

Regionalism and Business

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Introduction

There are plenty of economic forecasts suggesting that regional economic integration will bring about positive economic gains to its participants. Tsutsumi and Kiyota (2002), for example, estimate that Japan's cumulative GDP growth rate during the period from 1995 to 2010 will rise by 0.07 percentage point if the Economic Partnership Agreement (EPA) between Japan and Singapore is realized, and will rise by 1.02 percentage point if Japan, South Korea, China, Hong Kong, Singapore, Malaysia, Thailand, Indonesia and the Philippines will join the Free Trade Agreement (FTA). According to their estimation, no country or region except for Hong Kong will suffer a negative impact on its GDP by joining the FTA or EPA. Why, then, the development of regional economic integration between Japan and Asian countries seems so slow?

The reason for the reluctance on the Japanese side is obvious; Japan's agriculture will be negatively affected by regional economic integration with Asian countries which generally have more competitive agriculture than that of Japan's. Even though the loss of production in agriculture by regional integration will be more than compensated by gains in other sectors, Japanese farmers resist suffering such loss. In more generalized terms, the adjustment cost among the producers consists a stumbling block to regional economic integration albeit the mutual gains of the participants' national economies. Therefore, we can infer that not only the participant countries' national interests but also the interests of the relevant producers, especially the politically powerful ones, will have a major impact on the success/failure and the contents of regional economic integration. The case of European economic integration supports this point. According to Sandholtz and Zysman (1989), European business firms supported European integration in order to face the rise of Japanese industry. After the failure of the policy by European countries to develop national champions in electronics and telecommunications industries during the 1970s, European firms across national borders moved towards collaboration in order to take advantage of scale economy. One example of such collaboration is the European Strategic Programme for Research and Development in Information Technology (ESPRIT), initiated by twelve European electronics firms. In the background of European economic integration there were spontaneous movements for collaboration among European firms. The reason that the European electronics firms aimed for collaboration was that they had a common

interest in coping with the rise of Japanese electronics industry.

Such spontaneous movements among private enterprises across national borders are lacking in East Asia. Private enterprises in Japan, for example, do support East Asian regional economic integration, but they have never tried to join hands with Korean, Chinese, nor with ASEAN enterprises to influence governments. The reason for the contrast of business firms' attitude towards regional integration between Europe and East Asia can be attributed to the difference in the distribution of interests among firms of different countries. Japanese electronics firms, for example, share many common interests among them, but they share little with Korean, Chinese and ASEAN electronics firms.

More than ten years have passed since European integration. Has the attempt to reverse the trend of declining Europe and rising Japan born fruit? At least in one sector there was a clear trend of Europe's rise and Japan's decline: the mobile telecommunications hardware industry.

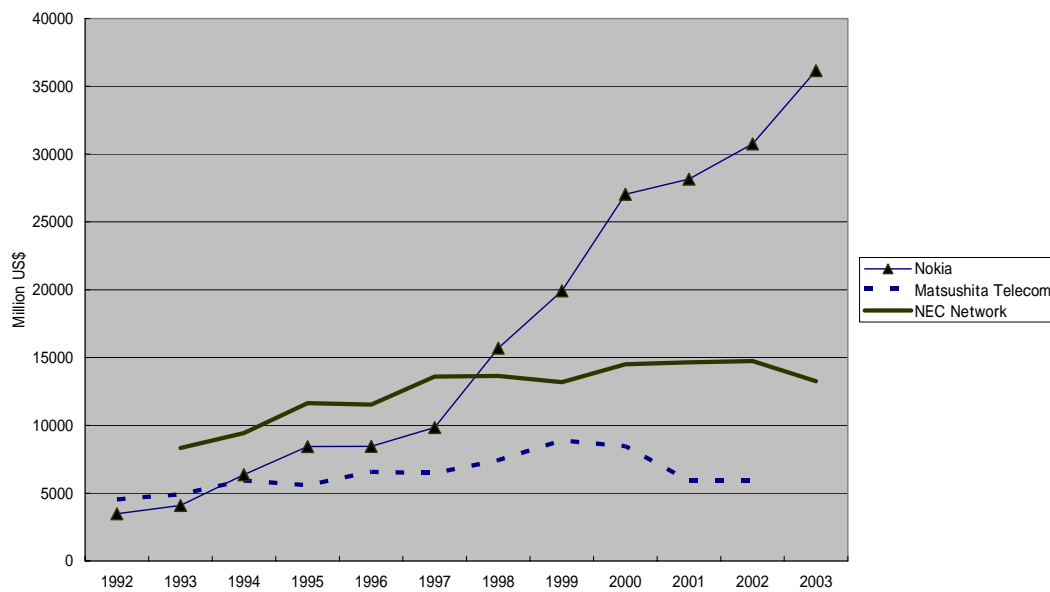
In this paper, we will discuss how the distribution of producers' interests among relevant countries will affect the formation of regional economic integration by examining the mobile telecommunications hardware sector.

