government and private sector in Japan, USA, India, Korea, Australia and Canada. A task force was established in 8 sectors, and promotes essential emission reduction. Japan is conducting life evaluation of FS and photovoltaic power generation system aiming at a demonstration of micro grid in the renewable energy and distributed electric power.**

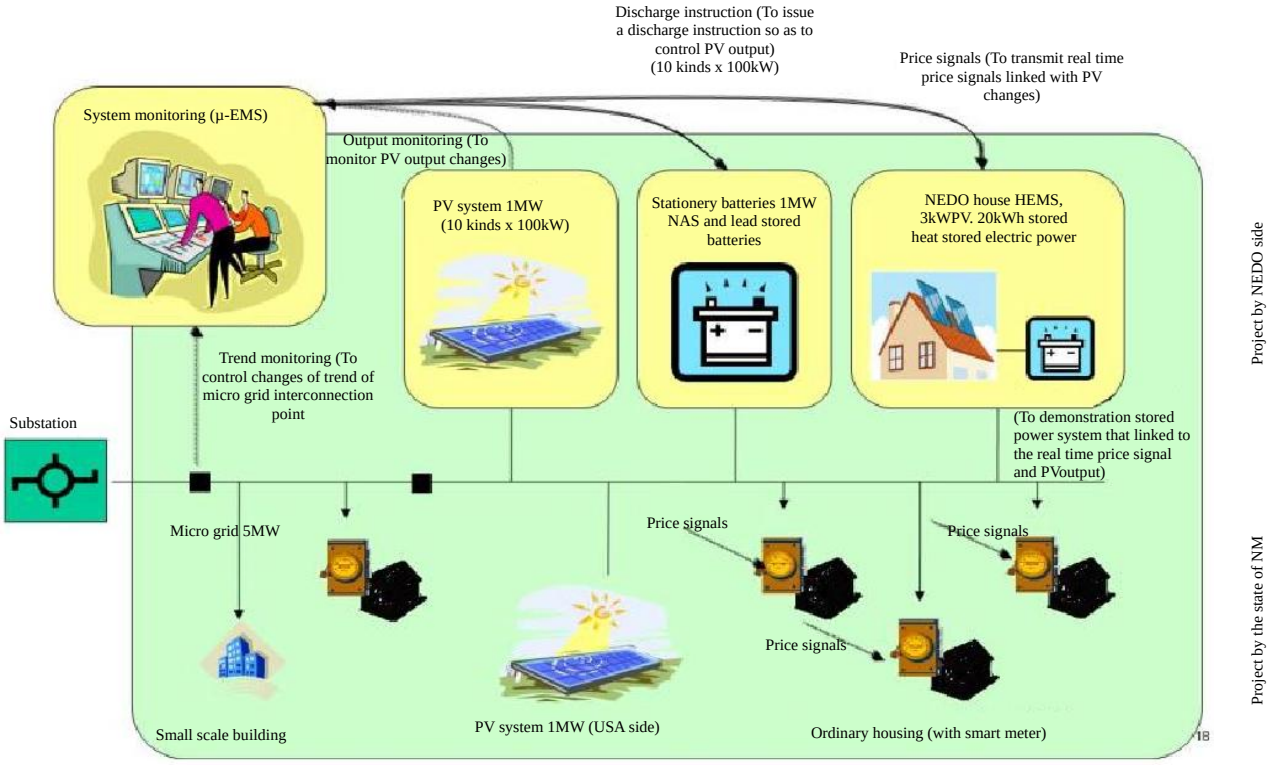
◆ **APEC(Asia Pacific Economic Cooperation):**
○ **In an Australia Energy minister meeting in 2007, Japan proposed that each country formulate an energy conservation target activity plan.**
○ **In 2010 when Japan chairs APRC meeting, the accomplishment of the activities thereof will be presented in the ministerial meeting.**

◆ **East Asia Ministerial meeting:**
○ **Japan took an initiative in the Ministerial meeting held in Jan. 2007 and had each country agreed to formulate an energy target activity plan.**
○ **In the energy minister meeting in July 2009, many countries submitted the plan, owing to Japan's international cooperation to develop human resources.**

◆ **Asia Energy producing and consuming countries ministerial meeting:**
○ **In the 3rd meeting which was held in April 2009, Japan agreed to accept as many as 2,000 trainees in three years in the energy sector including energy conservation and new energy fields. Japan also dispatched missions which consist of government and private sector to Saudi Arabia, Qatar, and UAE (Jan 2010).**

