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Interview: What is International Competitiveness in the Information and Communication Sector?

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Competitiveness: Countries and Companies

Sunada: Mr. Imagawa, you mention two points regarding Japan's international competitiveness in "What Soccer Teaches Us about International Strategy in Information and Communications", one of your regular columns in Nikkei IT+PLUS.¹ First, which should be strengthened, the competitiveness of a country or a competitiveness of a company? Second, what should be done with domestic competition to strengthen international competition? Why did you think that considering the former question first is necessary in discussing the improvement of Japan's international competitiveness in the information and communication industries?

Imagawa: The phrase *international competitiveness* can easily be misleading, as seen from Professor Paul Krugman's comment I quoted in my column: "competitiveness is a meaningless word when applied to national economies. And the obsession with competitiveness is both wrong and dangerous."² The Panel on ICT International Competitiveness of the Ministry of Internal Affairs and Communications has been discussing how international competitiveness can be enhanced, but discussions can become inconsistent because participants have different definitions of the phrase

international competitiveness.

International competitiveness is discussed in politics too when the economy gets worse. Therefore, my intention is not to allow the definition of international competitiveness to remain vague, but to clearly establish it from the beginning.

Watanabe: Krugman argues that the concept of international competitiveness itself is fuzzy and useless. Is it your point that people use the word *competitiveness* in various ways to begin with, but that the term is not necessarily useless?

Imagawa: Yes, it is. Discussing international competitiveness itself is not a bad thing. Japan's information and communication companies, which should be a driving force for the country's economy, face the so-called "Galapagosization" phenomenon in which efforts to develop the latest technologies, products and services within the Japanese market has lead to technologies, products and services that are unique to Japan. Basically, I want them to enter the global market and do well, so my intention is not to deny the need for enhancing competitiveness, but to organize the starting point for considering how companies can achieve success.

Sunada: If I remember correctly, the 2007

White Paper on Information and Communications analyzes "business competitiveness" (comparisons of shares in the global market) based on the company's nationality and "location competitiveness" (comparisons of shares in export) of nations. Could you expand on these concepts?

Imagawa: People pay attention to the countries' competitiveness ranking published annually by the World Economic Forum. The index is a mixture of the two factors, which is a source of confusion. First, we can use Toyota as an example to clarify what business competitiveness is. Toyota became the world's number one in automobile sales, replacing GM. The company is strengthening its international competitiveness by gaining a large share in the global market and raising profits. However, not all of the profit earned by Toyota goes to Japan: part of it goes to countries like the United States and China because the company is located globally. Business competitiveness is like the competitiveness of brands and does not translate 100 percent to reflect competitiveness of Japan as a nation.

Competitiveness of a nation, on the other hand, can be understood as how many productive workers and firms are gathered in the nation. For example, if a foreign automobile manufacturer finds the Japanese market attractive and

locates its production base in Japan, it leads to increased employment. If Japanese and foreign companies enter the Japanese market and create employment and added value, their profit goes to Japan. Such a locational advantage increases the country's strength, and the nationality of the players does not matter much. However, part of Toyota's competitiveness certainly contributes to Japan's competitiveness, so it's not that a company's competitiveness and a country's competitiveness are totally different concepts. The two concepts overlap to a large extent, but are not exactly the same, which must be clearly understood.

Sunada: You argue that increasing location competitiveness will be important. It is true that a number of foreign companies entered Japan after complete liberalization in the mid 1970s and contributed to the growth of the market by increasing competition, and they also increased employment of Japanese workers. But, Japanese computer manufacturers did not necessarily gain export competitiveness. Also, competitiveness of the software industry became almost nonexistent. Your column argues the need for creating an open and active environment in order to move away from Galapagosization. However, isn't there a concern that openness will lead to the decline of the

domestic players just like the notion of "Wimbledonization" in tennis?