The Rise and Fall of Mobile Phone Industry in Japan and Europe

Japan is not a latecomer in mobile telecommunications. In fact, mobile phone services started earlier in Japan (1979) than Europe (1981 in Nordic countries) and the United States (1984). Although having more experience in the industry, Japanese mobile telecommunications hardware vendors (including mobile phone handsets and base stations) have been lagging behind European competitors since the latter half of 1990s, and have even been taken over by Korea's Samsung, a latecomer in the industry. Fig. 1 shows the changes of the sales of Nokia, the world's largest mobile phone vendor, NEC Network and Matsushita Telecommunications, the top two mobile phone vendors of Japan: Nokia's lead over NEC and Matsushita is opening wider and wider since 1998. Table 1 shows the market share of various firms in the world mobile phone market. Japanese mobile phone vendors' shares are stagnating around two to five percent. Their shares are correlated with the relative size of Japanese mobile phone market in the world, because Japanese mobile phone market is virtually dominated by Japanese vendors and the Japanese vendors sell few mobile phone handsets outside of Japan. Domestic sales of Matsushita Communications, for example, account for 73 percent of its total sales, which stands in sharp contrast with the case of Nokia, which sells only

1.1 percent of its total sales in their homeland, Finland. Japanese vendors have little presence even in East Asia, where they have enjoyed high reputation and high market share in consumer electronics in the past. In the Chinese market, six Japanese mobile phone vendors have established plants catering for the domestic market, but none of them appear in the top ten mobile phone vendor ranking (Table 2). They not only lag behind the European, American and Korean vendors but also the Chinese ones.

Figure 1 The Sales Amount of Nokia, Matsushita Telecom and NEC Network



(Source) Annual Reports of the Firms

Table 1 Market shares of major vendors in the world mobile phone market

	1996	1997	1998	1999	2001	2003
Nokia	20.4	19.1	22.4	26.9	36.0	33.6
Motorola	26.0	23.5	19.8	16.9	11.0	14.1
Samsung					5.0	9.9
Ericsson	12.3	14.8	14.6	10.5	7.0	9.0
Siemens						8.5
LG Electronics						5.2
Matsushita		6.0	8.2		5.0	
Mitsubishi Electric					4.0	
NEC					4.0	
Arcatel		2.4	4.3		3.0	
Kyosera					2.0	
Others	41.3	42.6	43.2	45.7	16.0	28.6
Base	Units	Units	Units	Units	Units	Units
World Production	66000000	107810000	162850000	284000000	374040000	533356522
Source	3	1	1	3	2	4

(Source)

- 1 Nikkei Sangyo Shinbun Feb 10, 1999
- 2 Nikkei Market Access Yearbook, IT Basic Data
- 3 Nokia, Sekai saidai no keitai denwa meka
- 4 IDC Press release

