

T he Future of the Japanese Manufacturing Industry

— Overall Hollowing Out Will Not Happen

By Japan SPOTLIGHT Editorial Section

Q: What do you think about the new Japanese government's recently announced growth strategy, in light of your views on the manufacturing industry's potential?

Fujimoto: It is a bit too early to make any clear evaluation of the current policy, but it would be reasonable to say that many policy initiatives today are related to METI's industrial policies. At this point, the current change in fiscal and monetary policies seems to be working well in stimulating cautious optimism among the Japanese people and has thus raised stock prices. But whether this will continue to work well or not is another question. We will have to wait and see what impact it has in the long run.

In addition to fiscal and monetary policies, the new government has introduced a wide range of prescriptions which aim at enhancing Japan's growth potential, but most of them seem to be, at this point, a quickly mobilized patchwork of rather old policies. Further improvements would be required to make their "growth strategy" truly integral and powerful. In addition, the new industrial policies seem to be heavily biased toward short-term and demand-side policies. In my view, METI's industrial policies have historically swung between demand-stimulating ones and productivity-enhancing (supply-side) ones, but the current trend is clearly that of the former.

I would like to mention here the importance of the balance between demand-side and supply-side policies. In order to take full advantage of a possible increase of demand created by such a new macropolicy and to utilize these newly created money sources to achieve growth founded on well consolidated production bases, we will need to maintain and improve productivity and competitive production facilities inside our country. Such facilities (*genba* in Japanese), even if production costs are at this moment higher than in other countries, may still enjoy advantages in such aspects as productivity, quality and lead time over their rivals, which enables the Japanese firms to increase their overseas factories' productivity



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through their intra-firm technology-capability transfers.

It will be crucial for Japanese companies from now on to achieve globally optimal solutions to maintain highly competitive manufacturing bases in Japan, in particular their mother factories. Otherwise, I believe, Japanese manufacturing companies cannot prosper against global competition. But what will it mean to maintain such highly productive manufacturing bases and facilities, in particular in the tradable goods sector? It means, I believe, that we can employ people at higher wage levels in the future if we maintain high-productivity facilities that can make up for the international wage difference. In the past two decades, this was not an easy task, partly because China, with its huge population of over 1 billion people and workers' wages of only one-twentieth the

Japanese level, has been enjoying a competitive edge from this abundant and low-wage labor source.

The end of the Cold War around 20 years ago was a turning point in historical terms as it created a certain number of emerging economies that switched from socialism to capitalism and thus prompted such competition between low-wage and high-wage countries. Up until then, international competition between companies in the 1970s or 1980s had been centered on developed nations with nearly the same level of wages. This was what we called then "Global Competition". In such a competition, the companies with higher productivity will win the race almost automatically, if wage levels are the same among all competitors.

During this period, the value of the yen continued to appreciate, but Japan's trade surplus has increased continuously. This has been possible only because of Japanese factories' efforts to raise productivity and the quality of their products.

Until the 1960s, the value of the yen was fixed at 360 yen per US dollar, according to the Bretton Woods Agreement, and then in the 1970s following what we call the "Nixon shock", the yen's appreciation started. However, what is very impressive is that Japan's trade surplus began in 1970 and the yen continued to

appreciate from 360 yen, finally reaching even 80 yen, and during this period trade statistics almost always showed a trade surplus in Japan in spite of the strong yen. To use a golfing analogy, this meant that in spite of a decreasing handicap, the player continued to win.

Q: What do you think would be the basis of this strong competitiveness of the Japanese manufacturing industry?

Fujimoto: The Japanese are very good at producing relatively complex goods by teamwork. They have an advantage in coordination-intensive products such as automobiles and high-function machine tools. According to Peter Drucker, the Japanese product development process is like soccer, which is a sport based on teamwork among multi-skilled players. The Japanese are so good at a soccer-type production and development process, in which coordination within a team or teamwork is considered vital to achieve a good performance, that their development productivity level in the automobile industry has been roughly twice as high as in the United States or European auto industry for many years.

