

The Environment Industry in Hamamatsu

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1. Foreword

In the 1970's, the production of equipment to prevent pollution grew rapidly and remarkably, driven and prompted by the enforcement of the anti-pollution laws in the developed countries. Almost all of these types of equipment were end-of-pipe types and the producers of these types were categorized as the environment industry.

Today, new kinds of environment-related business which produce less environment-damaging goods and offer energy and/or waste saving services have been developing at a fast pace in Japan and in the other OECD countries. As a result, a great number of studies concerning those businesses have been done and published. But they fail to relate the newly developing environment-related industry to the traditional producers of anti-pollution equipment in terms of the definition of the environment industry.

Recently the OECD defined the environment industry as "providing goods and services to reduce environmental pollution, clean up past environmental damage and improve environmental performance" (OECD, 1996-b, P.3). If we follow this simple definition, different kinds of environment-related business will be included in the environment industry and we can point out some characteristics among them and clarify the differences between the traditional environment industry and the new environment industry in Hamamatsu.

2. Purpose and Procedure of the Research

The author and the seminar students of Environmental Economics in Hamamatsu University started to research environment-related companies in Hamamatsu in 1995. The purpose of our research was to find answers to the following questions :

- (1) What kind of original business did they have? When and what kind of environment business did they enter?
- (2) What kind of circumstances were there when they entered the environment business?

burning system construction business and preparing to cooperate with big engineering enterprises which produce waste burning equipment. There were no regulations against the amount of dioxin emitted from waste burning institutions in Japan until 1996. That is why he expected that the government would soon have to regulate it in the near future (in fact, the regulations were introduced in 1997) and his business network, built with the help of the official meetings with other big environment enterprises, could be helpful in cooperating with them. On top of that, he had another expectation that the needs of dust collectors would increase because the powder-coating systems started to prevail in the Japanese automobile factories. In that case Muramatsu would surely have advantages ahead of other competitor companies in this field.

Case 2 Daigaku Sangyo Co., Ltd.

Daigaku Sangyo produces city-water purifiers and waste-water disposal equipment. The production of city-water purifiers is the main business, which includes the production of some emergency equipment for natural disasters, such as portable water purifiers and portable bathrooms. The production of waste-water disposal equipment is the secondary domain. Accompanying these business, it sells some chemicals to control the quality of water and conducts services to analyze the quality of the water for its clients.

(1) Establishment

The founder of Daigaku Pharmacy, the former company of Daigaku Sangyo, Yoshihito Sobukawa, started his career as a technical official of the Health and Welfare Ministry before the Second World War. In 1949, he resigned from the Ministry to start a pharmacy shop in Hamamatsu and started to sell chemicals to prevent infections to the local waterwork bureaus.

In 1960 his son, Takahito Sobukawa, who got a job as a salesman in a big pharmaceutical company after he graduated from a college of pharmacy, participated in his father's business. He incorporated the water-relating section of the pharmacy and established Daigaku Sangyo in 1967 with the capital of 2 million yen. This undertaking corresponded to the new business circumstances that the drink-water regulation acts were enforced and small-sized water suppliers were prevailing in villages in Japan. It sold the first water purification systems to a food processing company and the second to Yamaha in Hamamatsu in the first year of its establishment. Its competitors were Kurita and Orugano, today's leading environment

enterprises in the water purification business field.

(2) Development

In 1970, Daigaku Sangyo set up a water quality analyzing laboratory and its capital increased to 5 million yen. The major clients of this company were the municipalities, but the company gained private clients in Hamamatsu, such as Honda, Suzuki, Kawai and Hamamatsu Photonics in the waste-water disposal business field.