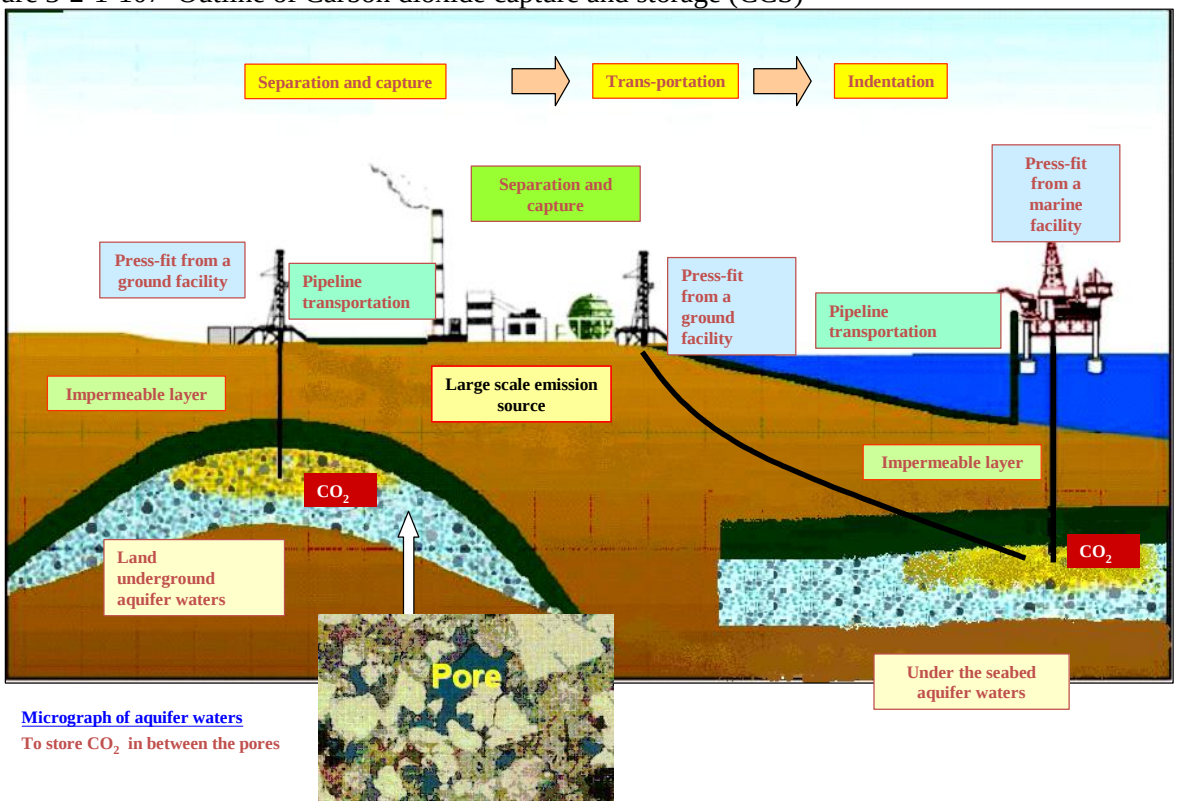
Source: The ministry of Industry, Trade and Economy

Figure 3-2-1-106 Joint Japan/US Smart Grid Project (Los Alamos)



Source:*NEDO Overseas report No.1054, 2009.11.4*

Figure 3-2-1-107 Outline of Carbon dioxide capture and storage (CCS)



Source: *CCS2020* (The Ministry of Industry, Trade and Economy)

(Nuclear energy technology)

Acceleration of cooperative research and development on fast reactor or advanced fuel cycle technologies, seismic technology, etc.

(Acceleration of research and development, and demonstration experiment between National laboratories)

Hold a forum for researchers' interaction and joint-research at the Industrial research institute of Japan and research center under the umbrella of the Department of Energy in U.S.

