

Small and Medium-Sized Enterprises in Japan

By *Karatsu Hajime*

Small and medium-sized enterprises (SMEs), which are defined in Japan as having 300 employees or fewer, account for 99% of all the companies in Japan and employ 77% of the nation's labor force. According to the White Paper on Small and Medium Enterprises in Japan 1999, SMEs outperform major corporations in terms of productivity, profitability and growth – all of these factors indicate companies' management efficiency. The 1999 White Paper, which is subtitled, "Toward an Age of Business Innovation and New Start-Ups," presents figures which appear to indicate that the future of Japan's economy depends upon SMEs.

But many Japanese economists have long described Japan as having a two-tier economy. Existing as mere downstream appendages to major corporations, according to this view, the nation's SMEs are trapped in an exploitative relationship that forces them to cut costs to the bone. This scheme is clearly a variant of the Marxist description of relations between capitalists and laborers. But the tables have been turned in Japan, where many SMEs with unique, difficult-to-imitate products make money hand over fist regardless of the state of the larger economy. To get a feel for the phenomenon, one need only take a quick look around at a Japanese golf course. Who rolls up in the most eye-popping foreign cars? They are invariably either the heads of SMEs, or their sons. The heads of major corporations show up in a low-key chauffeured vehicle or a Mercedes-Benz.

These hot-performing SMEs have only come into existence since the oil crisis of 1973, however. Prior to that time, it was much more common for SMEs to operate as part of a larger corporate group, a reality reflected in the term *kyogyo keiretsu* (affiliated corporate

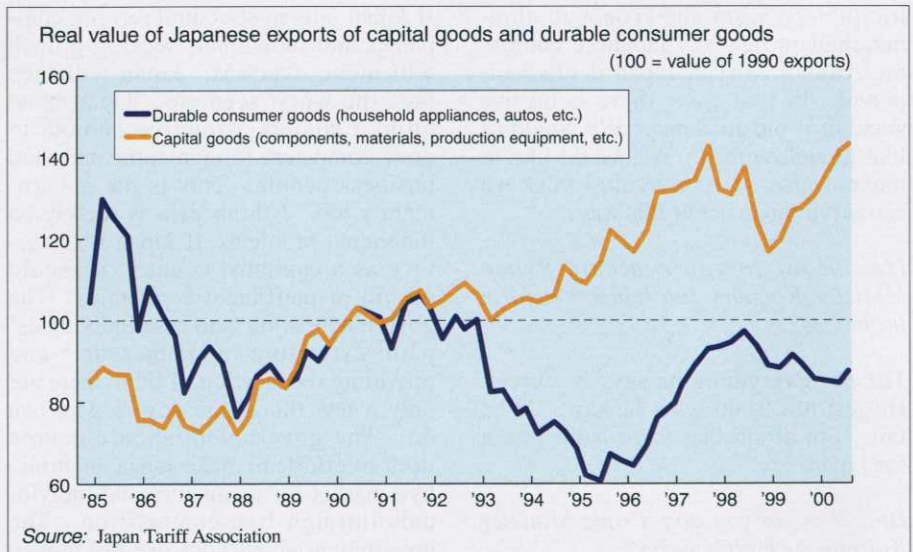
group). Since the Meiji Period (started from 1868), government and large government-supported corporations became the driving forces behind the development of Japanese industry, which was centered upon major corporations supported by large numbers of SMEs. This situation continued for a very long time. Large corporations always took the lead in introducing new technologies from abroad, and a pyramid-shaped industrial structure grew up. If a small company in that period carelessly did business with a company outside its group, it would lose all the business that it had been doing within the group.

That changed all at once with the oil crisis of 1973, when the price of petroleum suddenly tripled and threw the Japanese economy into a severe recession. Small firms found it impossible to rely 100% on the parent company. Indeed, parent companies took a U-turn and began actively advising their contractors to seek outside clients. There were many places around Japan where

big concentrations of SMEs had clustered near the headquarters of a parent company, which, to these contractors, was practically what a feudal lord had once been to the communities that grew up outside his castle walls. After the oil crisis, however, some reform-minded prefectural governors acted to break up these semi-feudal agglomerations, forcing SMEs to disperse to new, more widely distributed, locations. Tokyo's Ota and Sumida wards were typical examples. Any company that attempted to build a new factory there ran into building code restrictions on property area, power consumption and the like. Some companies moved their Tokyo operations to rural areas, while others closed up shop entirely, opting to replace their Tokyo factories with apartment buildings.