Table 2 Market share of Top ten vendors in China's mobile phone market

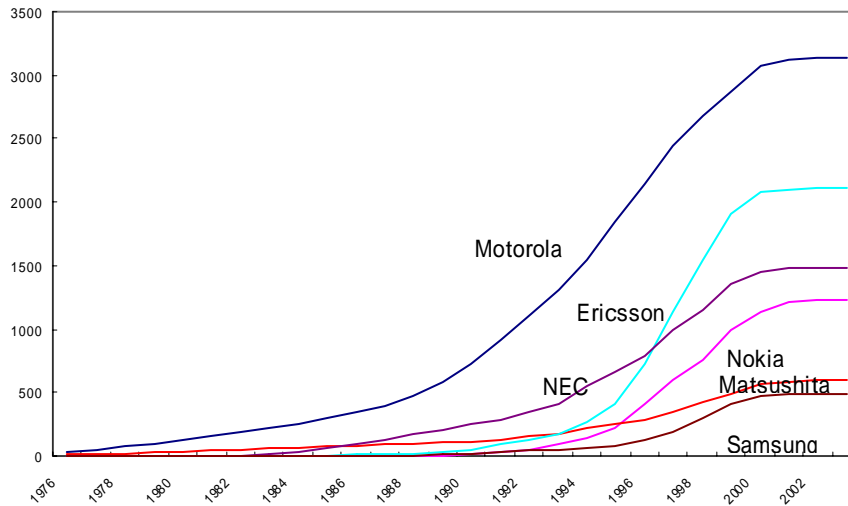
Vendor	Market share (%)
Nokia	17.0
Motorola	14.8
Samsung	8.3
Bird	7.8
TCL	6.8
Amoi	4.6
Konka	3.9
SonyEricsson	3.9
DBTEL	3.7
Philips	2.8

(Source) Kimura (2005)

The small presence of Japanese mobile phone vendors outside of Japan cannot be attributed to their technological weakness. In fact, Japanese vendors were leading ahead of Nokia, Ericsson and Samsung at least until 1995 in developing mobile phone technology. Fig. 2 shows the cumulative number of patents related to telecommunications acquired in the United States by Matsushita, NEC, and other world's leading mobile phone vendors. As it is usual for vendors to acquire patents

mainly in their home grounds, it is natural that US-based Motorola has always been the leading patent holder. For Japanese, Korean, and European vendors the US market is a foreign market, hence the number of patents in the United States may reveal their relative technological capabilities.

Figure 2 Cumulative Number of Patents Acquired in United States



NEC had more patents than Ericsson until 1996, and Matsushita had more patents than Nokia until 1995. Both NEC and Matsushita had more patents than Samsung as of 2003. These facts suggest that NEC and Matsushita were leading European vendors until 1995 in mobile communications technology, but they have been taken over by the Europeans, and caught up by Samsung since then. The relative decline of NEC and Matsushita is not the reason but rather the result of their decline in the US market.

The Impact of Mobile Phone Standards

If not the technological capability, then what brought about the rise of the European vendors and the fall of Japanese vendors in world mobile phone market? The most plausible answer to this question is the success and failure of mobile phone standards that originate in Europe and Japan. Funk (1998) argues that the market shares of the vendors of mobile phone terminals, base stations and infrastructures are influenced by the success/failure of the mobile phone standards that originate in the vendors' home country. Hence, when AMPS and TACS, standards which originate in the United States, had the largest number of mobile phone subscribers in the world, Motorola was the

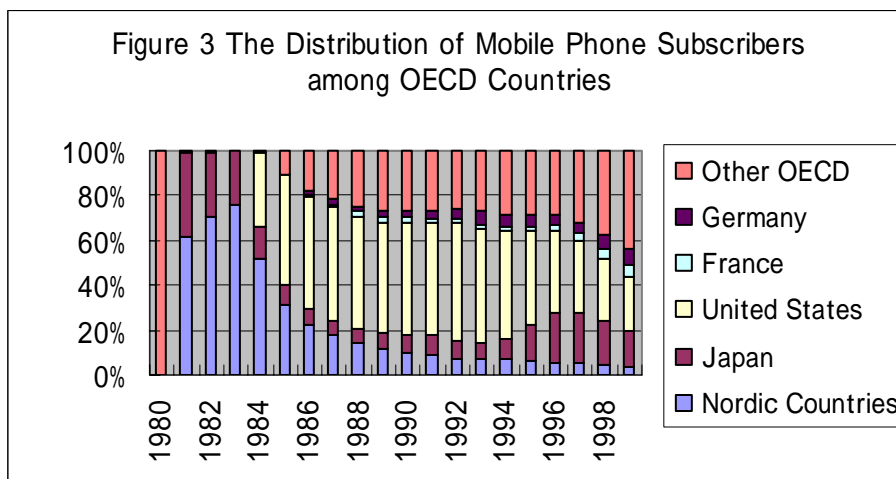
largest mobile phone hardware vendor in the world. When GSM, the standard which originated in Europe, attracted the largest number of subscribers in the world, European firms, including Nokia, Ericsson, Siemens, and Alcatel, have become the leaders in the world market. Japanese vendors' failure to penetrate the markets outside of Japan, on the other hand, can be explained by the fact that the Japanese standard, PDC, failed to be adopted by other countries. PDC remains to be the dominant standard in the Japanese market, which explains the little presence of European and American vendors in the Japanese market. Table 3 summarizes the various standards adopted by the major mobile phone markets in different periods.