In 1976, Daigaku Sangyo was advised by an officer of the water supply section in the municipality to develop portable water purifiers for natural disasters. After the equipment was developed, Shizuoka Prefecture adopted and bought them. Soon after this innovation, the network of sales agents all over the country was built up and the market of this equipment increased gradually. The share of their market accounted for about 60% in Japan in 1993. Along with its growth in this field, the sales of city-water purifiers and waste-water disposal equipment also increased gradually. In 1987, Daigaku Sangyo assisted a subsidiary of Yamaha Hatudouki in producing and selling drink-water purifiers in Indonesia.

(3) Present

In 1996, the capital of Daigaku Sangyo was 24 million yen and the annual sales was 1.35 billion yen with 28 employees. Half of the total sales came from the city-water purification and waste-water disposal equipment business and the other half came from the sales of new emergency apparatus for natural disasters.

(4) Future

The president of Daigaku Sangyo, Takahito Sobukawa, is planning to sell about 7 billion yen per year and employ 50 people in the near future. He is determined to keep doing his best to take any niche water-related business opportunities to survive harsh competition with big enterprises in this domain. Therefore the production and sales of the city-water purification system, which cost over 300 million yen, was not accepted by the company, neither was the waste-water disposal system which cost over 100 million yen. This is because the maintenance works of these systems would be so frequently needed that the new and profitable business to innovate and sell emergency equipment for natural disasters would be restricted. Daigaku Sangyo will radically shift its business domain to this new field with the help of the national-wide network of the sales agents that was built up during the last decade.

4. Similarities and Differences between these Two Companies of the Traditional Environment Business in Hamamatsu

We would like to compare these two companies and list up their similarities and differences. (Refer to table 1.)

4-1 Similarities

(1) Both companies entered the environment industry from the quality control business of natural resources. They didn't have much technical expertise at the beginning, but gradually acquired the knowledge about air and water quality control. They broadened their market responding to the increasing public need of less-polluted air and water together with the strict public regulations against waste air and water emissions.

(2) Both can be labeled as small-sized companies, but are mature in the sense of business today. In general, the traditional environment industry is mature in any developed country. We can observe some symptoms of maturity in the fact that the processing lines of environment equipment have been well established and the equipment has been standardized. Other symptoms are caused by the severe competition of the market. We can find these symptoms existing in both companies and this leads to the fact that they have to specialize deeply in their own domains and explore the niche and new market to be able to take advantage of their expertise.

(3) For both companies, the local business circumstances in Hamamatsu worked as an incubator and even now the big enterprises such as Yamaha, Kawai, Honda and Suzuki are still their main clients.

4-2 Differences

(1) Muramatsu's main products, dust controllers, are end-of-pipe type anti-air-pollution equipment, and this company belongs to the environment industry, according to the OECD definition. However, what Daisaku Sangyo is doing cannot be categorized as the pure environment industry, because their main product, city-water purification equipment, cannot reduce environmental pollution directly but heighten the quality of drinking and industrial water, though one of the other products,

Table 1: Comparisons between Two Traditional Environment Business in Hamamatsu

company names	Muramatsu-Huso Engineering	Daigaku Sangyo
establishment year	1946	1949
original business fields	duct work for factories	pharmacy shop
first year of the environment business	1958	1967
initial environment business	production and selling of dust collectors	production and selling of city-water purification and waste-water disposal equipment
background of the entrance	increasing need of dust-free rooms	enforcement of drink-water regulation acts
initial clients of the environment business	Yamaha and Kawai	a food processing company and Yamaha
present capital	35 million yen (1996)	24 million yen (1996)
present annual sales	1.2 billion yen (1996)	1.35 billion yen (1996)
number of employees	45 (1995)	28 (1996)
present business	production and selling of dust collector	city-water purifiers, emergency apparatus for natural disasters and waste-water disposal equipment
present main clients	Yamaha, Kawai, Suzuki, Honda, JR and JT	Yamaha and Local Governments
business links	member of industrial machine association in Japan	local sales agent network all over Japan
markets abroad	Poland, Thailand, Germany and Russia	Indonesia
future business	dust collectors and toxic air disposal equipment	water purifiers and emergency apparatus for natural disasters

waste-water disposal equipment, is an environment-improving one.

