

Chaper 6 pilot project

CHAPTER 6 PILOT PROJECT

On the selection and execution of the pilot project, Hangzhou city and the investigation team had arranged in the primary site investigation started from 10 October 2000, reached an agreement on 31 October and concluded a memorandum. The contents consist of advices to (1) Construction of a network for Small and Medium enterprises and (2) Establishment of Investment Fund Company. The execution term and evaluation of the projects have been requested by Hangzhou side to elongate up to June of the next year, not March. After that, the both projects entered into execution, getting approvals of JICA.

6.1 The object and results of Construction of a network for Small and Medium enterprises as the pilot project

As disadvantage points of Small and Medium enterprises compared with large enterprises, access to information is difficult together with acquirement of talents, procurement of fund and acquirement of production management technology. In particular, at present when IT revolution is progressing, the acquirement of information utilizing IT is an important point.

In the visits of 52 enterprises performed in the primary site investigation, it is confirmed that a will to strengthen the competitive power utilizing IT. So that, 41 enterprises among answered 43 enterprises are using personal computers, 9 enterprises already have opened home pages and 17 enterprises have been utilizing networks. Furthermore, the high utilization rate of personal computers represents to be easily able to come along IT utilization. The pilot project in this time includes trainings for Small and Medium enterprises increasing chances to attend the utilization of IT.

While, at present, China is in the starting stage of Small and Medium enterprise policy and it is necessary to thoroughly bring the policy contents into Small and Medium enterprises, new technology is already introduced in whole China and within Hangzhou, expecting the effect of introduction with network, and also expecting approach to market and technology, linking with not only China inside but also the existing network including Japan. Already Small and Medium enterprises networks may be opened in Shanghai and Shenzhen, but these are large scale including procurement and arrangement of administration. The opening of network for Small and Medium enterprises is considered to have meaning.

As a part of this investigation, a network for Small and Medium enterprises is adopted as a pilot project to propagate the policy information of the city and offer the information of the market or technology. This project is performed as a pilot with a limited object, under the given conditions of a limited term and limited fund. Owing to endeavor of Hangzhou city, the network for Small and Medium enterprises was built up in March 2001, and started actual operation. After that, it is progressing to revise the data and link to the networks to existing in China, Zhejiang, or Hangzhou.

The maximum effect of this pilot project is to prove that a network for Small and Medium enterprises can be built up in a level of city government of China with a comparative small budget.

Of course, the present operation state remained items to be executed from now the items, such as link with oversee net works, propagation of IT to Small and Medium enterprises, etc. Further, it is also necessary to add contents effective for Small and Medium enterprises. For equipment set up at this point, problems of ability shortage of the server and the expansion of correspondence to the risk etc. are clarified, and points, which should be improved in the future, are also clarified. These items can be progressed concretely proving with operating network, not only considering on head. Therefore, the network for Small and Medium enterprises as a pilot project has great meaning.

The numbers of existing networks for Small and Medium enterprises in China are small. The case of Hangzhou is recognized as one case of such network by China central government. If a similar network for Small and Medium enterprises is planned in other cities, this case in Hangzhou may be referred. And, If similar networks for Small and Medium enterprises are built up in other cities, more effective operation can be expected through exchanging contents etc. each other. Further, if the central government can support access to oversea information for Small and Medium enterprises of each city, it is expected that a barrier of language will be easily facilitated.

6 1.1 Operation contents of network for Small and Medium enterprises initially planned

Network for Small and Medium enterprises can be utilized to various uses, but shall be executed for the following items in this time of investigation, because of short term. When once the net is built up, it become possible to be extended to the other uses,

- (1) Transmission of administration and finance information of Hangzhou city
- (2) Introduction of new technology
- (3) Presentation and discussion of request and opinion from Small and Medium enterprises
- (4) Access to existing various nets
- (5) Propagation of IT to Small and Medium enterprises

As for establishes of venture fund, to set up the Web site for venture finance and venture investor is added in this net.

The following item is not made object in this time

- (6) Construction of B to B by information net between enterprises and connecting net between job seeker and job supplier.