These difficult conditions spawned a tough new breed of SMEs. Components and materials that only a single company can offer have rapidly increased in number, and this fact is reflected in trade statistics. Up until

Figure 1



about 10 years ago, autos, household appliances and other durable consumer goods accounted for some 70% of Japanese exports (Figure 1). Today, in contrast, the mainstay of Japanese exports is capital goods – i.e. goods (such as components, materials and production equipment) that are used to make other goods, accounting for 70% of Japanese exports. This shift has occurred because Japanese firms have rapidly moved production offshore, and because the number of goods that are supplied over the world by Japanese firms has increased. This is where SMEs have excelled (Figure 2).

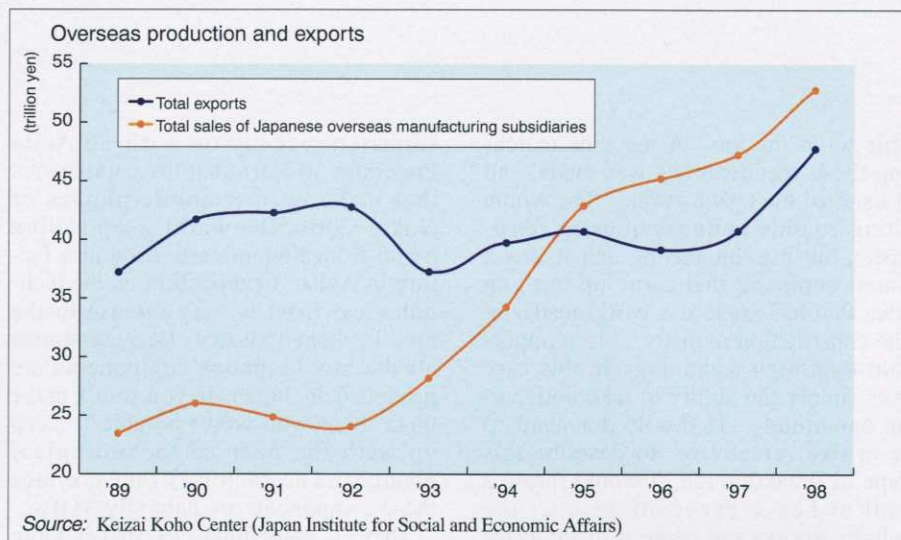
I would also like my readers to note that this shift only started about seven years ago. Many commentators continue to point to autos as a principal Japanese export, but in fact they only account for 17% of total exports today.

An Ultra-High Speed Machining Center

One example of a technology available only in Japan is the machine tool that reduces the net weight of the space shuttle by four tons.

The newest space shuttles are four tons lighter than the earliest versions because the fuel tanks are now made of aluminum-lithium. The light weight and strength of this new material is well known, of course, but the space shuttle fuel tanks couldn't be machined from aluminum-lithium bars using existing technologies, thus the early fuel tanks were made from duralumin. To make the tanks from aluminum-lithium would require that they be shaved off from a solid block. The problem with this method was that it was very easy for the material to heat up and ignite. This problem was solved, however, by shaving the aluminum-lithium so fast that there was no time for the metal to ignite. While regular cutting machines operate at a maximum speed of 25,000 revolutions per minute, a Japanese firm developed a new machining center capable of cutting at 65,000 revolutions per minute. The feat was achieved by Matsuura Machinery Corp. of Fukui Prefecture.

Figure 2



(see page 30) With 300 employees, Matsuura falls into the category of SMEs. The firm's technology lightened the space shuttle by as much as four tons, equivalent to the weight of a truck.

Breakthroughs like this can lead in unexpected directions. I asked President Matsuura Masanori: "It's surely impossible to machine at such an incredible speed unless you've got some way of clamping down really well on the workpiece, isn't it?" I was totally unprepared for his answer. "Actually, all we had to do was fix it in place on the machining center," he said. Asked why, Matsuura replied, "When you machine at super high speed, the weight of the workpiece itself keeps it from moving." I slapped my forehead. Of course! It's the law of inertia that we all learned about in physics class. I was reminded of the master of Japanese *kendo* who stood a length of bamboo on end without any support and slashed it with a sword, leaving the two halves of bamboo standing as before. It was the same idea. The machining center doesn't sell in large numbers because it is very expensive, but Matsuura is the world's only supplier.

Small and Medium-Sized Enterprises: Hotbeds of Technical Innovation

The city of Kochi on the island of Shikoku is home to a company that supplies 70% of the paper used worldwide in electrolytic capacitors (capaci-

tor separators), an indispensable component in electronic equipment. The company's name is Nippon Kodoshi Corp. (NKK). The thinner this type of paper can be made, the better. It becomes useless if it is pierced, yet it must be porous enough to be permeated by the electrolyte. By incorporating these two conflicting properties into a single sheet of paper, the company has gained a stranglehold on the world market. Although they claim a 70% market share, 70% in my experience actually means 100% almost all of the time. Thin and strong Tosa-style paper, a traditional Japanese paper, has long been made in Shikoku, and NKK's product is just an extension of this long and successful tradition.