(2) Muramatsu's clients are mainly private enterprises which are responsible for taking measures against their own air pollution, but Daisaku Sangyo's are mainly municipalities which are responsible for maintaining the quality of drinking water.

The former belongs to the official association of environment equipment producers and tries to cooperate with the other big environment enterprises by participating in joint-venture projects. On the other hand, the latter seeks new members of local sales agents all over the country to promote the sales of their emergency apparatus for natural disasters.

(3) To break through the stagnation of the market situation of the environment industry, Muramatsu is entering new business fields such as introducing the system to dispose toxic air emitted from the waste burning systems and the painting processes of automobile factories, while Daisaku-Sangyo is trying to innovate the new emergency apparatus for natural disasters. As a result the former will remain in the environment industry, but the latter may not in the sense of definition given by the OECD.

5. Features of the New Environment Industry in Hamamatsu

CASE 1 OM-Solar Association Co., Ltd.

OM-Solar Association offers know-how and equipment concerning designs and construction of energy-saving and environment-friendly houses for its association members, who are building contractors all over the country. And OM Institute, its annex institution, is engaged in R&D in this field of business.

(1) Establishment

This association was established by Marumo-Nakamura Housing Co., Ltd., a contractor in Hamamatsu. It started with 26 contract firms (association members) with the capital of 2 million yen in 1987. The founder of this housing system, Akio Okamura, an architect and a professor emeritus of Tokyo Art University became the director of the Institution. This housing system was originally attributed to making some devices in which cold open air is introduced under the roof, warmed by solar thermal and charged under the floor in winter, while the hot open air under the roof is discharged outside quickly in summer. This function as a natural air-conditioning system was named "passive solar system". Further, together with the introduction of a solar thermal hot water supply system and photo voltaic power generator on the roof, this system makes it possible to build energy self-sufficient houses.

(2) Development

The association members consisted of 125 contractors and the annual sales was 350 million yen in 1990. The number of members increased to 300 and the annual sales was 3.35 billion yen in 1995. This rapid growth in the early 90's is attributed to the unique marketing strategy of this association, the adoption of the voluntary franchising system called "volunchise system". Using this system, the association published special books and magazines to introduce their solar application housing system. The association also put a lot of advertisements for the public in the biggest newspapers during this period.

In 1996, this association and institute tied up with Canon to develop photo voltaic power generators and with Yuasa to develop wind power generators (till May 1998).

(3) Present

In 1997, the number of contractors who became association members is 311 and the annual sales was 7.13 billion yen with 77 employees. The capital reached 80 million yen in August.

(4) Future

The association has specific business plans for the near future. There are some prefectures where there are not OM-Solar Association members, so the association is going to exploit new members in those prefectures. Secondly, the association will advertise their system more frequently and arouse public needs for the system to support their members' business. Thirdly, the association will set up their own distribution center of the equipment for their housing system and build its own office building using the OM-Solar housing system. Finally, the laboratory will develop the know-how for more energy-saving and environment-friendly housing and tie up with other innovative enterprises.

CASE 2 Seikatsu-Soko Co., Ltd.

Seikatsu-Soko deals with used electric home appliances, used furniture and antiques, etc. in Hamamatsu and has many franchise shops all over the country. The company starts gathering home and office waste to recycle or dispose of them under the official license issued by the Hamamatsu municipal government in April 1997.

(1) Establishment

The founder of this company is Kyuichiro Horinouchi, whose former business was a director of a sales company dealing with hot water suppliers using the solar

thermal system, but the company went bankrupt. He started the new business mentioned above with a part-time employee and earned 20 million yen in 1988. The reason for starting this small company was that he wanted to dedicate himself to resource-saving and environmental protection, which was the same when started his former business.