The reason why the national standard's competitiveness affects the competitiveness of national vendors can be explained as follows; First, it is natural for mobile phone vendors to try to enter their domestic market before trying to enter foreign markets, for it is usually easier to acquire information on the former than that of the latter. National telecommunications authorities may also favor the domestic vendors in providing information. Secondly, it is not easy for a firm to succeed in different standards at the same time, because firms must incur the cost of developing mobile phone terminals for different standards separately---for example, a firm cannot simply double the output of the mobile phone handsets catered for the Japanese market and sell them in Europe. Not only the circuits and software must be redesigned in order to adapt to different frequencies and telecommunications protocols but also the size of the handsets may change because the required transmission power is different. Hence firms can economize on development costs if their domestic standard becomes the world standard.

Table 3 Mobile phone standards of the major markets

Country	1 st Generation	2 nd Generation	3 rd Generation	Low Mobility
United States	AMPS	DAMPS, GSM, CDMA,	CDMA2000	None
Japan	NTT,TACS	PDC,CDMA	WCDMA	PHS
Nordic Countries	NMT	GSM	WCDMA	None
United Kingdom	TACS	GSM	WCDMA	CT1
Italy	RTMS, TACS	GSM	WCDMA	DECT
France	RC2000, NMT	GSM	WCDMA	None
Germany	CNETZ	GSM	WCDMA	PHS,DECT
Korea	TACS	CDMA	CDMA2000	None
China	TACS	GSM, CDMA	WCDMA, CDMA2000, TD-SCDMA	PHS

(Source) Funk(1998), the author.

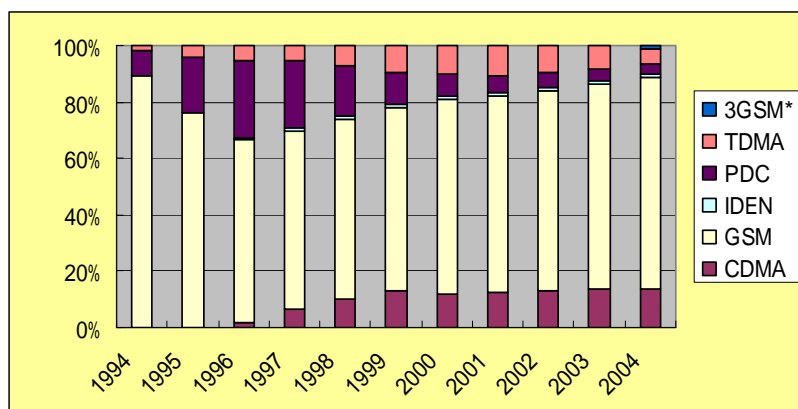


Mobile phone service in the United States started a few years later than in Nordic countries and Japan, but since the United States had larger demand for mobile communications than the others, the size of its market had quickly taken over the preceding countries (Fig. 3). From 1985 until 1994, the United States accounted for around 50 percent of the OECD market as a whole, which was almost the same with the size of the world market. This period corresponds to the 1st Generation of mobile phone

technology. The American standard, AMPS, was the most widespread standard during the 1st generation mainly because it had become the standard of the largest mobile phone market in the world. Other advanced countries in mobile phone technology, namely Japan, Nordic countries, Germany, France, and Italy, adopted their own national standard. It was natural for latecomers in mobile phone services, including the United Kingdom, China, and Korea, to adopt the most successful standard in the world at that time, AMPS, which is also known as TACS, because they can take advantage of low hardware costs that were brought about by scale economy.