(Energy saving activities)

Cooperation on demonstration projects on energy efficient building (ZEB: Net zero energy building) or development of standards and demonstration project for next generation vehicles

(ii) Promotion of international cooperation on the innovative environmental and energy technology area ~Japan- UE energy technology development ~

Minister of Economy, Trade and Industry and EC Commissioner for Research Administration commissioner held a talk in June 2008. Both parties have been aware of their importance of developing an innovative energy technology to curb the climate change and ensure energy security, and agreed to promote cooperation in research and development of an innovative technology in the energy area. In March 2009, the Ministry of Economy, Trade and Industry of Japan and European Commission Directorate General for

Research held the Japan-EU workshop on energy technology development in collaboration with NEDO. Topics for cooperation are as follows,

(Photovoltaic)

-Concentration photovoltaic and ultra-high-efficiency solar-cell modules

-Intermediate band solar cell and quantum dot technology

-Very efficient multi-junction thin film solar cells

(Power storage)

-Testing and evaluation method for lifetime performance and safety (including standardization)

-Pre-competitive next generation battery technology (Including material research)

-Integration of storage on the grid

(Carbon Dioxide Capture and Storage (CCS))

-Safety of transport and storage of CO2

-Public perception

-Standardization and harmonization

In a meeting held in October 2009, the both parties affirmed the state of the progress of the cooperative activities discussed in the previous meeting, at the same time, agreed to develop an agreement in order to promote development and implementation of cooperative activities between Japan and EU. In addition, both parties agreed to discuss on integrated cooperation between the three parties (Japan-US-EU) in the future base on the cooperation between Japan-US, which will exchange information on energy technology cooperation with emerging economies and developing countries.

(iii) Environmental technology cooperation on energy saving in Asia ~Japan-China energy saving environmental forum~

In order to promote cooperation on energy saving and environment, the Japan-China energy saving forum has been held since 2006. It has exchanged information on the comprehensive area such as government policy, experience, technology, etc with regard to energy saving and environment. The 4th Japan-China Energy Saving and Environmental Forum was held in November 2009 in Beijing. Total of more than 1000 people of government officials, business representatives to academics from both Japan and China were participated in, which indicated that concerns toward energy saving and environmental business is heightening (Figure 3-2-1-108).

Scope and approach of cooperation have developed from the stage of mutual understanding toward low carbon society such as energy saving promotion, recycling city cooperation, to practical cooperation through the development of local towns. Though the expansion of energy saving cooperation and environmental cooperation, or interaction with Chinese local government and companies, or business matching, Japanese companies will capture a business opportunity and deepened cooperation between Japan-China in the energy saving and environmental field.

Table 3-2-1-108 Outline of the 4th Japan-China Energy conservation / Environment comprehensive forum

Date	8th November 2009 (Sunday)
Venue	Beijing "The people's great hall"
Host	Japan: MITE, Japan-China Economic Association China: National Development and Reform Commission, Ministry of Commerce
Participants	More than 1,000 people from both Japan and China
Attended by	Japan: The Minister of Industry, Trade and Economy Naoshima, Vice president of Japan-China Economic Association Mimura and others China: State Council Deputy Prime Minister Lee Kegiang, the National Development and Reform Commission deputy chief Jie Zhenhua, Vice Minister of Commerce Chen Jian
Agenda	Before noon:Plenary (keynote speech, energy policy joint research report, exchanging the document signed) Afternoon:7 sectoral meetings (Top Runner Program / Circular Economy / Desalination Water Treatment / Automotive / Coal Power Generation / Chemical / Long Term Trade Consultative Committee)
Regional development	Business matching performed in nine cities and on seven courses such as Chongqing, Tianjin, Tangshan

Source: The Ministry of Industry, Trade and Economy

Column 36 Tianjin eco city

Tianjin eco city is an environment friendly town, the construction of which was inaugurated in 2008. Chinese government teamed up with Singapore government, aims at building a model city, which attains both environmental and economical growth, in which know-how of Singapore on community building such as public housing development is going to be applied.

Originally, Kitakyushu eco town in Japan is modeled for Tianjin eco city, in which environment industry such as recycle industry is converged. However, this eco city is different, as Kitakyushu eco town accommodates mainly industrial facilities. Tianjin eco city aims to accommodate settlement, as in the premise, but also aims at financial, trading or service business such as tourism get clustered. Beside R&D facilities related to environmental technology, the eco city plans to have anime/comic industry converged in it and foster new industry other than manufacturing business, which China has been promoting so far.

With regard to building an urban community, 22 target indexes are raised (Column Figure 36-2) such as renewable energy usage 20% and more, green building ratio making use of solar energy or terrestrial heat 100% (Standard of green building is in the making).