Since the 1990s after the end of the Cold War when China with its cheap labor force began to emerge, in addition to the continuing strength of the yen, low wages in China have worked as a serious handicap for Japanese industries. The rules of the game in which productivity prevailed over the competition among advanced (i.e., high wage) nations in the 1980s were drastically changed with the emergence of China. The rules were now about low wages. But in spite of these negative factors, Japanese industries such as the automobile industry narrowly managed to continue to export thanks to their products' high quality and their factories' high productivity. The last two decades have been truly the worst for Japanese industries in terms of the survival of local production bases because of the struggle to compete against the cheap labor in Chinese and other low-wage industries.

Another factor that has affected Japanese industries' comparative advantages is the digital revolution of the 1990s. Home electronic appliances used to be Japan's principal exporting industry, aside from automobiles, but it was seriously affected by digitalization, which has altered the coordination-saving production and development processes dominant in the industry and reduced its competitive edge. Many factories in this industry in Japan have attempted to boost their productivity to deal with this factor, as well as the strong yen and cheap Chinese labor. But even factories that achieved nearly 10 times their previous productivity levels while lowering wages through increasing employment of non-permanent labor could not easily survive, and many of them were forced to close. We now see this happening finally to television production.

This is the final outcome of the change that occurred in the 1990s and 2000s and it is important to see this phenomenon in a historical perspective. In the process of changing industrial structures and competition, Japanese home electronic appliances, digital ones in particular, will not survive easily, with the possible exception of relatively high-end ones.

Q: Do you think Japan should give up producing low value-added products, since they cannot compete against products made by newly emerging countries with low wages, and instead specialize in high value-added products like the iPhone?

Fujimoto: Yes, I think so. High-functional products or products' complicated (integral) designs will need greater coordination processes, and Japanese firms have an advantage in this, as long as customers emphasize such functions. But for a global company, having only a single strategy would be risky in the age of uncertainty we are living in today. They should maintain their advantageous position in high-end products but should also try to compete in low-end products in the so-called "volume zone". They should maintain a well-balanced strategy, bearing in mind their comparative advantages. Because Japanese firms can go across national borders, they may continue to develop and produce high-functional and integral products at their domestic R&D centers, while transferring some of their development facilities for simpler and lower-price products to emerging countries.

More importantly, Japanese firms should do their best to further raise the productivity of their domestic production bases to sustain the above-mentioned dual global strategy. Also, raising productivity would lead to a decrease in domestic employees if sales remain unchanged, and therefore it will be necessary, from Japanese society's point of view, to stimulate the demand side as well while trying to enhance productivity on the supply side. The new administration's policy is, as I said, a demand side policy that would partially meet this need. However, I would repeat here the need to pursue a supply side policy simultaneously to improve the quality and productivity of production bases. The government will need to pursue its own dual strategy.

Q: In talking about reform of the supply side, how shall we deal with modularity? Since we do not have an advantage in this, should we leave it with the Americans?

Fujimoto: No, we should not. First of all, the engineers *a priori* have to apply modularity concepts to their detail-level product designs as far as they can. Otherwise they will end up with over-design or over-engineering, by which Japanese firms would lose the competition anyway in terms of cost competitiveness regardless of their products' architectures. However, I think it is true that the market would eventually choose integral or coordination-intensive products *a posteriori* wherever the products face demanding functional requirements, strict safety-environment-energy regulations and other design constraints imposed by the markets and societies. In other words, even if the Japanese manufacturing industries currently tend to enjoy competitive advantages in the integral products, Japanese firms need to continue their capability-building efforts to cope with the modular products — another dual strategy.

How much or what part of the products or processes they should apply modularity to would be determined by the balance between

capability and architecture. A company with greater capability in coordination processes might keep attempting to find new products persistently in the integral area, but other firms may have to enter into more modular businesses while strengthening their capabilities for competing in that industry. The capability-architecture balance matters anyway in this kind of dual strategy.