6.1 The object and results of Construction of a network for Small and Medium enterprises as the pilot project

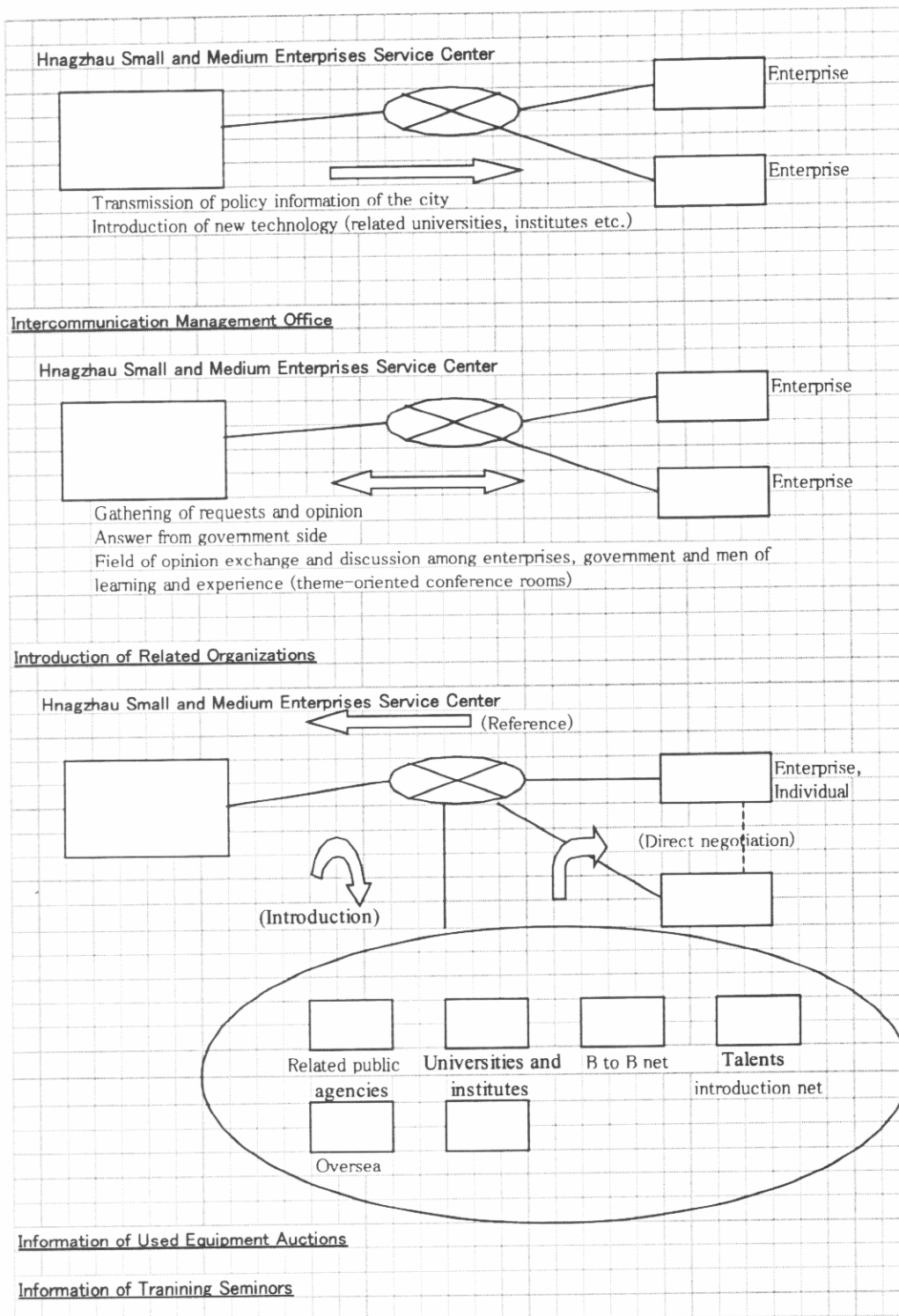


Figure 6.1.1 Conceptual figure of network for Small and Medium enterprise

In the followings, the (1) to (5) mentioned above are supplementary explained.

(1) Transmission of administration and finance information in Hangzhou city

As many Japanese local autonomies executed, the information and procedure of favorable treatment and financing policy for Small and Medium enterprises are described, and it is aimed that the enterprises increase the chances to enjoy those benefits. In Japan besides the above-mentioned items, opening of seminars including introduction of management, market, technology, etc are also informed. For such Small and Medium enterprise having no personal computer, personal computers are provided in six districts within Hangzhou city to be able to access and propagate IT.

(2) Introduction of new technology

In China, as shown in the followings, several organizations introduce new technology, it is meaningful to introduce the technology suitable for Small and Medium enterprises from these existing technical information sources. Further, in Hangzhou city, there are many growing firms, but there are also some enterprises late to modernizing, it is considered to utilize them for transfer of business operation and management control method.

- ① In China, Technology Development and Equipment Department had been established in 1989, as Hangzhou city, Hangzhou new technology promotion station joined to it in May 1999. New technologies are introduced by means of seminar, technology exchange meeting, magazines and the Internet "China technological creation network" etc.
- ② Product Education Research Institute, established in 1993, promote technology exchange among institutes and enterprises (government-owned), introduce developed technologies of universities to enterprises and contrary let universities to develop technologies desired by enterprises.
- ③ Society for Industrial Technology Development Research, established in May 1991, is a discretionary group consisted by chief engineers, general engineers etc. of private enterprises (138 companies at present), where subjects on the technology development are treated. At present, network construction is planned.
- ④ Hangzhou Science and Technology Committee Information Institute has a information network for science and technology. Under cooperation with Tsinghua University, documents of science and technology, patents, information gathered by researchers etc. are offered free through the Internet. It aims to offer information to researchers of enterprises, universities and so on. Enterprises in Hangzhou are almost small or medium size, therefore, this Internet is actually only for Small and Medium enterprises.

- ⑤ Here are enterprise technology centers of private enterprise base. (According to the report by Director Li of Economic Commission, there are in Hangzhou 5 national level center and 13 province level center including of "Matsushita").

(3) Statement of requests and opinions from Small and Medium enterprises and discussion

This is the theme requested by Hangzhou Department of Small and Medium Enterprises. It is reported that in Hangzhou there are organization for classified by industry sector and enterprise groups, which have good relationship with the Department of Small and Medium Enterprises. Therefore, if opinion exchange with those enterprises can be performed, Hangzhou will be possibly suitable place to hear opinions of such enterprises. For this purpose, use of board will be considerable.

(4) Access to existing all kinds of network (linkage)

In the 52 visited enterprises, there are some enterprises taking part in existing network and operating their business through it. Many other enterprises desire also use of IT to get market information. According to the investigation until the present, the above enterprises, which are taking part in existing network, are accessing mainly to Chinese networks. We have not yet met such enterprises that are accessing to oversee information of JETRO in Japan etc. In future, under development of globalization, it is considerable that use of oversee networks will give big chances to their users. It is also important to list up organizations to be linked, to try to link any network of these organizations, according to concrete request of enterprise, and to demonstrate the effect to the enterprise.

(5) Proliferation of IT use to Small and Medium enterprises

Even though good information is offered, if number of the Small and Medium enterprises using the information is small, the effect will be limited. Therefore, it is important that proliferation of IT use shall be promoted. It will be promoted through the training with three personal computers for training and also use of personal computers placed in six districts (each one unit)

6.1.2 Establishment of network for Small and Medium enterprises

The content of mutual consent between Hangzhou city and the investigation team had been approved by JICA, and the establishment of network for Small and Medium enterprises was started. A private consultant company appointed by Hangzhou city and JICA using equipment and software provided by JICA performed concrete work, under cooperation of specialists of the investigation team.

The situation until the establishment, during stay of the specialists of the investigation team, is written as follows, but it is natural that the work has been continued by Hangzhou side also during absence of the specialists.

The primary site investigation: between 10 and 23 December 1990 --- Confirmation of contents to be performed with the network for Small and Medium enterprises, needed equipment and software and procedure until the establishment.

The second site investigation: between 5 and 14 January 1991 --- Confirmation of delivery of the material arranged by JICA Beijing and contents to be provided by Hangzhou city.

The third site investigation: between 11 February and 24 March 1991--- In parallel with installation of network operating software, connection with outside, preparation of HP programming etc., also input work of contents has been performed.

6.1.3 Operation starting of the network for Small and Medium enterprises and it's performance

Owing great effort of Hangzhou city side, the network could be placed before public gaze on 28 March, although leaving a few problems. According to the information from Hangzhou city, the network is operating successfully and getting good reputation from the persons concerned of the nation, the province and the city and their respective industry of public society. The URL of the Web site is "<http://www.hzsmesc.com>". Present contents are as follows.

- ①Window of policy: Offer of the policy information of the nation, the province, the city so on
- ②Various procedures: Procedure guidance from establishment and operating to dissolution of enterprise.
- ③Mediation service: Introduction of related offices (lawyer, accounting, public health etc.).
- ④Technical information. Linkage with organizations of research and development and offer of the latest technical information.
- ⑤Enterprise flower garden: Site for introduction of member enterprise and opinion exchange.

The front cover of the pamphlet distributed by Hangzhou city is shown at the end.

Price of equipment and software arranged by JICA was ca. 400,000 Yuan, fee for local consultant arranged by JICA was ca. 200,000 Yuan and total expenses borne by China side was 268,800 Yuan (personal expenses 188,400 Yuan, office rent: 36,000 Yuan, water and electricity expenses: 14,400 Yuan, communication and traveling expenses 8,000 Yuan, server maintenance expenses: 22,000 Yuan), and the gross total was ca. 870,000 Yuan (Fee for Japanese specialists and interpreter is not included.)