From Japan, a sink tank is participating in this project for preparation of a plan for achievement of renewable energy usage target, and Japan's financial institution was appointed as a partner for luring investors.

China is planning to develop more than 200 environmental model communities similar to this one in China in the future. On the part of Japan, it is expected to be involved in such a project making use of excellent environmental technology positively.

Column 36-1 Tianjin eco city

Column 36-2 23 targets in the development of Tianjin eco city

Classification		Item	Index value	Execution period
Ecology	Natural environment	Quality of air	Days to achieve the second standard: 310 days/year or more	Immediately
			Days to achieve first class standard for SO2 and NOX: 155 days/year or more	Immediately
			Ambient air quality standard GB 3095-1996 achievement	2013
		Quality of water on the land surface	Environmental quality standard for surface water GB3838-2002 existing standard IV group water quality achievement	2020
		Drinking water standard achievement ratio	100%	Immediately
		Noise standard achievement ratio	100%	Immediately
		CO2 emission per GDP	150tc/$ million	Immediately
		Net loss of natural wetlands	0%	Immediately
	Harmony in environment	Green building ratio	100%	Immediately
		Indigenous vegetation index	0.7 or higher	Immediately
		Public green area per capital	12m2/person or higher	2013
Harmony in society	Life & health	Daily life water per capita	120l/person a day or less	2013
		Garbage generation volume per capita	0.8kg/person a day or less	2013
		Green transportation ratio	30% or higher	2013
			90% or higher	2020
	Infrastructure	Garbage collection utilization ratio	60% or higher	2013
		Ratio of availability of free sport facility within 500 meter radius (Access on foot)	100%	2013
		Ratio to process hazardous waste and household waste harmless	100%	Immediately
		Ratio of barrier-free facility	100%	Immediately
		Popularization ratio of pipe under city-administration	100%	2013
	Others	Affordable housing ratio (including rental housing)	20% or higher	2013
Economy development	Economic development	Renewable energy utilization ratio	20% or higher	2020
		New water source utilization ratio	50% and less	2020
	Technology innovation	Number of engineers per 10,000 workers	50 people or more	2020
	Others	Ratio of worker housing	50% or higher	2013

Column 37 Gain global standard on ultra high voltage transmission line (UHV)[86]

As a strategic tool, importance of global standardization is heightening along with the progress of globalization of economies. As for institutions that are typical of global standardization development bodies, there are International standards organization (ISO), International electro technical commission (IEC), International telecommunication union (ITU) and so on. One nation has one institution (= 1 vote) for one standard. European nations have a great advantage in vote getting as Europe shares the borders with many countries. Unlike Europe, Japan was always defeated in globalization competitions albeit it is strong in technologies. Despite such a condition, Japan's technology gained standardization status in the ultra high voltage transmission line (UHV) in May 2009.

The ultra high voltage (UHV) technology has been standardized under IEC. 1200kV UHV was first proposed by U.S. and then-Russia in 1977, and after that, 1050kV voltage was proposed by Italy in 1997, both of which got approved as standard voltage, disregard of its unestablished technology. Since then, there was no case of application of those voltages.

In such a situation, a Japanese team consists of 4 companies, namely, Tokyo electric power company, Toshiba, Mitsubishi electronic and Nihon AE power systems took 30 years to materialize 1100kV voltage transmission line technology, and aimed for global standardization for it.

Recently, the Japan team disclosed the UHV test equipment that was finally completed, to specialists in Germany or Sweden, which possesses competitive technology so as to appeal Japan's technology. Taking advantage of China's influential power for their size of the market, Japan team had China convince Europe to vote for the Japan's technology, as their strategy. China had already determined to introduce Japan's 1100kV UHV technology by then. Eventually in May 2009, Japan's 1100kV won the majority, and got approved as global standard.

The UHV technology is able to transmit power, which is approximately 3 – 4 times faster than the conventional 550kV transmission line does, which is used currently In Japan, and reduction of transmission loss can be attained. Therefore, it is expected that UHV technology will be strength for Japanese companies in electric power infrastructure markets such as China or India, which own vast land. With this achievement as a turning point, it is necessary to work on development of globalization in the all-Japan system with collaboration of public-private sector, such as standardization of smart gird in which makes use Japan's UHV technology, so as not to be defeated by the rule even won in the technology.