In the case of automobiles, it is generally an integral and complex product in terms of macro-architecture. But German maker Volkswagen, with its high scientific-analytical capability, is attempting to create *a priori* new product architectures with larger functionally-complete modules, by which it may compete effectively against a Japanese maker that has a big advantage in coordinative capabilities in product development. Japanese makers should not blindly follow this German approach, since they have capabilities for developing equally functional products with shorter lead times and higher productivity, but they should watch these smart architectural changes very carefully and adopt them wherever it makes strategic sense to them.

The organizational capabilities of a factory, R&D center, firm, industry and country tend to evolve over time by historical or emergent processes. In the case of Japan, after the Cold War started in 1947 it was integrated into the side of the West and with the apparent US consensus that Japan should be a strong industrial and democratic nation in the Far East region, and was able to enjoy high economic growth, even though it was defeated by the Allied powers in World War II. Also, unlike the US for example, where high economic growth was made possible by immigrants, Japan achieved its economic growth without immigrants in its labor force.

It is true that Japanese manufacturing was shocked and shaken by the effect of low-wage labor in China in the 1990s, but this wage differential with China is gradually decreasing and Chinese wage levels will approach to one-fifth of the Japanese level in the near future. This level of cost difference may be able to be offset by Japanese firms' efforts at continuous improvements (*kaizen*) and tenacious capability-building. In this light, I would like to reiterate the importance of a well-balanced approach to demand-side policy and supply-side policy by the government. We need to maintain high-productivity manufacturing facilities in Japan for reasonably high living standards in the future for our offspring's generation, as well

as for those overseas.

Q: What do you think about the possible impact of the rising cost of energy in the wake of the nuclear power crisis in Japan?

Fujimoto: Japan should do more to procure cheap energy as South Korea started importing natural gas at reasonable prices. Japan's current trade deficit is largely due to the fact that it is paying more. It should take advantage of all possible low-price energy sources, such as shale gas from the US. Japan has been doing its best to save energy, assuming it will have to buy expensive energy, and it will continue to do so. In spite of this, in the long run Japan will face an energy shortage, so continuous innovations in this area are essential in the long run. As for Japan's contribution to global warming issues, the key is how Japan can develop, produce and sell its energy-saving and low-carbon production facilities overseas and save energy consumption worldwide.

In measuring how a country contributes to the reduction of greenhouse gases, including CO₂, I think it would be useful to adopt a quantitative measure showing how much industrial equipment and facilities (e.g., energy-efficient thermal power stations) that are developed or produced by a country would be able to reduce global CO₂ emissions. At this moment, the quantitative target is based only on the percentage of domestic emissions that are reduced, but since Japan's share in emission volume by countries is only 4%, its contribution may be underestimated.

Japanese industries, because they faced serious energy and pollution problems in the past, are highly competitive in energy-saving and environmentally friendly facilities such as combined cycle power generators with ultra-high-temperature gas turbines, which could contribute to this problem worldwide.

No matter how much Japanese society allows the operation of nuclear power stations after the Fukushima accident and no matter how much renewable energy may be utilized, an important reality that we have to assume is that more than 50% of electricity generation would have to come from thermal power for a long time. It may not be so easy to develop renewable energy sources very rapidly to meet 20% or more of Japan's total energy demand over the next two decades. It should also be noted that apart from the cost of electricity drawing people's attention today the quality of electric power is also an important issue for keeping domestic production of some of Japan's high-quality products, such as those using precision casting and special purpose steel making, even though they are now facing rising electricity costs, because their rigorous temperature management requires electricity of very high quality. Renewable energy sources would not be good for maintaining such high quality, since the power they provide could drastically fluctuate depending upon the weather. Thermal power and certain types of hydro power would be the keys to achieving high levels of the demand-supply balance of electricity. Developing and using renewable energy as much as possible are certainly goals to be pursued in the long run, but it is not logical to think that such new



products could solve all problems at once in the near future.