6.1.4 Operation expenses — Monthly expenses

Future operation expenses

Table 6.1.1 Personal expenses of the network for Small and Medium enterprises

	Number of person	Monthly expenses (in Yuan)	Total (in Yuan)
The person in charge for IT in every district	6	1,500	9,000
Input work	2	1,500	3,000
Database maintenance	1	8,000	8,000
Programmer	1	10,000	10,000
Manager	0.5	15,000	7,500
Total	10.5	36,000	37,500

*The secondary developing expenses for software is not included in the above figures

* Total yearly expenses become 450,000 Yuan. As further expenses, office room rent etc. shall be also counted

6.1.5 Evaluation of the network for Small and Medium enterprises

The network for Small and Medium enterprises has just started its operation and, at present, it is yet at the stage of advertising and publicity activities and needed considerable time to evaluate the effect of the network. But the prompt evaluation according to the information from Hangzhou city on 8 June indicates as follows

Table 6.1.2 Track record of the network for Small and Medium enterprises

Evaluation of the network for Hangzhou Small and Medium enterprises	State Economy & Trade Commission, PRC, places special emphasis on the network and promotes the information revolution of enterprises using the network prior to whole China. The person concerned of Zhejiang province and Hangzhou city also evaluates big role of the network in the strategy of "Promotion of industries through information revolution". And it is appreciated by industries of Hangzhou city consisted almost by Small and Medium enterprises, so member of the network are increasing.
Establishment of two-way linkage	Two-way linkages are established among "China Small and Medium Enterprise Information Network" and "SME international collaboration network" of State Economic & Trade Commission, PRC, and existing 21 networks of Zhejiang province and Hangzhou city
Refreshment of contents	More than ten government relational departments of Hangzhou city (province and districts) etc. established a periodical contact system. They refresh contents of the network as requires, and promote and support network construction.
Increase of member	Member enterprises only are already 119 companies (incl. several famous enterprises), enterprises mediated are 72 companies, enterprises linked with two-way linkage are 29 companies, and enterprises seeking technical service for network are 30 companies
Access volume	Between the operation start on 16 April and 30 May, access numbers have reached already 34,000 times

6.1.6 Service condition and improvement plan of equipment

① Service condition

As for the pilot project, elf personal computers are provided in addition to one personal computer for server. But because of ability shortage of server capacity caused by rapid development of the system, another server of the company under State Economy & Trade Commission, PRC, is shared for this system. Elf personal computers are used so as one for improvement of database software, two for input work, one for internal management, four for internal training and one for Jianggan ward. These personal computers will be by degrees used for training of personals of Small and Medium enterprises etc. so as they initially planned, but it is informed that those computer scheduled to be located in central six districts will be settled after confirmation of the truck record in Jianggan ward.

② Improvement plan

The operation of the network was started with equipment settled for the pilot project, but in several months after the establishment (from 28 March to 1 August), the access numbers to Web site reached 34,000, and the numbers of member became 120 enterprises and 72 medicated enterprises. Owing to increase of the access number to Web site, it has become difficult to insure the safety, stability and fast response of the site with the existing equipment. On the other side, increase of site publicity activities has required to adapt the network to presentation at the outside. From these points of view, the person in charge operating the network for Small and Medium enterprise calls the necessity of the following improvements

1. Expand of server. Server (IBM Netfinty 7100) + 18 2G (SCIS) 10.000 rpm) x2 + Hot plug hard disk + 256M Memory (82,000 Yuan)
2. Projector For presentation at the outside
3. Fire wall Adaptation for the safety and reliability of server.
- 4 Modification of the communication line to ADSL. Existing ISDN has 64K bandwidth and is used by two companies, therefore the refreshing speed is too late. (10,000 Yuan per year)
- 5 CD-R drive To provide for a sporadic situation, acting as backup for the site. (2,700 Yuan)
- 6 Scanner At present, a private device is borrowed. (1,500 Yuan)
- 7 Network management software. To monitor the flow in the site (12,000 Yuan)

③ References for the future pilot project plan

1. To provide margin for the server capacity and to use appropriate server instead of substitution by normal personal computer.
- 2 To consider countermeasures against hacker in advance To provide CD-R for backup
3. For operation of the system, scanner as for input device and projector for presentation are also required.

6.2 Advisory service of investment foundation

6.2.1 Investment foundation company establishment plan of Hangzhou Small and Medium Enterprises Service Center

Hangzhou city is brisk in economic activities of its manufacturing industries, service industries incl tourism services, etc , therefore, a rich region. The citizens enjoy the high living standard, and enterprises and also individuals have not a few funds. On the other hand, its rapid economic growth arises many excellent chances of investment. In order to combine these ample funds and excellent chances of investment, in Hangzhou city, ten nation wide scale commercial banks of the joint-stock company system have their branches, in addition, four independent national commercial banks have also their branch. Other than the funds raising through the finance (indirect) system by these banks, another funds raising as a direct finance system with investment foundation has adopted to promote venture enterprises, and an investment foundation company has been established mainly for the promotion of high-tech industries.

In this investigation, the subject to be studied is the establishment of investment foundation, targeting the modernization of Small and Medium enterprises included the introduction of high-tech technology, not limited for high-tech industries, as a part of promotion policy for Small and Medium enterprises.

From this point of view, in the stage of the primary site investigation, it is confirmed that the advisory service for investment foundation shall be covered in the pilot project.

At the beginning, the advisory service was started with the goal of establishing an investment foundation of the joint-stock company system. On the other hand, the investigation team recommended a study of an investment foundation of the limited partnership system (LPS) for the following reason. Hangzhou city acknowledged the merit of LPS, decided its policy, that not the joint-stock company system but the LPS system shall be applied, and prepared the Hangzhou city's LPS Law and its detailed rules etc., also enlisting the cooperation of the investigation team.

It is said that, in China, there are ca.100 of venture capital, but all of them are of the joint-stock company system (the system, in which the capital of the company becomes the investment resources), therefore a central position of the funds resources of the venture capitals cannot be occupied but only by proper funds, and it limits the scale expansion of the VC-businesses. Since ca. three-company style VC with the goal of high-tech investigation exists in Hangzhou, it is desirable to adopt the LPS system with a view of the Small and Medium enterprises promotion. If it is realized, it will become a developmental attempt in China in the sense that the first investigation

company of the LPS system in China is realized, and it will become a epoch-making matter in the sense not only for the high-tech industries but for the modernization of Small and Medium enterprises, therefore it represents a great sense for the pilot project

When the investment foundation of LPS system has been actually established, a problem, that no experience for its operation exists in China, will come up, and sufficient countermeasures including also support from overseas shall be studied.