The United States and Motorola, the champion of AMPS, even tried to penetrate the markets which already had their own standards. One of such markets was Japan. The United States succeeded in persuading Japan to open the mobile phone market to new service providers and in having the new service provider to adopt AMPS. Then in 1987, 1989, and 1994, the US government, using the threat of retaliatory tariffs, forced Japan to expand the frequency allocated to the service provider using AMPS. This measure would open up the Japanese market for Motorola's mobile phone terminals. Japan had been protecting domestic vendors by adopting a different standard with the United States. Without such protection, many Japanese vendors would not be able to survive in the face of Motorola's competition.

Figure 4 The Distribution of Subscribers of Different Mobile Phone Standards



(Source) GSMA Statistics

The bitter experiences with the United States and Motorola might be one of reasons why Japan insisted upon having its own standard in the 2nd generation, which began around 1993. While Europe created a common standard for 2nd generation mobile phone, namely GSM, Japan adopted its own standard, PDC. The success of GSM and the failure of PDC are too obvious: PDC remains to be a domestic standard until today,

while GSM has almost become a world standard, with 210 countries and regions adopting it as of 2004 and occupying 75 percent of the world mobile phone subscribers. The initial rapid growth of PDC and the decline after that in the market shares of various standards (Fig. 4) reflects the changes in the relative size of the Japanese mobile phone market in the world.

Then, why GSM succeeded in becoming a virtual world standard while PDC did not? Was GSM more advanced than PDC technologically? Although, both GSM and PDC belong to TDMA (Time Division Multiple Access) technology, PDC can utilize frequencies several times more efficiently than GSM, according to Nihon Keizai Shinbun (1999). If this is so, many countries adopted inferior technology even though they had the chance to adopt PDC. Funk(1998) insists that the early introduction of service, rapid growth of subscribers in the initial stage, and openness are the key factors that determine the success/failure of a mobile phone standard to become a world standard. But in the case of GSM, we must note that the standard was designed as a world standard from the very beginning. The inception of GSM dates back to the European Conference of Postal and Telecommunications Administration (CEPT) in 1982, which decided to form a common digital mobile phone standard by 26 European countries. CEPT formed a group to push forward the standardization, Group Special Mobile, and later on the European Telecommunications Standards Institute (ETSI) established in 1989 contributed to the establishment of GSM (Steinbock [2002]). Hence, when the operation of GSM service started in 1992, it was already a European standard, with 48 countries adopting GSM by the end of 1993. After the operation of PDC had started in Japan in 1994, Japanese telecommunications authorities tried to disseminate the technology in ASEAN countries, but they found that many countries were already adopting GSM. What the latecomer countries value most is the fact that GSM is the most likely to become the world standard. Adopting the world standard, the subscribers of these countries can take advantage of low hardware costs and international roaming--that is, to be able to use mobile phones in other countries--with other countries sharing the same standard. This explains why the share of GSM is still growing in the face of competition with other standards, such as PDC and CDMA, which may be more sophisticated than GSM.

Mobile Phone Standards in East Asia

The establishment of a common mobile phone standard in Europe was closely related to the European regional integration. The free mobility of people among

European countries necessitates a common mobile phone standard that allows mobile phone users to use their phones in any EU country.

In East Asia, on the contrary, mobile phone standards are different between nations, making international roaming only partially available. Japan adopted its own national standard, PDC, and its second largest mobile phone carrier adopted CDMA, a standard that originated in the United States. China's largest carrier adopted GSM, while its second carrier adopted both GSM and CDMA. Korea adopted CDMA. Japan, China, and Korea, albeit having CDMA in common, are far from creating a common standard. No discussion on the integration of mobile phone standards seemed to take place among the three countries. Even in the 3rd generation, the three countries are pursuing their own standards; Japan has already started operation of WCDMA, which is a standard created by NTT Docomo and European vendors including Nokia and Ericsson. Korea will join CDMA2000, a standard created by US firms and Korean firms. China is expected to give licenses to both WCDMA and CDMA2000 carriers, but the most favored by the authorities is TD-SCDMA, a national standard which has been developed for the most part by domestic enterprises with the collaboration of Siemens. The authorities will allocate the largest frequency range to TD-SCDMA, which will promote the development of TD-SCDMA carriers. The reason why Chinese authorities pursue an original standard is because they want to expand the market opportunities of domestic vendors, which have advantages over foreign vendors in the TD-SCDMA hardware and software markets.