[86] Transmission of more than 275,000volts is called UHV. When transmitting power, higher the voltage is, lesser electric damages occur. (Tokyo electric power company Web site: http://www.tepco.co.jp/corp-com/elect-dict/)

Column 38 Japanese company which leads environmental technology

Fumin Co., Ltd. in Fukushima city developed a glass coating technology, which enables reduction of CO2 emission without using energy.

The conventional energy-saving glasses have poor transparency or reflects heat thermic rays from the sun. In urban areas surrounded by buildings, they would cause light pollution due to the reflected rays or reflected heat or heat island phenomena.

Fumin coating is a coating technology with which glasses absorb heat and UV from the sun, instead of reflecting them. The reflection ratio for the conventional glasses mark 8%, but when Fumin coating is applied on glasses, the reflection ratio reduced to 6%, without causing light pollution nor heat island phenomena. This coating enables to lower the room temperature by approximately 2°C without changing the brightness of the room.

The company developed a method to apply the coating as well, using a store-bought spray gun, which can be done easily by anyone. It can apply on existing buildings, factory-made glasses, super huge glasses or curved glasses. In 2007, Fumin coating was patented. In 2008, it was patented in Singapore. At present, Patents were filed in 10 countries such as U.S., EU, China, and India.

According to the company, when the company exhibited Fumin coating in BEX (Build Exo Xpo) Asia 2009 organized by Singapore government, they received an offer at the venue by a previous minister of Omar that he wishes to become an agent for Fumin coating. Also a minister of Brunei requested them for a construction work of his own house. There is an award system called BCA Green Mark "Platinum Award" for energy saving buildings, which is established by Singapore government. One of the criteria for the award is whether Fumin coating glass was used or not.

Column 39 Overseas development of Environmental cluster

The ministry of Economic, Trade and Industry has taken an initiative and worked on "Industrial Cluster Project", in an attempt to form an industrial cluster (It is an attempt to induce new business sectors to appear in an extensive area after the area gets clustered with a particular sector of business which has competitive advantage, which will play a core role in the area) in the sector of IT, bio, environment and manufacturing with the network of industry-academia-government collaboration in the area as a base, aiming at a creation of new business and new industry with global competitiveness.

Of the industry clusters that have appeared so far, overseas development of "Environment cluster", which consist of mainly environment industry, draws an attention lately.

Although Japan's environmental technology is excellent, it is already in the matured stage for the domestic market. On the other hand, Asia region including China is changing their stance from economic growth first to achievement in both economic advancement and environmental measures. And the market of the environment industries is booming. Hence, it is expected to be a big business chance for Japanese companies of not only big companies but also middle and small-sized companies.

However, middle and small-sized companies have not enough management resources to cope with the following issues, 1) Lack of continuous information on matching needs and seeds. 2) Lack of transparency in administrative procedure in the local country or lack of information on the subsidy system, etc 3) Sourcing for a reliable local company as a partner 4) Difference in commercial practice such as intellectual property right, etc. Hence, the real situation is that there is no big advancement in overseas development after all.

In the middle of such a situation, there is an environment cluster, in which local middle and small-sized companies working in collaboration on mitigation of the risk of overseas development, and maintenance of the environment for sales channel exploration. For example, K-RIP (Kyushu Environment and Recycle Interaction Plaza), base of the activities is in the entire Kyushu, sought cooperation to the External Trade Organization and promoting an exchange program with Liaoning, China. They are committed to enriching the support system. For example, they placed a coordinator in China and Japan, and hold business negotiations. In February 2009, it entered into International agreement (herein-below called MOU).

In addition, TAMA association (Tokyo metropolitan industry activation association) activities of which are based in Tama area spanning Saitama, Tokyo and Kanagawa prefecture, with the concept that China business by middle and small-sized companies needs a reliable local partner, established Shanghai Middle and Small-Sized Companies Industrial Creation Research Group in 2008, and conducted investigation or business negotiations. In 2008, it held a business talk forum in collaboration with Shanghai Industry and Commerce Association. 8 Japanese companies were participated and 64 cases of business were discussed. Later, it entered into MOU agreement with the said association. Then, it installed an office in Shanghai, so as to enhance local support system. Outcome of their commitment toward activating international exchange as above just starts to surface.

Beside above cases, there are similar groups, which work on overseas development in other areas such as Kinki or Shikoku region, and the best practice such as the above is prevailing and expanding in various places.