Merit of LPS

Against a proper business personality of high-risk & high-return for venture business, it was requested that distinction of the interests and jurisdictions among the business partners should be made clearly, a flexible and efficient business operation system, and a smooth funds supply system. Conforming to the requests, the Limited Partnership System (LPS), with which each due responsibility of the business partner can be divided into limited responsibility and unlimited responsibility, has been born. At present, this LPS system is the most popular business model in the VC-world. Other than the above reasons, there are following characteristics: in the case of the joint-stock company, taxes shall be borne by the company itself and the individual capitalists too, but in the case of LPS, taxes shall not be borne by the partnership, therefore the double taxation can be prevented, and also in the case of LPS, as the term can be limited, the funds arrangement will be carried out easily.

6.2.2 Operation contents of advisory service initially planned

As of the time point of the primary site investigation (in October 2000), when this advisory service was adopted into the pilot project, Hangzhou city planned that the investment foundation company established until middle 2001, and started the company at the first stage with the capital of 100,000,000 Yuan. On these preconditions, following advisory services were planned.

- (1) Advices on the preparation of the business plan for establishment of risk investment foundation company
- (2) Venture enterprise evaluation program (manual preparation for the evaluation and technology transfer to the related personnel)
- (3) Web site construction with Internet (for venture enterprise and for investor)

6.2.3 Conditional changes during the execution of the advisory services

At the beginning, the business plan was prepared on the precondition that the capital shall be managed through company organization, but afterwards, in consideration of such probability that the share of the proper individual fonder would become too high and then its normal operation of the foundation would be disturbed, and also accepting the investigation team's opinion on the advantage of the Limited Partnership System (LPS), LPS System has been adopted

6.2.4 Contents of the advisory services

Correspond to the above condition changes, the contents of the advisory services have been changed

Concerning ② and ③ of ① Preparation of the business plan, ② Venture enterprise evaluation manual and ③ Home page preparation, the drafts submitted by the investigation team have been confirmed and agreed as final products in March 2001.

On the other hand, concerning ① the business plan, a draft on the precondition in the initial plan that the capital was managed through company organization was once submitted, but since Hangzhou changed its policy to the direction , in which LPS system was premised, the investigation team has given explanation of the mechanism and model contract of LPS system intensively.

A establishment conception of the venture investment company with LPS system has been submitted from the Small and Medium Enterprises Service Center to the government of Hangzhou city, draft preparation of the related laws and regulations has been instructed from the government of Hangzhou city to the Economic Commission and the Economic Commission has ordered the Small and Medium Enterprises Service Center to prepare the draft. In case of the venture investment with LPS system, enacting of a special law, of which its effect is limited in Hangzhou city, is indispensable.

From the investigation team, the LPS model contract, the United States LPS model code, the draft of business plan, a draft of investment plan etc have been submitted and explained. Since there is no similar example in China, the above materials have become the only conforming materials (The case of Zhongguancun in Beijing is lacking in the detailed rules.)

Using these materials and with the cooperation of the team member Mr.張, the Small and Medium Enterprises Service Center has interviewed personally with the presidents of state enterprises, the presidents of private enterprises, the lawyers in charge of economical matters, the influential private investors, the related governmental organizations etc., exchanged with them the opinion and prepared the five kinds of following materials

- -Draft of the Hangzhou city LPS Law and its detailed rules
- -Draft of the prospectus for establishment of the venture investment managing company
- -Draft of the articles of association for the venture investment company
- -Draft of the LPS contract
- -Draft of the investment plan

Between 20 and 28 June, the investigation team has examined carefully the above materials prepared by the Small and Medium Enterprises Service Center. These materials, since they are based on the materials submitted by the investigation team, have no fundamental error, and only

errors caused by mistakes etc have been revised. The final products will be officially submitted to the government. Furthermore, as with this site investigation the advisory services come to an end, some practical subjects after the establishment of the foundation have been also examined.

6.2.5 Enforcement schedule

With the approval of JICA, concrete works have been started in December 2000.

Table 6.2.1 Enforcement schedule of find fund investment advisory services

	Time	Consulted matters, job items
1 st	Middle of December 2000	<ul style="list-style-type: none"> • Confirmation of background of the matters to the partner • Confirmation of proceeding condition of the matters to the partner • Confirmation of requirement on the overall job execution policy • Confirmation of requirement of the partner to us • Present conditions of venture capitals in Hangzhou city
2 nd	Middle of February 2001	<ul style="list-style-type: none"> • Confirmation of proceeding condition of the matters to the partner • Explanation of our preparing policy on the drafts of the business plan and manual prepared by us • Explanation of development details of venture capital industries in United States and Japan (with seminar) • Acquisition of basic information on the enterprise sector in Hangzhou city • Confirmation of requirement of the partner to us
3 rd	Middle of March 2001	<ul style="list-style-type: none"> • Confirmation of proceeding condition of the matters to the partner • Discussion on the drafts of the business plan and manual prepared by us • Confirmation of requirement of the partner to us
4 th	Middle of May 2001 (Mr. 張...until middle of June)	<ul style="list-style-type: none"> • Confirmation of proceeding condition of the matters to the partner • Explanation of mechanism of LPS contract • Confirmation of requirement of the partner to us
5 th	End of June 2001	<ul style="list-style-type: none"> • Discussion on the drafts of LPS law, its detailed rules etc. prepared by the partner • Consultation on the future tasks

6.2.6 Future tasks

Hangzhou city is going to establish an investment foundation of LPS system as one measure to promote Small and Medium enterprises, and the Hangzhou city LPS Law and its detailed rules have been prepared. This LPS system is an epoch-making matter for China, and if it is realized, it will serve useful functions for the modernization of the Small and Medium enterprises in China.

The problem remaining in the future is that, since the system is quite a new system for China, support of experienced personnel will be needed for its operation. The investigation team has been already submitted the enterprise evaluation manual, but it is considerable that cooperation of experienced personnel will be also needed for actual execution of the evaluation. These points shall be discussed in the third site investigation.

Chapter 7 Corporate diagnosis and guidance

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7.1 Corporate diagnosis and guidance

7.1.1 Basic policy of research

The Research for Promotion of SMEs in Hangzhou comprises the following elements aiming not only to investigate the status-quo and issues of and give suggestions for the promotional policies but also to achieve concrete results: ① To conduct the corporate diagnosis and guidance and bring about the substantial improvement of the corporate management, and ② To implement pilot projects and bring about a concrete result.

In other words, the essential purpose of the corporate diagnosis and guidance depends upon how the Research Group can contribute to the enterprises actually diagnosed. Also, these diagnosis and guidance were participated by the Production Capacity Promotion Center of Zhejiang Province affiliated with the Science and Technology Commission and teachers and post-graduate students of Zhejiang University, in addition to the Department of Small and Medium Enterprises, our counterpart organization and persons in charge at the companies in each industry, and we were given an opportunity to show those persons the methods and effects of the diagnosis. In regard of this point, we achieved a great result. This was proved by the fact that a request for the continued researches was made by the Hangzhou Municipal Government at the recapitulation meeting.