Many people, including Watanabe (2004), argue that *de facto* economic integration has already been realized in East Asia. The expansion of trade and foreign direct investment among East Asian countries may lead to such impression, but once we take the case of standards into account, we have a completely different picture. East Asian telecommunication authorities are setting up non-tariff barriers against each other by adopting different mobile phone standards, sacrificing the convenience of mobile phone users by disabling international roaming. Firms of different countries seem to be supportive or indifferent to such segregation of markets among East Asian countries. At least, they are not joining hands---like the European firms---to create a common standard.

International collaboration for East Asian integration remains in the academic and bureaucratic circles, and no similar movements are taking place in the business community. Ogita (2004) points out that Japan's FTA strategy has been driven by policy makers and not by the business community. Taniguchi (2004), a Japanese diplomat, stresses the strengthening the political and diplomatic ties among participants as the

main positive impact of regional integration, while providing only poor examples of its economic advantages. According to Marugami et als. (2005), what the Japanese manufacturing enterprises expect by signing FTAs with Asian countries are: first, the invigorating of trade and investment, and secondly, the strengthening of the protection of intellectual property rights. In other words, Japanese firms expect that FTAs will help them cope with the infringement of intellectual property rights by Asian firms. The most prominent reason for Japanese firms to support the creation of FTAs or EPAs with Asian countries is that, "if East Asian countries should enter into FTAs with Europe and the United States (earlier than with Japan), we will be handicapped against the European and American firms in conducting business with East Asia."(Nihon Keidanren [2003])

The above indicates that Japanese business community never saw East Asian economic integration as an opportunity to improve the global positions of East Asian firms as a whole, but rather an opportunity to better cope with Asian copycats and to better compete with European and American rivals.

Conclusion

The different attitudes between the European business firms and telecommunication authorities and those of East Asia can be attributed to the difference of the distribution of firms' interest. In early 1990s, European firms, such as Nokia, Ericsson, Siemens, and Alcatel, although being competitors, were in similar positions in the world market, facing the common threat of Japanese and American firms. East Asian firms, on the other hand, are very different from each other. Chinese hardware vendors are no match for Korean and Japanese vendors in technological capability. Japanese vendors may suffer from the influx of Korean mobile phones once the non-tariff barrier of Japan is removed. In some other industries, such as clothing and house ware, the Chinese may win, and in the automobile industry, the Japanese may win. In sum, the relationship among Japanese, Korean, and Chinese firms are *vertical*, by which I mean that there is a wide gap of competitiveness among the firms in different countries, while the relationship among European firms are more *horizontal*, by which I mean that firms of different countries have similar levels of competitiveness. The vertical and horizontal relationship can easily be detected by checking the flow of foreign direct investment, which usually flows from the more advantageous to the less advantageous.

The fact that the relationship among East Asian firms is vertical must be a

good reason to push forward regional integration. Because it means that the comparative advantage of each sector is obvious and the gain of free trade is large. But in Japan, Korea, and China many people do not want to lose even the comparatively disadvantageous industries. China and Korea believe that they can catch up Japan in the industries which are underdeveloped at the moment. Japan's comparatively disadvantageous industries are often the politically influential sectors. With vertical relationships and the less competitive believing that they can overcome someday the more competitive, business firms across the borders cannot easily unite together to press the governments towards regional integration in East Asia.