Imagawa: One aspect of the entrance of foreign companies into the Japanese market we can be sure of is that it leads to not only new employment, but also cheaper, higher-quality products as a result of competition, which is beneficial to consumers. But, when the discussion turns to the topic of what happens to Japanese computer makers and software companies, people become somewhat ethnocentric or sentimental. If the idea is that Japanese companies must win, then should we become protective, push out foreign software, and be satisfied with domestically produced software? Should we just have an all-Japan championship in order to avoid becoming open like Wimbledon? It is desirable that Japanese companies compete against foreign firms and become powerful through competition. But, there are cases in which, as a result of competition, foreign firms can offer better products at lower prices. I don't think, however, it shows a decline of the country's competitiveness. Since foreigners can become *yokozuna* (the highest-ranked sumo wrestlers), sumo wrestling in Japan is the best in the world. If only Japanese wrestlers were allowed to participate, Mongolia might one day have a sumo market better than Japan's.

Watanabe: In other words, the idea is not that Japanese companies are the driver while the foreign companies are in the backseat. Rather, it is important that foreign firms enter Japan and stimulate competition.

Imagawa: As in a theory of international economics, benefits from trade emerge when a country raises the competitiveness of exporting industries in which it has a productive advantage while, for goods in which it doesn't have an advantage, it imports cheaper, better products from foreign countries. If foreign companies can offer goods that are cheaper and better, we can just use them. This, of course, cannot apply to all goods and services because for agricultural products, for example, there are issues concerning food safety. But, basically, if Japanese companies can't provide cheaper, better goods or services than those of foreign companies as a result of competition, they should exit from the market and concentrate on other areas. In fact, IBM sold its personal computer business to a Chinese firm and shifted their focus onto products with higher added value. I think the idea of producing goods in places where labor costs are low and buying them is also acceptable.

Sunada: Krugman has severely criticized economic advisers to the Clinton administration such as Laura Tyson and

Ira Magaziner. They argued that since the information and communication industries are very important relative to other sectors, the government must protect U.S. companies and maintain their competitiveness. Do you think that Krugman's criticism is correct?

Imagawa: I certainly agree that the information and communication industries are a strategic sector for the economy, and that especially for a developed nation, such a sector generating innovation after innovation is important. However, like the case of IBM mentioned earlier, a country does not necessarily gain advantages in all goods and services from the information and communication industries. The production of goods that are standardized and suitable for mass production shifts toward countries with lower labor costs; advanced nations provide goods and services with higher added value. In the field of digital technology especially, companies can't maintain competitiveness if they stick for a long time to the production of, for example, hard disks. This is because strategically critical products and services change continuously. It is very true that the information and communication industries must be supported because of their strategic significance. Since generational changes are dynamically occurring in the industries, the idea

should be about pushing innovation with, for example, R&D assistance rather than protecting any individual company or any single product.

The Open Market as the Key to Breaking Away from Galapagosization

Sunada: Are there industries whose markets are easy to open and industries which are prone to Galapagosization with markets that are hard to open?

Imagawa: Yes, I think both types exist.

Watanabe: For instance, it is easy to provide search engines and packaged software in the global market. Conversely, communication carriers with their own fixed infrastructure have difficulties in going global. Some services are easier to export than others.

Imagawa: As you pointed out, goods and services can be tradable or nontradable. Under basic free trade, tradables cannot remain in the domestic economy alone. Companies must create products that can be used abroad and export them, and consumers buy foreign products if they are usable in Japan, cheap, and high quality. In this way, tradable goods are culled and become homogeneous, and Galapagosization is less likely to occur.

Information and communication

industries can be categorized into four layers: devices, networks, platforms, and applications/content. Since devices are tradable, Galapagosization is unlikely to occur for them. Applications and content freely move across borders despite language barriers. However, networks and platforms cannot be traded directly with consumers in foreign countries. Services like telephone and broadcasting are intrinsically domestic, and there is less competition with foreign firms. Therefore, it is easy for Galapagosization to occur. Moreover, standardization is needed to make connections, so if standards unique to Japan are used, foreign companies have difficulty entering the market. In this sense, networks and platforms belong to an environment where Galapagosization can occur easily.

Cellular phones are devices, so they should be tradable goods that should be less prone to Galapagosization; however, they face Galapagosization probably because the service is vertically integrated and because businesses offering the networks and platforms control devices too. If the relationship between the carriers and device vendors becomes horizontal, Galapagosization is less likely to occur unless devices themselves are isolated with unique specifications. With the recent emergence of Android or the iPhone, mobile devices seem to be moving away from

Galapagosization.