This Chapter 7 focuses on the management resources among the various problems SMEs are bearing. The staff-members of the Hangzhou Municipal Government who are concerned to the promotion of SMEs will not be able to devise effective countermeasures unless they have knowledge about the management resources. In addition, they need to deepen their recognition of the importance of diagnoses. As China is in the process of transferring from the planned economy to the market economy, there are many aspects that people concerned have not acquired the knowledge of the management philosophy and market exploitation even if they can understand the theory of those matters. The circumstances are the same with regard to the measures to meet the globalization. However, there are wide differences among SMEs in terms of category of industry, scale, form of ownership, management policy, etc. The recognition of this point is also important and it is possible to transfer the know-how of a successful enterprise to another. For reference to these points, the document describing the example cases of diagnoses and guidance has been compiled and submitted as a separate volume (It will be an effective method to utilize the SMEs Network for dissemination of the method of diagnosis and results of diagnosis, and in fact, a part of the information has already been placed on the network in Hangzhou).

Of course, the work will not be complete by the corporate diagnosis and guidance only, and if

there is any matter that will be helpful to the policy of the Municipal Government to promote SMEs, it will be reflected as a suggestion for the policy. The economical environment affecting the management of SMEs obtained through the corporate diagnoses and guidance are described in Chapter 2. Status-quo of SMEs of this Report. In this Chapter 7, we attach importance to the economical environment. Although these factors should be by nature addressed by the enterprise itself, it is not in the position to establish the necessary equipment to develop technologies by itself because of the severe bottleneck of lack in human resources (personnel to perform the development, exploitation of market, rationalization of production, obtainment of information, etc.) due to the matter of the scale of SMEs. With regard to this point, we have suggested to conduct training of enterprise managers, technicians and general employees in “5.3.6 brings up persons with talent for SMEs”. Also, we have suggested “5.3.9 Completion of equipment for the development of technologies”. In addition, since it is difficult for SMEs to retain necessary talented persons, we have titled the rearing of diagnosticians as “5.3.7 Rearing of the SMEs management-advisors and establishment of the management-advisors system”, and discussed about it in the items to be performed immediately. Further, as there are region-intensive SMEs and a group of enterprises dealing with ballpoint pens being concretely diagnosed in Hangzhou, we have mentioned as an area to be grown “5.2.4 Countermeasures for the region-intensive SMEs”, and proposed in the items to be performed immediately as “5.3.9 Diagnoses at the place of production”.

7.1.2 Preparedness of local people for reception

The staff-members of the Department of Small and Medium Enterprises of Hangzhou Municipal Economical Commission and companies engaged in the machinery and electronics, food processing, spinning industry and light industry as our counterparts; teachers and post-graduate students of Zhejiang University Management Institute as researchers for each category of industry; and a specialist from the Production Capacity Promotion Center of Zhejiang Province, each for the machinery and electronics industry and light industry, participated in the on-site research. The Department of Small and Medium Enterprises and the other related persons were very cooperative for the research at this time and we felt their enthusiasm. The questionnaires that the Research Group had sent prior to the First On-site Research had been distributed in advance. As a result of cooperation of our counterparts in collecting the replies, we finally received replies from 45 enterprises out of the 52 questionnaired enterprises, representing a collection rate of 88%. The Research Group counted and analyzed the results and the questionnaire proved to be very helpful to the grasping of actual conditions and diagnoses of the enterprises visited.

7.1.3 Result of research

(1) Research by visit to 52 enterprises and its output

We implemented the research by visit to 52 enterprises, exceeding the planned number, (16 machinery and electronics, 15 foods, 7 spinning, and 14 light industry enterprises) during the 8-day period from October 17 to 26, 2000. For the research, we conducted a simplified diagnosis and prepared and provided to the enterprises "Diagnosis Charts". The Chart briefly mentions to the corporate outline, strong and weak points and problems of the enterprise concerned and the suggestions to resolve such issues, itemizing into 9 particulars (① the Management basics, ② Products development, ③ Production technologies, ④ Purchasing and outsourcing of materials, ⑤ Marketing and sales, ⑥ finance, ⑦ Labor management, ⑧ Computerization, and ⑨ Internationalization). However, we obtained the financial statements only from the enterprises designated as model enterprises and two other enterprises, totaling to 12 enterprises. We analyzed the financial statements of these 12 enterprises. (However, due to the legislative system of China, the scope of the financial statements does not cover the statement of costs of manufacturing even in the case of a manufacturing industry, and many enterprises do not accurately grasp or book the itemized sales expenses and controller's expenses of themselves, and therefore, we were unable to obtain the details further than those. Thus, we decided to make analyses of the widest possible scope of affairs based on the data we obtained.)

The result of the analyses is stated in "2.3 Status-quo of SMEs in Hangzhou through corporate diagnoses"

7.2 Details about the selection of model enterprises

With regard to the selection of model enterprise, we conferred with the Department of Small and Medium Enterprises and our counterpart organizations on October 30, 2000, after the completion of visits to the 52 enterprises, and according to the request of the Department, 10 enterprises were selected. As for the criteria for the selection, we decided to make selections on such conditions as: ① We should select the model enterprises giving considerations to that they would not be biased to enterprises of particular forms of ownership or categories of industry among the enterprises at a certain level of management and not necessarily grasping a model enterprise as an "exemplary enterprise", ② They would desire to be diagnosed as a small or medium enterprise, and ③ We could obtain their cooperation in disclosing information such as the providing of their financial statements of the past three years. What became clear in selecting and diagnosing the model enterprise is that the collaboration between the local public entity such as a city at a level of prefecture in Hangzhou and Hangzhou City itself and its counterparts was excellent (foods and light industries). It is considered to be very desirable that, since the local public entities are willing to raise and promote the SMEs in their own regions, they will be able to strengthen the collaboration with Hangzhou and other municipalities and achieve effects according to their respective roles.

Table 7.2.1 List of model enterprises selected

	Category and field of industry	Name of enterprise	Major product
1	Machinery and electronic industry	M002	Sintered metal bearings
2	Machinery and electronic industry	M007	Lifter for elevated works
3	Machinery and electronic industry	M013	Speed reducer
4	Food processing industry	F003	Milk and fermented milk
5	Food processing industry	F005	Bean-curd
6	Food processing industry	F011	Bamboo shoots
7	Spinning industry	T005	Manufacture of flat-knitting machines
8	Spinning industry	T7707	Cotton yarn spinning
9	Light industry	L001	Glass bottles
10	Light industry	L0009	Ball-point pens

7.3 Diagnoses and guidance of model enterprises

7.3.1 General condition

We conducted diagnoses of 10 model enterprises (3 machinery and electronics, 3 foods, 2 spinning, and 2 light industries) two times separately. The first-time diagnoses were conducted at the time of the First On-site Research, and 2 weeks was spent for the diagnosis and guidance of one enterprise. Concrete diagnoses were conducted using the items of diagnosis prepared by a specialist

The second-time diagnoses were conducted at the time of the Second On-site Research, and grasping of the implementation condition of the guidance given at the First On-site Research was done and additional diagnoses and guidance were conducted. The details of the particulars to which importance is attached among those diagnosed and given guidance are described in "Example cases of diagnosis and guidance".