(2) Development

The first franchise shop of Seikatsu-Soko opened in Toyohashi in 1990. Seikatsu-Soko was reorganized as a corporation limited in 1992 and its annual sales for that year was 100 million yen. According to the increasing the number of franchise shops, Seikatsu-Soko built a distribution center of used goods in Hamamatsu in 1994, and built a repairing center of electric refrigerators in 1996. In this center, CFC gas was removed and stored from broken refrigerators to be reused or to be disposed of in the near future.

(3) Present

Seikatsu-Soko had 90 franchise shops and the annual sales were 420 million yen with 40 employees in the fiscal year 1996. It increased their capital to 152 million yen in July 1997 and the estimated annual sales of fiscal year 1997 would be expected to reach 820 million yen. Soon after the new waste collecting and disposal business started in April 1997, when the container recycling acts were enforced, this company made contracts with 45 offices to collect their waste. The estimated annual sales of this section would be expected to reach 100 million yen.

(4) Future

Seikatsu-Soko plans to offer stocks for subscription through security companies in 2001. It estimates that its capital will increase to 250 million yen by then. The president, Kyuichiro Horinouchi, expects that the Japanese government will soon start to force the producers of electric home appliances to buy them back for recycling (will be enforced in 2001). This means that the market of used electric home appliances will become tight. So in the near future he will intend to buy electric home appliances from not only domestic producers but also foreign producers in order to lease them as a business. Further more, he has bought a cite to build up his own waste disposal plants to make his business more responsible for the environment. In other words, he wants to stress resource-saving and environmental protection by introducing the lease system of durable appliances and operating waste disposal plants.

6. Similarities and Differences between these Two Companies of the New Environment Businesses in Hamamatsu

We would like to compare these two companies which are engaged in the new environment business in Hamamatsu and point out a few similarities and differences between them. (Refer to table 2.)

6-1 Similarities

(1) Both of these companies were established by the entrepreneurs with a clear environment-oriented mind in the late 80's, when we were facing new phases of the environmental problems such as global warming and waste overflow. They entered this niche and emerging market because they thought there would be great possibilities to grow and to develop for a few decades.

(2) Both of these companies have been publishing their own circulars for franchises and are good at using newspapers or TV programs to get good publicity, which contributes to the quick increase of its annual sales and capital.

(3) They were established in Hamamatsu, but local business circumstances at that time were not functioning as an incubator. They produced ready-made equipment and standardized services for resource-saving and environment-friendly consumers directly or indirectly. They managed to introduce franchise or quasi-franchise systems easily and to build up a national-wide sales network quickly.

6-2 Differences

(1) OM-Solar Association clearly belongs to the environment industry. But it is very problematic to decide whether Seikatsu-Soko's business as a whole can be categorized in the environment industry or not, because on the one hand its reuse business contributes to saving resources and waste, but on the other hand it helps leave old energy-wasting electric home appliances prevailing on the market and prevents new energy-saving ones from prevailing on the market. However, if we follow the OECD's wide definition mentioned previously, we can say that the entrance into the environment industry by Seikatsu-Soko in 1988 was the starting point of their true environment business.

Table 2: Comparisons between Two New Environment Business in Hamamatsu

company names	OM-Solar Association	Seikatsu-Soko
establishment year	1987	1988
original business field	supplying the know-how of eco-housing and relating equipment	buying and selling of used electric home appliances, furnitures, etc.
first year of the environment business	1987	1988
initial environment business	supplying the know-how of eco-housing and relating equipment	buying and selling of used electric home appliances, furnitures etc.
background of the entrance	increasing needs of eco-housing	growing needs of waste-minimizing and resource-saving life style
initial clients of the environment business	associate contractors(direct) green consumers(indirect)	green consumers and firms
present capital	80 million yen (1997)	152 million yen (1997)
present annual sales	7.13 billion yen (1997)	820 million yen (1997, estimated)
present number of employees	77 (1997)	40 (1996)
present business	supplying the know-how of eco-housing and relating equipment	buying and selling of used electric home appliances, furniture, etc. and waste collecting and disposal
present main clients	associate contractors and green consumers	franchises and green consumers and firms
business links	associate contractors and Canon (Yuasa, till May, 1998)	franchises and venture capitals such as Sanwa Capital, Tokyo Kaijo Capital, Nissei Capital and CSK Venture Capital
markets abroad	-----	-----
future business	supplying the know-how of eco-housing and relating equipment	waste collection & disposal and leasing & recycling of electric home appliances