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討論要旨

討論者 1 (コメント(C)と質問(Q)、丸川氏返答(M))

- ・ C:ここでの「規格」の問題に同感である。特に日本の場合、その導入が極めて政治的・外交的に決定され、携帯に関しては日本の負けである。
ここでもう少し「Standard (標準)」という観点へと話を広げてみると、イギリスの国際会計基準はアメリカでも採用され、世界へ広まっている。こう考えると、欧州の世界標準発信力はすごい。では、なぜすごいのかについて、丸川氏の(欧州企業の競争・協力関係からの)説明だけではまだ不十分なように思える。
- ・ Q:生産者の利害配置の類型化について、欧州企業の競争・協力関係から欧州統合(EU)がもたらされたとの指摘は説得力があるが、携帯の端末メーカーについてはそれが当てはまるのか?携帯端末メーカーのなかでノキアが一人勝ちの現状では、そのように言えるのか?
- ・ M:結果的に現在はノキアの一人勝ちのようにになっている。しかし、全てのメーカーとはいえないが、EUにより成功・復活した企業も多い。例えば、スウェーデンのエリクソンは、1980年代初めごろには、消費財における競争では日本に負けることを覚悟し、資本財への生産に集中しようかと悲観視していたほどであったが、EUにより復活した。

討論者 2

- ・ Q1:日本が規格競争に敗れたという認識には違和感を抱く。第一・第二世代においては国内需要が大きいため、規格を統一する必要がなかった。すなわち、国内市場を目標にしていたために、世界で勝負するつもりがなかったということではないか。
そうして、これから地域主義に関して言える事は日本市場の厄介さである。戦後日本(企業)は輸出依存度が極めて低く、企業の戦略が国内志向である。そのような国が地域統合の一員になることをどう考えていくべきか?
- ・ M1:その通りだと思う。通信業界において各国とも当初は国内向けであったが、第一世代から第二、第三世代まで約10年の間であっという間にグローバル化してしまった。その間、日本企業は国内市場に一生懸命であったために、気がついたら世界がGSM規格、つまりグローバル化されていた。ただし、私はその規格がグローバル化する過程におけるEUの役割を注目している。
- ・ Q2:規格と端末メーカーのシェアが直結しないのではないかと。一般的には資本輸出、すなわち海外で提携や買収を行えばシェアの拡大は可能である。例えば、ネットワーク外部性の問題となったVHSやDVDでは、東芝やソニーが世界市場で各国の企業と競争している。携帯メーカーの一部が電電ファミリーだったことを考慮すると、携帯(通信)産業の議論の場合には留保が必要である。
- ・ M2:論理的にはその通りだと思う。ただし、規格作りに最初から参画した先発企業と後発参入企業との間に特許利用の差(ハンデ)があることを指摘したい。最初から参画

していた企業間ではクロス・ライセリングをしているだろうが、日本企業の場合には特許料を支払わなければならないだろう。これがある国の企業発の規格でその地場企業のシェアが大きいという理屈付けである。

討論者 3

- ・ C1：当初は民間メーカーと政府（郵政）との間に認識の「ズレ」があったが、第三世代に関しては欧州規格への統合に動いた。
- ・ C2：先の（企業の国内市場志向についての）質問と関連するが、日本における東アジア経済統合の話は、海外に進出して活動している企業はそれを望んでいるが、国内市場を対象に活動している企業は日本市場が伸びていけば良いと思っている。そういう意味で、海外進出企業と国内企業との間にも認識の「ズレ」があると思う。

討論者 4

- ・ C：欧州統合は政治学から見れば成功した。しかし経済学から見れば、欧州統合という regionalization は独占とカルテルのケースで、コストが高く消費者にとっては好ましくない。日本やアメリカでは企業間に競争がありコストが安く、第三世代では参入のチャンスがあると思う。
- ・ M：欧州統合で独占にするつもりはなかったと思う。欧州統合により欧州企業が有利になる根拠としては、拡大した市場に先に参入して規模の経済を確保すれば日本企業の参入が難しいというのが私の認識である。ただその場合でも、欧州企業間の競争があったはずである。