(1) Management basics

The forms of privately managed enterprises are partly those transferring into joint-stock companies and partly those whose stocks are partly owned by the state or township (local public entities). The managing officers invest in their enterprises, and in many cases, the employees also invest, apart from the ratio of investment, in their enterprises (2.2 Outline of SMEs).

Among the state-owned enterprises, there are ones that have no prospects into the future and are likely to be driven to closure. On the other hand, the remuneration of the managers of successful enterprises is high.

(2) Development of products

There are some enterprises developing their own products making the most of the synergy effect on one hand, there are others manufacturing mutually unrelated products (e.g. glass bottles and paper products) on the other.

(3) Production technologies

The attitude to attach importance to quality is stronger than expected. In addition to many enterprises, which obtained the ISO 9000 series certifications by the Chinese certifying institution, there are some enterprises aiming to acquire the environmental standard or ISO 14000. On the contrary, there are also a number of enterprises, which cannot do anything due to lack of funds, and technologies despite they feel the necessity of the improvement of quality. (For example, 11 of the 15 enterprises in the food processing industry, which is the industrial category having comparatively worse performances, and most enterprises in the spinning industry were in this condition. In particular, the state-owned enterprises and those having recently been converted

from the state-owned into the private management are suffering difficulties.

(4) Purchasing and outsourcing of materials

Many of the state-owned enterprises and those converted into the private enterprises produce the necessary parts by themselves. Otherwise, in general, many enterprises procure their necessities from domestic manufacturers, but there are some enterprises that use foreign products for the main parts to raise the product reliability.

(5) Marketing and sales

The term “market principle” is often used in enterprises, and there are many enterprises that are endeavoring to expand their sales network and increase exports. However, there are some enterprises that are running after the local demands with their commodities remaining as before. There can be found some enterprises, which are not making concrete activities due to lack of information despite they are desiring to export.

(6) Finance

As we obtained financial statements from the 10 model enterprises and two others, we conducted the ratio analyses and submitted the results attached to the Diagnosis Charts together with some comments to the enterprises concerned through the Department of Small and Medium Enterprises.

(7) Labor management

The private-managed enterprises are thoroughly following the principle of pay according to ability adopting the piecework payment system or percentage system. There are some factories that secure the inexpensive labor in the form of “guest workers” from the inland districts of China. The labor conditions in such production sites are inferior, and many enterprises running such factories lack in considerations to safety and hygiene.

(8) Computerization

The SMEs have strong concerns for the obtainment of information (personal computers, network, market information, etc.) but lack in management resources and desire the subsidiary measures, etc. from the government, etc. The result of the questionnaire shows that 36 of the 37 enterprises have personal computers and 16 of them maintain their Home Pages.

Although personal computers are rapidly spreading and the use of Internet is explosively increasing, the utilization of them in the aspects of management control and sales are limited at the present. However, if the computerization is promoted as the measures to assist SMEs, the use of them will advance and it is expected to be an opportunity for the SMEs to renew themselves into

the corporations of modern management.

(9) Internationalization

The recognition to the participation in the WTO is rising. The desire to export by themselves and not through the trade firms is strong. From this viewpoint, the expectations to the joint ventures and cooperation of Japan are as strong as ever.

7 3.2 Special remarks — Status-quo and the way of proceeding from now on

(1) Regional nature and organization of SMEs

As an example of the concentration of SMEs in Hangzhou to a certain area, we carried out a research of the writing tools (ball-pint pens) industry in Tonglu yunshan.

(2) Social welfare of enterprises --- obligation and preferential disposition

In case an enterprise proceeds with the restructuring, there is a problem that the obligation of social welfare seems to become a heavy burden. On the other hand, it can receive the taxation preferential disposition by employing disabled persons. To take the food processing industry as an example, the situation is as follows.

1) Issue of excessive personnel in state-owned enterprises

For example, the state-owned enterprises, F001 (776 employees), F002 (350 employees), F003 (660 employees), F004 (220 employees) and F005 (660 employees) have an apparently excessive number of employees compared with the amount of their current production and sales. It is considered to be an urgent necessity for them to proceed with the rationalization of manufacture and raising of sales efficiency and reduce the excessive personnel. Contrarily, the private enterprises are generally run with the principle of fewer people of superior ability.

2) Burden of pension for the retired and medical expenses

For instance, the enterprise F003 reportedly paid about 1.5 million Yuan for the burden of pension for the retired under the age limit and medical expenses. This means that each employee bears the expense for 0.77 persons. Also, in the case of the enterprise F005, while the average wage of an employee is about 900 Yuan per month, he pays 500 Yuan for the pension for the retired and, though there are differences among individuals, 2,000 to 3,000 Yuan for the medical expenses. It is reported that the payment for the retired under the age limit lasts lifelong, and that for the retired for other reasons, until 60 years of age for males, and 50 years of age for females.

3) Preferential disposition for the employment of the physically disabled persons

On the other hand, the enterprise F007 employs 24 physically disabled persons and receives the preferential disposition of reduction of tax. And, the enterprise F008, a welfare company, pointed out the problem that it couldn't raise the price of products.

(3) Corporate finance and accounting system in China

1) Status-quo

With regard to the corporate finance and accounting system in China, we received explanation as mentioned below from the specialists who have titles of China Registered Accountant of Accountant Office (certified public accountant) and China Registered Tax Accountant (licensed tax accountant). Also, as a result of our actual analysis of the financial statements, it was found that there are the characteristics as follows.

- ① The financial statements include the table of assets and debts (B/S), table of losses and profits (P/L), table of cash-flow quantity (cash-flow) and table of profit distribution. However, it is reportedly not obligated to submit to the supervising authority the itemized costs of manufacture except for the foreign-funded corporations. Generally speaking, the state-owned enterprises seem to work out their financial statements in details, apart from the contents of their performances. On the other hand, the private enterprises take a rough-and-ready way, probably carry slipshod accounting, and in many cases, the itemized costs of manufacture and itemized cost of sales and controller's expenses are unclear.

For these reasons, the "productivity" cannot be calculated in the calculation of the ratios for the management diagnosis by the "Diagnosis Chart". In addition, most documents are hand-written and apt to be illegible when photocopied, causing difficulties in deciphering them.

Incidentally, please refer to the "How to read the management ratios" attached hereto as Table 73-1.