There is another very interesting company in Kochi Prefecture – Giken Seisakusho Co. When you visit a construction site you will notice that a large number of steel supports, known as sheet piles, must be driven into the ground. Driving piles is a very noisy process, but this Shikoku company has developed a method for doing it without any noise at all. Its product, called the "Silent Piler," is selling like hotcakes throughout the world, especially in Europe, where regulations governing noise pollution are very stringent. The principle behind the product is quite simple. The company measured the approximate amount of force needed to drive a sheet pile. They came up with a figure of around 70 tons, and concluded that a hydraulic machine delivering 70 or more tons of pressure ought to be

able to do the job. A machine matching these specifications was made, and it handled the task just fine. The whole thing sounds quite obvious in retrospect, but it is interesting that it was a small company that came up with an idea that has made it a world leader in the construction industry. More important than high technology in this case was simply the ability to take notice of an opportunity. If you used a standard term like "creativity" to describe this type of breakthrough, it would throw a pall of heavy expectations over the whole process and make it difficult for people to come up with good ideas. It need not be made so complicated; it is simply a matter of identifying problems and solving them.

The Key to Success

As we can understand from the stories above, Japan satisfies all the necessary conditions for the development of SMEs. Various types of plant and equipment are needed to carry out manufacturing, and Japan is certainly not lacking in this regard. It is often said that if someone in Tokyo's Ota Ward put a product drawing on paper and simply dropped it out a window, they'd find a prototype delivered within two or three days, so complete is the range of manufacturing enterprises concentrated in Ota Ward. Of course, the components and materials needed for the manufacturing process can also be obtained from somewhere within Japan. Because Japan has about the same landmass as the state of California, it only takes a day at most to convey things anywhere in the country.

Of even more fundamental importance than that, however, is the Japanese people's enthusiasm for the act of manufacturing, and their curiosity. These traits have come into sharp focus recently in connection with the trend toward ever increasing miniaturization of information technology devices. It all got started with mobile telephones, where no other nation in the world rivals Japan's ability to miniaturize. More and more components are made only in Japan. I was

surprised recently on a trip to Akita Prefecture to learn that the components that make up the mobile phones of Nokia Corp., the world's top-selling brand from Finland, are made at a factory in Akita. Competition on the technological front is very intense in the mobile phone industry. Because almost all the mobile phone components are produced in Japan, if you don't make them there, you won't be able to keep up with the pace of technological change. The factories that produce these components are naturally SMEs.

There is something else that is more important still. A few paragraphs earlier I mentioned the traditional Japanese paper that was modified to make a top-quality capacitor paper, and there are many other examples of SMEs achieving success by taking advantage of traditional Japanese technologies.

There are many companies in Kyoto that have become world-leading suppliers of ceramic electronic components. Kyocera Corp., for one, has developed into a giant corporation, and there are many other ceramics companies that have done extremely well, including Rohm Co., a maker of hybrid components. The ceramics industry there is an offshoot of Kyoto's Kiyomizu ware. In the Nagoya region of Aichi Prefecture, as well, outstanding ceramics firms have grown up on the foundation of the area's traditional Seto ceramics.

The "Motorboat" Model of Management

I once received a grant from Japan's Small and Medium Enterprise Agency at the Ministry of Economy, Trade and Industry (METI) to carry out a study of the managerial styles of Japanese SMEs, and I discovered a unique Japanese management style at the firms I studied. Whereas large corporations operate like large ships, SMEs are more like little motorboats and require an entirely different approach.

Most studies on business management concentrate on the steering of "big ships," but the methods described in such studies would sink a motorboat. In

my study I discovered many qualities that are important in the management of SMEs. I shall describe six of them here:

Decisiveness

If you wait until everything is totally certain before making a decision, you will invariably end up "a day late and a dollar short." When proper timing calls for a decision to be made before everything has been nailed down, then a decision simply must be made. SMEs are completely different in this respect from government agencies and large corporations. Decisiveness is a key factor. Successful SMEs face crises from time to time, and the key to their success lies in how they react at these times. No matter how many company presidents you ask, they will all tell you that the biggest factor behind their success was being decisive at these critical junctures.

Keeping abreast of relevant information

I do not mean here that you should go out and read a lot newspapers or books. I am talking about networking. People have the most valuable information of all. That is why the owners of SMEs must always spend time building and maintaining a network of personal contacts. They must do such a good job of it that if they should go a while without contacting someone, the other person should get worried and make a phone call. People who really know how to play the game have long used some of the same basic tactics including cementing alliances and going together on overseas trips. Sometimes the key is to invite along the wives, or to go together with the family of your child's classmate.