討論者 5

- ・ Q：丸川氏は、統合による各国の利益配置の類型化を EU、北米（NAFTA）、東アジアの三つに分類した。EU は、対等な競争が成り立ち、日本・米国に対する共通の対抗意識を持つことから、経済界から経済統合への動きが進んだ。他方北米では、傍から見ても米国の一人勝ちが明らかで、米国の都合のよい経済統合となった。東アジアは、NAFTA 型に進みそうだが、韓国、中国などは垂直的な関係になることに 0 反発が予想される。先の（日本企業のなかでも東アジア統合に意見の相違があるという）議論にもあったように、同じ日系企業のなかでも韓国に進出している企業、バンコクに進出している企業の間では意見が異なると思う。そうすると、東アジア共同体は形成されないのではないか？
- ・ M：北米の場合でもあらゆる産業で米国が勝つということはないが、それぞれの産業を政治力でウェイト付けできるとすれば、政治力の強い産業では最初から勝負が決まっ
ていて、後発国はこれに挑戦するつもりがないということ。日本・中国間、韓国・中国間では、どちらの国が勝つか予想できるが、日本・韓国間ではとどちらが勝つか分らな

い。また、後発国、すなわち中国や韓国の自動車産業において、今は発展途上だがこれからキャッチ・アップして将来は逆転したいという政治的発言力を強く持っていれば、統合に賛成しないかもしれない。

討論者 6

- ・ Q：必ずしも技術力の分布だけの問題ではなく、技術力の分布と市場の分布が一致してくるかどうかではないかと思う。北米の場合でも、中南米諸国は技術力が劣っていても米国の大きな市場に参入できるというメリットがあるので、米国の一人勝ちを許しているのかもしれない。日本は技術力があるが、中国の市場が圧倒的に大きい。中国側からみれば開放して日本企業の進出により利益を得られるはずであり、日本側も結局は利益を得られるはず。貿易の相互利益というのは必ずある。
- ・ M：経済界のみに注目しているので、統合が難しいと話したが、その他を考慮すれば、そう言い切ることはできない。ただし、日本・中国が手と手を取って統合しようという機運にはならないと思う。企業間の関係を示している直接投資の流れをみれば、EUでは双方向であり、他方、日本対中国、韓国は一方向であり、それが企業間の力関係を示していると思う。

討論者 7

- ・ C：私は多国籍企業の工程間分業が地域主義(協力)を牽引すると考えている。例えば、日本から部品を輸出して東南アジアで組み立てるといような電子・電器産業における分業が挙げられる。そのため、障害があったら企業は積極的に政府に働きかけるのでは？実際に ASEAN では、自動車の部品相互補完スキーム：BBC (Brand to Brand Complementation) や AICO (ASEAN Industrial Cooperation Scheme) が企業の働きかけにより受け入れられ、進行している。これらを踏まえると、多国籍企業の活動が地域協力を影響を与え、逆に地域協力体からも企業へのアシストという相互作用があると思う。
- ・ M：日本企業が東南アジアで自動車を作りやすくするために ASEAN が地域統合を進めているかのように聞こえるが、韓国と中国ではそうはいかないのではないかと。

討論者 8

- ・ Q：技術的な制約に伴う最適な通信圏は存在するのか？ そうだとすると、EU、北米、東アジアなどそれぞれに規格があっても良いのではないかと？ 企業の利益 (profit) と経済全体の効率性 (efficiency) は別に考えるべき。
- ・ M：企業の利益配置転換が統合形態を決定するという仮説を立てたが、消費者の利便性をもっと考えるべきかもしれない。一般論として、人がよく移動する範囲内では規格が同じ方が望ましい。

討論者 9

- ・ Q：企業(端末メーカー)と standard(規格)の話は区別すべきだ。丸川氏は、企業が日本市場を目標にしていたと言っていたが、技術が良ければ、企業は世界へ発信したいのではないかと？ 例えば電器産業(ビデオ等)では、企業による新しい技術が発明され、

世界市場でいくつかの standard 間の競争が起こり、最終的に市場が拡大した方が勝つ(その企業の standard へ統合される)。

- ・ M：通信産業と電器産業との間には政府の規制の有無といった相違があることに注意が必要である。通信では、どのようなニーズがあるか政府がある程度コントロールせざるを得ない。

討論者 10

- ・ Q：上記の議論では、端末メーカーと政府という 2 プレイヤー (player) のみに議論が絞られていた。規格作りの話として、通信キャリアがプレイヤーとして議論に出てくる必要がある。そして、このキャリアの役割を見直すことでこれまでの議論がかみ合うのではないか？
- ・ M：通信キャリアが海外事業展開を規制されていたこともあり、発表では意図的にその部分を抜いた。

(討論記録 二階堂有子)