- ② The audits include those performed by the state (the Department of Finance) and performed by private institutions. Every state-owned enterprise must be audited by a private-sector auditing institution (auditing corporation). A private enterprise must be audited by a private-sector auditing institution if it used a lending from the bank (prescription by the Department of Finance).
- ③ The accrual basis is adopted for accounting dispositions as done in Japan. Accordingly, in case the credit transaction is conducted for the purchases or sales of raw materials or products, the sales amount and revenues in cash for a specific business year or accounting term do not necessarily match, or the amount of purchasing and disbursement in cash do either. Some enterprises adopt the way of booking the sales amounts at the time of receipt of

payment (the cash basis) as the managerial accounting

- ④ The credit settlement using bills is also practiced, and there are clearinghouses, too. However, of the 12 enterprises whose financial statements were received, only 4 enterprises book the bills receivable or bills payable in their B/Ss. This tells that the margin transactions among SMEs are still a minor method compared with Japan. The forms of acceptance of bill include the commercial acceptance of bills in which enterprises accept bills to make payment, and bank acceptance of bills in which the banks accept bills. We were explained that the checks are also generally used.
- ⑤ As the method of redemption, the straight line-method is generally used. Those of 2,000 Yuan or more must be booked as the asset and redeemed. The periods of redemption are 30 to 50 years for buildings, 10 to 20 years for equipment, and 5 to 8 years for automobiles, which are slightly longer than those in Japan. Molds are booked on the deferred assets account when booked individually. When booked together with equipment, they are booked on the fixed assets account.
- ⑥ The fixed rate method can be used only in the case where it is specifically admitted such as a case of an enterprise in the high-tech industry.
- ⑦ As the accounting items having the socialistic coloring, there is a breakdown of the welfare foundation payable in the circulating liabilities, revolving funds for housing (the enterprise purchase condominium, etc. and sell it to employees) and special debt services and as the long-term liabilities, and welfare expenses (company houses or flats expenses) as the public benefit money in the revenue reserve, and it is obligated to reserve 5 to 10% of profit in case of a limited-liability company limited.
- ⑧ A large characteristic is that in the table of loss and profit (itemized losses and profits), the financial expenses are included in the account item called in Japan "sales and controller's expenses", and as a breakdown of it, the interest payable is specified in it. This method resembles the financial disposition of the method recommended by the Agency of Small Businesses of Japan. (In case of a disposition based on the corporate accounting principle of Japan, this should be booked on the non-operating expenditure account.)

7.3.3 Result of research and direction of improvement

Based on the above-mentioned research, we report as follow:

- ① We desire that the accounting system should require SMEs to well maintain the table of the itemized costs of manufacturing. Also, it is necessary to lead SMEs to duly record the sales expenses and controller's expenses and establish the legal foundation for this. As the premise of this, it is necessary for the persons in charge of the corporate finance to acquire the method of the double entry bookkeeping. It could be one of the appropriate ways to establish a system of accounting advisor to give guidance on bookkeeping as in the Chamber of Commerce and Industry and Association of Commerce and Industry in Japan.
- ② What is the criteria of assessment in implementing the sale of government property at the time of conversion of a state-owned enterprise into a private corporation? Also, how is it reflected to the financial statements of SMEs? Although we actually received an explanation of a government-owned enterprise, which was to be converted into a private corporation, it was not clear. What we heard from a converted enterprise was "Since the price of the government property sold was inexpensive, we made the financial data for the internal control apart from the financial statement, and grasp the management condition by it."
- ③ It is acceptable that an enterprise makes a certain number of financial data for the purpose of managerial accounting, but the financial statements will make little sense to diagnose based on it unless they accurately reflect the actual condition. This will probably be a matter involving the taxation system and method, and it will be necessary to improve the actual conditions in the general system of the state.
- ④ When an small or medium enterprise is diagnosed, and as a method for the enterprise to know its own management and position in the industry concerned, it is desirable to count up the management figures into something like a database and publicly announce the counted figures. Concretely, we would recommend to regularly publish the "Management Indexes of SMEs" and "Cost Indexes of SMEs". In Japan, the two documents are annually published by the Agency of Small Businesses. The "Management Indexes" is a document compiling the B/Ss and various management ratios of each category of industry, namely, manufacture, retailing, wholesaling and services. In the "Cost Indexes", the itemized costs of manufacture (work) for the construction and manufacturing industries, and the cost of sales, sales expenses and controller's expenses for the retailing, wholesaling and service industries are compiled, and all of the figures are classified according to the numbers of employees. As explained in the above 1) ⑧, the method of booking the interests payable in China is similar to the that recommended by the Agency of Small Businesses in Japan, and therefore, it will be

convenient for the comparison of the data of the two states

- ⑤ At the meeting with our counterparts held as a conclusion, we were requested by the Department of Small and Medium Enterprises to provide some data about the analysis of the difference between the budget and result with regard to the diagnosis of the First On-site Research. As the research group, we had seen the cases where the management cycle of plan, implementation, evaluation and feedback was not sufficiently practiced. Therefore, we worked out the “Grasp and analysis of planning and result of budget” which would be feasible to SMEs in China, brought it with us after translating it into Chinese language, and requested the Department of Small and Medium Enterprises to provide it to each enterprise as necessity might arise prior to the start of the Second Research. This data is based not only the basic theoretical method necessary to the “control of management and finance” but also on the reports on the other matters in China and contains the various forms related to the budget and result. We hope that SMEs in China will make the most of this data in introducing the management of further higher level than that of the above-mentioned analysis of management ratios.

Attachment

Table 7.3.1 How to read management ratios

	Ratio	Formula*	Meaning	Criteria of evaluation (Figures are for reference in the case of Japan)
Profitability	Ratio of operating profit to sales	$\frac{\text{Operating profit}}{\text{Net sales}} \times 100$ $P15/P1 \times 100$	What is the percentage of operating profit gained to the sales? Gross profit, sales expenses and controller's expenses	Generally, a higher ratio is desirable
	Ratio of total profit to sales	$\frac{\text{Gross profit on sales}}{\text{Net sales}} \times 100$ $P7/P1 \times 100$	What is the percentage of gross profit to the sales? Sales and cost of sales	Generally, a higher ratio is desirable
	Ratio of operating profit to operating capital	$\frac{\text{Operating profit}}{\text{Operating capital}} \times 100$ $P15/(B50-\text{Idle assets}) \times 100$	The height of operating profit to the capital working for the management	Generally, a higher ratio is desirable
	Rate of operating capital turnover	$\frac{\text{Net sales}}{\text{Operating capital}}$ $P1/(B50-\text{Idle assets})$	The speed of recovery of operating capital by sales in a year	This is indicated by the number of times in a year Generally, a higher ratio is desirable
Safety	Ratio of net worth to total capital	$\frac{\text{Net worth}}{\text{Total capital}} \times 100$ $B98/B50 \times 100$	Ratio of capital to total capital (Total of liabilities and capital)	Generally, a higher ratio indicates higher safety Extraordinarily excellent 50%, Excellent. 40%, Good 30%, Passable 10%, Low 5%
	Ratio of interest payable to sales	$\frac{\text{Interest payable}}{\text{Net sales}} \times 100$ $P12/P1 \times 100$	Ratio of interests payable accounting for sales	Generally, a lower ratio indicates higher safety
	Ratio of fixed assets to long-term capital	$\frac{\text{Fixed assets}}{\text{Net worth} + \text{Long-term borrowing}} \times 100$ $B35/(B98+B75)$	Ratio of the extent that fixed assets is met by long-term capital, which is the total of long-term liabilities and net worth	100% or less is desirable (in Japan) Excellent 55%, Good 65%, Ordinary 75%, Passable 90%, Inferior 120%
	Liquid ratio	$\frac{\text{Circulating assets}}{\text{Circulating liabilities}} \times 100$ $B20/B70 \times 100$	Comparison of the assets that can be encashed within one year and liabilities to be repaid within one year	(In Japan) Excellent. 160%, Good 140%, Ordinary 130%, Passable 110%, Inferior 100%
Growing potential	Ratio of increase in rate of sales to previous year	$\frac{\text{Sales of current year}}{\text{Sales of base year}} \times 100$ $P1/\text{Base year } P1 \times 100$	This indicates the tendency of increase or decrease in sales	Generally, a higher ratio is desirable
	Ratio of increase in rate of current profit to previous year	$\frac{\text{Current profit of current year}}{\text{Current profit of base year}} \times 100$ $P25/\text{Base year } P25 \times 100$	This indicates the tendency of increase or decrease in current profit	Generally, a higher ratio is desirable
	Ratio of increase in rate of total capital to previous year	$\frac{\text{Total capital of current year}}{\text{Total capital of base year}} \times 100$ $P50/\text{Base year } P50 \times 100$	This indicates the tendency of increase or decrease in total capital	Generally, a higher ratio is desirable