Watanabe: The Study Group on Mobile Business has also proposed to separate carriers and device manufacturers.³

Imagawa: Businesses themselves are moving toward openness, although the Study Group on Mobile Business might have contributed to this. Discussions about openness tend to concern the possibility that Google or Apple may enter and become dominant, but consumers benefit from various products coming into domestic markets. As foreign companies come, it is important that Japanese companies go abroad, which we would like to encourage. The basic idea is that if we seek their openness, we must be open too.

Watanabe: In your column you argue that we must abandon the sentimental GNP-centric perspective and that a rational GDP-oriented perspective should be pursued in international strategies for the information and communications sector. But, according to what you have mentioned, things are not as simple as throwing away one thing and picking up another. For example, some might say that if GDP is the only concern, exports and imports do not matter, and therefore the entrance of Japanese companies in foreign markets need not be considered. But your view is that GDP is important

just because it directs our attention to the benefits of domestic competition?

Imagawa: Yes, because GNP and GDP share the components, after all.

Watanabe: When we consider what benefits competition in the domestic market can bring, there are probably two kinds. One is benefits to the consumer as they can buy cheaper and better products; the other is benefits to producers as workers acquire skills and as related businesses grow. The former type is relatively easy to understand. As for the latter, foreign firms locate in the country and conduct planning and product development in some cases, but in other cases they just bring products made abroad. For example, Google entered the Vietnamese market, but it has not been usable because it can't process the Vietnamese language well. Also, no domestic search engine company has grown. Such an episode would make people wonder about the optimistic view that opening the market would lead to the development of human resources and the growth of related businesses.

Imagawa: In my column I used the example of soccer for ease of understanding. When the J. League first started it gathered internationally prominent players in Japan and the Japanese players got better as a result. I

think similar phenomena can occur.

Watanabe: In that regard, would you say that the key is how much transfer of knowledge and skills occurs, whether for technology or business management methods?

Imagawa: Yes. The key is what kind of spillover effects players from overseas have. At the same time, there are empirical studies finding that even without production or product development facilities being set up, the entry of high-tech products and services itself can produce large spillover effects. If superior products enter the domestic market with reasonable prices, competition against them occurs domestically. Then, if Japanese companies counter with their own research and development, beneficial competitive pressure would be generated along with the transfer of technology and know-how.

Shoji: In opening a market that experiences Galapagosization, isn't there a need for policies that would promote the transfer of knowledge or technology? Some countries require a joint venture or take a step-by-step approach by regulating the capital ratio. Are discussions on such details necessary for Japan too?

Imagawa: In communications business, the regulation on foreign capital has been abolished except in the case of NTT. In terms of doing business in the information and communications field, few regulations exist on the entry of foreign companies into Japanese markets, and I think the limitations like the ones you mentioned should not be put in place.

Appropriate Level of Competition Increases International Competitiveness

Sunada: In your column, you quote a paper by Michael Porter and Mariko Sakakibara and say that making domestic competition active leads to the improvement of international competitiveness.⁴ Do you think this argument can be applied to any industry?

Imagawa: The paper says in one of its footnotes that it applies to industries for which innovation is important. The argument applies to industries producing services one after another, but it may not apply to areas in which traditional business models have been continuing for a long time.

For example, people rarely discuss competition in the electric power industry in Japan in connection with discussions about international competitiveness. In that industry, the same business model has been used for a

long period of time, and it is unlikely that some innovation will entirely change the services offered by the industry. Some industries are suitable for the argument, while others are not: it seems to depend on the importance of innovation and, as mentioned earlier, whether goods are tradable.

The column actually points out that an appropriate level of competition is desirable for inducing international competition; it does not assume a linear relationship that as domestic competition gets more severe international competitiveness increases accordingly. Neither monopoly nor excessive competition is desirable. It is difficult to determine where the appropriate level of competition is, but industries, in which several large companies with overseas subsidiaries compete with one another, seem to have strong international competitiveness.

Universal Services in Competitive Markets

Watanabe: In his other series of research, Michael Porter stresses the competitiveness of companies are closely related to strategic positioning in the market and making decisions on trade-offs.⁵ In that light, what is a little bit concerning is the obligation to provide universal services in the area of communications and broadcasting. It

may seem to be difficult for companies to take their unique position and organize the business operations and whole services accordingly if they can't choose customers and are obligated to provide services to anyone. Do you think it is desirable to reexamine such universal services and allow businesses to make more diverse competitive strategies?