Organizational flexibility

The world is a fast-changing place. As soon as a need is perceived, a SME must move their organization forward quickly by deploying their personnel in a most optimal way. Regularly-scheduled assignment rotations like those carried out by government agencies would be an absurd idea for an SME. Work is done by people, and that is

Figure 3 Key optical goods with rapidly growing domestic production

2001 forecast		
	Total production (million yen)	Growth from previous year (%)
Passive fiber optic components	180,067	66.9
Optical measuring devices	39,001	56.2
Optical transmission links	145,516	55.4
Solar batteries	123,500	46.4
Optical connectors	53,211	44.6
Display devices*	702,794	40.9
LEDs	653,887	34.7
Photodiodes	270,822	30.0
Optical disks	1,481,250	23.3
Display elements	2,100,803	23.3

Note: Based on figures released by the Optoelectronic Industry and Technology Development Association. Numbers marked with an asterisk (*) have been revised.

why these firms must maintain a tiptop organization and labor force at all times.

Teamwork

Discord among the crew will sink a small boat. Ensuring proper teamwork is naturally the responsibility of the company president, who must take good care of each employee. When someone in the company gets married, the president must naturally act as the go-between. That idea may sound extremely "Japanese," if not downright corny, but anyone who reacts that way clearly isn't closely familiar with life in an SME, where people deal with each other face-to-face on a daily basis. Teamwork isn't a theory from the ivory tower; it is a way of life, based on bonds between individual people.

Financial strength

Mention "financial strength" and the first thing that pops into the mind is the collateral value of a company's assets, but in reality, the credibility of the company's president is the most fundamental factor. After money has been loaned, it is the lender who sits on pins and needles. Once money has been borrowed, the party with the money in hand can do with it as he sees fit. The lender would much rather get back his money than have to deal with collateral, however valuable that may be. This fact must be clearly recognized. So the question arises: How does one gain the trust of others? The only way to do that is to keep one's promises.

Effective use of outside resources

There is a limit to the in-house capabilities of an SME. A small company has to make use of outside resources in

many different ways. There is a six-person company in Oita Prefecture that developed a new way to make glass products. The ashtrays, flower vases and other such products they had originally sold were poorly designed and very unattractive. Unsatisfied, the company hired the services of a world-famous industrial designer. Once the designer had done his magic, orders started pouring in immediately, including one for a glass tower to be used at an event. Illuminated at night, the tower was a beautiful sight, and sold for a price of ¥100 million. When a product is really good, the cost price is not a problem; people are willing to pay for a good design. By getting outside help, this company was able to grow.

The Road Ahead

The preceding part of this article sums up the current state of SME operations in Japan, but what should they be doing in the future? Looking at the strengths and potential strengths of SMEs, I do not expect them to be beset by any major problems in the next 10 years. In particular, they excel at applying new technologies and adapting to changing situations. The Optoelectronic Industry and Technology Development Association reports that this ¥3 trillion industry has posted annual growth of 30% for several years in a row (Figure 3). SMEs have played an important role in this success. The industry is still in a growth phase, and for the foreseeable future, it appears that firms will be straining to the limit just to keep up with evolving technologies.

This is just one example, and new technologies will surely continue to be developed. A friend of mine from the U.S. Department of Defense came to Japan in May and told me that every month 5,000 new technical articles and 2,000 patents come out, and he is tear-

ing his hair out trying to keep up with the flow of information. Based on their past performance, I am optimistic that Japan's SMEs will do a very good job of dealing with the flood of new technologies.

I do, however, see one very worrisome factor: Japanese youth are increasingly turning their backs on careers in the manufacturing sector. Around 1990, youth began to look with scorn on manufacturing, and people began to speak of "3K jobs" – *Kitsui* (demanding), *Kitanai* (dirty) and *Kiken* (dangerous). This is because we have come to enjoy a high standard of living now in Japan, and people are beginning to feel like it's not necessary to work so hard anymore.

An International Youth Skill Competition is held every year, and Japanese contestants always do quite well, but the Japanese news media barely report on it at all, while banner headlines greet the overseas hiring of a Japanese football player. In South Korea, by contrast, anyone who takes a gold medal in the International Youth Skill Competition is given a lifetime stipend. The late Prime Minister Obuchi Keizo was so concerned about the declining enthusiasm for manufacturing in Japan that he commissioned me to organize a colloquium on the subject, and it is expected that METI will draw upon the conclusions of the colloquium to formulate new policy.

In the final analysis, it is manufacturing that drives the Japanese economy, and SMEs are the mainstay of the manufacturing sector. Japanese society is characterized by many ebbs and flows, but it is strong enough that we can expect attitudes to return to normal sooner or later. Although the economy is in the doldrums for the time being, this is all for the best in the long run. I firmly believe that today's troubles will trigger an eventual revitalization of manufacturing. JTI

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