Finally, I would add that it would be wrong to consider solar power as the new energy source with the most potential to create new big industries in Japan. Solar power panels are typical modular-type products and it would be difficult for Japan to get a design-based comparative advantage in this industry as far as standard-type panels for mega-solars are concerned. Japan would easily lose the price competition against China in this segment, for example, unless the Japanese government imposes very demanding performance or durability standards on them. Germany did not succeed in creating a strong domestic solar panel industry in spite of a protective policy with a tremendous amount of subsidies. In any case, solar power will not be able to totally replace nuclear power in quantity for a long time and it would be difficult to create a big solar power industry in Japan.

Q: The high-capacity coordination process of production that you mentioned as a strength of Japanese manufacturing is dependent on teamwork, in my understanding. Do you think leadership in Japanese management has been effective or will continue to work smoothly as a function of teamwork? Another thing is that innovation is considered a key to growth in the new government's growth strategy. How do you think management should work to achieve innovation?

Fujimoto: Quite ironically, Japanese factories for tradable goods always had to keep a clear goal, which is "survival" in the midst of the yen's continuing appreciation since 40 years ago. Therefore they have been working hard to raise productivity and the quality of products. Just like a soccer game, once the goal is clear, Japanese factory people unite well as a team and work closely together to reach the goal. Factories are an element of local life and need to survive in order to secure jobs in their region. That is a strong motivation to encourage teamwork.

But this goal is often not shared by a large company's headquarters today. In the past, Japanese firms' headquarters used to have a common goal shared by all employees, namely to catch up with the developed nations, such as the US. Now that this goal has been achieved, we have some firms that are lucky enough to have competent leaders showing the employees a clear target, but we also have some firms (large ones in particular) led by incompetent leaders who cannot show their employees a clear strategic target.

In this situation, where a clear target is not easily seen, I am concerned that an illogical or groundless decision could easily be made by some vision-less management teams in large companies who are surrounded by obsequious subordinates. Without thinking objectively about the facts or reality of the long-term competitiveness of their factories, these leaders could pursue the wrong ideas, such as the belief that Japanese manufacturing industries are all losing their comparative advantage in continuing to work in Japan because of the yen rate, energy costs, and so on, and that they should move all of their production facilities overseas, being easily influenced by



prevalent views in the media and among leaders even when they are groundless or illogical. The Japanese tend to have a weakness in following others' views or apparently predominant opinions without thinking deeply. This happened exactly when Japanese military leaders decided to enter World War II, and without a clear and logical target a company's management could fail just as Japan did in the war.

In a more recent episode, the restoration of companies and factories seriously hit by the disaster of March 11, 2011 is being remarkably well done. The clear goal of restoration was shared by the factories and headquarters and effective teamwork was put into practice, showing that Japanese companies can achieve a remarkable performance once a common goal is shared.

In order to avoid the risk of illogical decisions being adopted by large firms, one immediate step would be to include as board members and other decision-making units a certain percentage of diversity-creating people including foreigners who know and love many Japanese things but would not easily follow majority views that are questionable. We need to create organizational cultures and working and living environments that accept foreigners and other diversity-creating members to function well within the Japanese firms' headquarters. Japanese who have worked overseas a long time and have become almost non-Japanese, or Japanese who have worked for foreign companies, female executives and younger generations could be also included as valuable board members for the same reason. We need such a diversity of management in order to enhance the quality of decision making at the headquarters of large firms.

I believe the success story of the J-League in professional soccer indicates that this is the right approach. In what we call the two lost decades, the J-League has been exceptionally successful in strengthening the competitiveness of Japanese soccer by employing many foreign players and achieving diversity within the teams. Foreign board members who easily dare to challenge the majority view even when they are in a minority would be key to leading Japanese companies in the right direction and spurring innovation in the era of global competition.

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