Imagawa: No, I don't. Universal services have long been essential to the general public. They are lifeline-like services, and not tightly connected with innovation. In the field of communications, universal services are required for the land-line telephone, but there is no such obligation for broadband services. I think that issues with the universal service obligation exist separately from what Professor Porter argues.

Watanabe: In the field of communications, there are active discussions on a potential reorganization of the concept of universal services. Do you think the view that universal services are not strongly connected with innovation may change if that becomes a reality?

Imagawa: I think it is a question of how to design universal services. As you point out, there are discussions about the shift from universal service to universal access in providing communication services. Discussions may lean toward the idea

that providing pipes is required, but how the pipes are used is not a concern, be it the telephone, IP phone, or the Internet. Arguments for the provision of universal access will very likely exist because the right to access information is almost like a basic human right in this modern age.

Watanabe: In that case, would you say that the idea of universal services may expand into non-lifeline areas where innovations are more important?

Imagawa: It depends on the design. One view can be that providing the pipes is required, and also that competition among services carried on them must occur. However, even in such a case, if the universal service obligation is regarded as a guarantee of access, it means services are provided without regard to innovation and competition, and discussions shift toward a slightly different dimension.

Policies to Promote Innovation

Sunada: Japan's past industrial policy is characterized by the ethnocentric idea of strengthening Japanese companies and increasing export competitiveness, as well as the concept of nation-building based on raising the capacity to develop own technologies. According to what you have said, these ideas must be changed drastically. Increasing location

competitiveness requires significant modification to traditional policy processes and policy objectives. More concretely, for example, we might suggest reducing corporate taxes to allow an easier entry of foreign firms or abolishing regulation on foreign capital. Other than such reorganizations of the financial environment, what technology policy changes are there? If there are superior technologies and human resources in Japan, I think they would attract foreign firms.

Imagawa: There are stages of growth for the economy, and I think infant industries should be protected in some stages. When Japan's focus was on catching up with advanced nations, it was indeed important to strengthen Japanese businesses and create internationally competitive players. However, now that the country has been the world's number two economy and has also been experiencing a population decline, it needs to open markets. This is especially true for the information and communication industries that have high added value. Japan's innovations in this field are highly regarded worldwide, but targeting domestic markets in a Galapagos-like environment does not provide future prospects for economic growth.

In terms of policies, I think it is important to eliminate nontariff barriers

and make the markets transparent for foreign businesses. If there is not much progress in this regard, Singapore or South Korea will become the hub of Asia. Also, China is emerging. Until now, Japan has been the world's number two market and has been attractive in terms of its market size. But, it is nothing compared to the size of China. This is a structural matter, there is nothing we can do about it. Given such a situation, Japan needs to encourage innovation and create new technologies continuously.

Japan has a lot of good technologies. However, making them into international standards is fairly difficult because of international politics. As seen in information and communication technology standards, American, European, and Japanese standards have existed in parallel for cellular phones, high-definition television, and digital television. But, Japan's technologies have always been part of them. Japan must have technology policies that encourage companies to churn out such superb technologies and innovations for this area. The field of basic research is linked with the national capacity, but is also highly risky and less compatible with market principles. So, the government must invest resources intensively in the field and nurture such seeds. This is the only way Japan can survive, even though it won't be easy because the period of first mover's advantage is becoming very short

due to fierce catching-up by emerging market countries.

Sunada: Market competition is generally associated with less government intervention. But, in the communications industries the role of government intervention promoting competition is very large. Will the government continue to encourage competition by intervening in the market in this way?

Imagawa: There is a need for interventions including regulation and standardization in the network industries which deal with connections that are closely associated with competition. Compared to the telephone business, the broadband business is in an environment in which competition is more likely to occur, so it seems that interventions to promote competition could be reduced. However, in reality, NTT has gained more than 70 percent of the residential optical fiber market. So, I think the government has no choice but to continue such policy. Naturally, the network industries are subject to economies of scale, which affects competition. I think these industries are a little different from other industries that have nothing to do with the network.