(2) OM-Solar Association is based on their own technical innovation in the field of housing and is continuing R&D in their own laboratory or in collaboration with other enterprises, while Seikatsu-Soko is based on their own non-technical innovation which was to combine the used goods distribution business with waste collecting business. The latter doesn't have any technical expertise to dispose of waste, so the company will have to pursue technical innovations through collaboration with other enterprises in the field of waste disposal.

(3) OM-Solar Association is technology-oriented and will continue their business of Eco-housing, while Shikatsu-Soko is so growth-oriented that it will seek new and profitable environment related business such as lease business of electric home appliances, as well as the waste collection and disposal business. As a result it will need more investment (venture capitals) and will have to take great risks.

7. Similarities and Differences between the Traditional and the New Environment Business in Hamamatsu

We can point out a few similarities and differences between the traditional and the new environment business. (Refer to Table 1 and Table 2.)

(1) The four companies mentioned above are all small-sized and were more or less dependent on the development of the national environment policies when they entered the environment industry. They have developed their business and accumulated their technical or marketing know-how gradually and have been seeking a niche and new environment-related business chances. These are their similarities, but there are also some differences between the traditional and the new business.

(2) The traditional environmental business were transformed from the related fields before the 70's. They mainly used to produce anti-pollution equipment for neighboring factories and the local governments. The local business circumstances were functioning as an incubator for them and restricted their marketing fields locally at the beginning. Even now their sales fields are restricted in Shizuoka prefecture. But their products were bought by some developing countries. After their development during the 70's-80's when the government pollution regulation became strict, they matured in the 90's and had to seek a new niche in domains to apply their accumulated know-how of quality control concerning natural resources.

Contrary to this, the new environment business, established by environment-oriented entrepreneurs in the late of the 80's, mainly produced standardized equipment and offered services to improve the environment performance of consumers. Now their business should not be restricted to the local field. They will have to pursue a nation-wide business, but their business is restricted to the domestic field at the present stage. Anyway, they are growing constantly and maintain their venturesome environment-friendly mind.

(3) The traditional environment industry is based on the public consensus concerning the anti-pollution policies that only the governments can regulate the emission by introducing "polluter-pays-principle" to the market and burdening social costs on polluting private enterprises. This is because they cannot regulate it by themselves. On the contrary, the new environment industry is based on the changed public consensus that the government is not only a regulator, but green private enterprises and green consumers, which are willing to internalize the other principle of "pollution-prevention-pays" and their social costs, can contribute to preventing environmental damage and improving the environmental performance.

8. Conclusion

This report is based on the research (from 1995 to 1997) concerning the environment industry in Hamamatsu. The purpose of this research was to contact the environment-relating companies, to classify them into a few types and to examine their similarities and differences. As a result, six companies were identified as the environment industry according to OECD's definition, and four companies allowed us to interview their management. The interviewees consisted of two traditional producers of anti-pollution equipment and two emerging firms providing green consumers with a resource-saving way of life.

The most interesting finding of this research was the differences between the above two categories, especially the different economic and institutional background of their development. On the one hand, the traditional environment business was developed together with their local major clients which had to observe the governmental pollution control. On the other hand, the new environment business emerged because of the increasing the number of the green consumers and firms, whose criteria to choose goods and services were made by not only their prices, but also their "environmental performance".

Based on this research, the OECD's concept of the "environmental service" and

the "environmental performance" should be reexamined so that we can more strictly conceptualize the environment industry.

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