Watanabe: Many industries in the application layer experience network effects. In comparison, the land-line

telephone and broadband business especially deal with large-scale investment. I think this becomes one of the major barriers to entry, which requires government interventions.

Imagawa: The size of investment is certainly a factor. More importantly, it is the existence of essential physical facilities that make the field of communication networks an environment where free competition has hardly been achieved. Network effects, in which the existence of more users means higher values, are surely present in the applications field. But, in the case of essential facilities, once they are in place, duplication is not needed. In this sense, it seems to be different from applications where competition can solve the problem.

Watanabe: Depending on the future development of the market, mobile broadband such as LTE and WiMAX may be successful, and FMC may not become popular and may compete against fixed-line services like ADSL or optical fiber. Then, the structure of competition would change dramatically with more players relying on infrastructure. In such a case, will the government possibly reduce its intervention?

Imagawa: I think it depends on the situation of competition at the time. Mobile and "fixed" businesses are

considered basically as separate at the moment. If, with guaranteed access, people begin to stop distinguishing between them and regard them as being the same market, then I think competition policy and the government's approach to regulation will start to change.

Sunada: Can policy that promotes innovation be consistent with policy aimed at creating a competitive environment?

Imagawa: There will be cases in which promoting competition pushes innovation as well as cases in which it doesn't. There has been a debate on this question for a long time about what type of markets are more likely to show innovations: some say innovations tend to occur more easily in markets close to perfect competition while others argue that more innovations emerge from monopolistic markets.

It seems that the former refers to incremental innovation in practical research, such as the development of services, rather than to the likelihood of generating innovation in many settings. The latter situation tends to refer to radical innovations in basic research.

Earlier, we discussed Japan's standards in high-definition television, cellular phones, and digital television. In this field, NTT, KDD, and NHK have led research and development efforts,

invested their surplus in research, and created crucial technologies in the field of information and communications. For innovations in such basic and fundamental research, severe competition is not necessarily favorable. So, I think things operate smoothly with a small number of large companies competing oligopolistically, rather than with a single monopolist. On the other hand, I think innovations that are more closely associated with actual use need active competition. Therefore, innovation policy and competition policy seem to be consistent with each other.

Shoji: Do you mean that the nature of important innovations and the environment that promotes them vary depending on the maturity of the field in the information and communication industries?

Imagawa: Some people argue that innovations in the area of information and communications have a unique life cycle. That is, incremental innovation in un-modularized developmental processes is effective in the early stages of new technology markets. When a technology matures, products and services become commodities and are subject to modularization and a disruptively innovative module can emerge in this situation, offering functions similar to existing modules but at lower prices. As

this generational cycle turns faster, it becomes more difficult to maintain the monopolistic position and first mover's advantage. Innovation competition in semiconductors and digital home appliances are typical examples.

Also, in some cases, unexpected rivals appear as technology becomes more widely available. A while ago, no one expected Google, which was specialized in search technology, would compete against the software giant Microsoft.

Therefore, in the field of information and communications, important types of innovation depend on the degree of competition or the developmental stage of the technology. As a company or as a country, in order to maintain international competitiveness, it would be best to prepare a portfolio of various innovations, just like a financial portfolio containing financial assets with different risks and returns.

Sunada: Thank you very much for spending such a long time with us.

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This interview was conducted based on the content of the column that Mr. Imagawa writes for "Nikkei IT+PLUS". Opinions expressed are his personal views and do not represent the position of organizations with which he is affiliated.

Notes:

1. <<http://it.nikkei.co.jp/internet/special/ict.aspx?n=MMIT2I000030072008>>
2. Paul Krugman [1994] "Competitiveness: A Dangerous Obsession," Foreign Affairs, March/April.
3. <http://www.soumu.go.jp/joho_tsusin/policyreports/chousa/mobile/>
4. M. Sakakibara, M. E. Porter [2001] "Competing at Home to Win Abroad: Evidence from Japanese Industry," The Review of Economics and Statistics, May, Vol. 83, No.2, pp.310-322.
5. See, for example, M. E. Porter [1998] *On Competition*, Harvard Business School Press. (Japanese translation by H. Takeuchi [1999] *Kyososenryakuron I*, Diamond, Inc.)