Note This is the formula used for the calculation of Diagnosis Chart B indicates B/S (balance sheet) P indicates P/L (statement of profit and loss) The next table is the financial statements of China ("Kuangong 01" and "Kuangong 02" often used by the enterprises diagnosed at this time, although there are various sorts) Example P3 indicates the item number 3 (the line number) in the P/L (statement of profit and loss)

7.4 Diagnosis and Instruction in Machine and Electronic Industry Area

7.4.1 Present State of Investigated Enterprises

(1) Outline

After discussion with the Department of Small and Medium Enterprises of Hangzhou City Economic Committee, we selected 16 enterprises and executed our visit survey. The visited 16 companies are listed in Table 7.4.1

Table 7.4.1 List of companies visited for investigation

No.	Main products	Form	Scale	Sales/'99 (10 ³ Yuan)	Employee /Oct. '00
M-001	Small boiler for building	Private	Small	27,489	136
M-002	Sintered-alloy bearing for auto	State	Medium	27,043	353
M-003	Tee leaf processor	Private	Small	15,000	200
M-004	Telephone terminal connector box, Controller, Railroad branch rail, Wire rope	Private	Medium	65,000	420
M-005	Filter press, Separator, Grinder	Corporation.	Medium	50,000	300
M-006	Ship building, Structures as crane	Corp.	Medium	82,190	210
M-007	Lifter for high-place works	Corp.	Small	3,020	30
M-008	Semiconductor-type cooling element & application product	Corp.	Small	8,000	110
M-009	Small connector, On-commission micro-motor assembly	Corp.	Medium	50,000	2260
M-010	Racing boat (kayak etc.)	Corp.	Small	20,000	43
M-011	Ball- & roller bearing	Corp.	Medium	140,070	1200
M-012	Motor hoist, Motor	Corp.	Medium	16,300	351
M-013	Reduction gear	Private	Medium	57,513	178
M-014	Spring	Private	Small	16,077	98
M-015	Auto clutch and brake	Corp.	Large	180,000	1100
M-016	Agriculture-use truck, Special-purpose auto, DC-motor	Corp.	Medium	158,310	410

Note) Classification of the scale enterprises

Large: Capital ≥ 50 million Yuan and number of employee ≥ 500 ,

Medium: Between large and small,

Small: Capital < 5 million and number of employee < 100

These 16 companies are classified by the business form and its transition as in Table 7.4.2

Table 7.4.2 The visited companies classified by business form and its transition

Business form		Transition	Number of Companies	Business scale		
				Large	Medium	Small
State		Just before privatization (to Inc.)	1	-	M002	-
Corporation	From state	Just privatized	3	-	M009 M012 M016	-
		Several years after privatization	1	-	M006	-
		Privatized from township enterprise	3	M015	M011	M007
		Corporation from the beginning	2		M005	M008
		From private company into business corporation with foreign capital	1			M010
		Privatized from township enterprise	1			M003
Private		Private	4		M004 M013	M001 M014
		Total	16	1	9	6

(2) Present state of small and medium enterprises in machine and electronics industry

The present state of 16 small and medium enterprises in machine and electronic industries as seen from visit-and questionnaire-survey are as follows:

1) Management policies

The slogans posted up in each company said "Quality first" together with "Customers' satisfaction", "Cope with customers' needs." as well as "Integration of 'Science and technology', 'Industrial production' and 'Trade'", "Extend the market by new-product development." through which we found how the market-oriented (market-in) philosophy had infiltrated in the enterprises.

Supported by this background, the 9 companies from entire 16 have already acquired certification of ISO9002 or are waiting for judgment

2) Systematic activities of enterprise

Several managers of the visited companies referred to "weak organizational cooperation".

As the layout of administration and indirect departments common in visited small and medium enterprises, 2 or 3 people of a section sit in a small room. We found no enterprise having large rooms for these personnel. We interested in the way, how the mutual understanding were made, which however, could not be cleared by the visit for this time.

Some of them remarked that the employees try to evade responsibility and show few cooperative attitudes for solving problems. We also heard them saying that although the company internal standards had been established for coping with ISO certification, the actual works were not performed accordingly.

Although each enterprise has management targets but no concrete action plan has been made for realizing them, and no mutual discussion has been made for solving problems at their actualization

3) Sales and number of employees

The sales have been increasing steadily since 1997. Each company estimated the sales in fiscal 2000 to exceed that of fiscal 1999. As seen from the personnel aspects of the 14 companies, with exception of 2 companies that showed no data, the total number of employees in 1999 was 5549 with increase by 2312 (71 %) compared to 3237 in 1997. Further in the listening survey in October 2000, the number of employees has reached more than 6800 with increase of 1250 employees in a year (increase of 23 % to 1999).

This increase of number of employees reflects the continuation of satisfactory extension of economy and also proves that each company estimates the increase of sales in fiscal 2000.

On the other hand in the present number of employees in 14 companies, no number of employees in the state companies being on standby at home caused by restructuring of the company is included. The occurring phenomena here were, that while corporations and private enterprises perform employment activities, reduction of excess employees is required for state enterprises. For the state enterprise just before privatization (M002), the average age of employees was as high as 47 years, which makes the measures for this aspect difficult.

4) Extension plan of the enterprises

Every enterprise from the 16 companies plans extension of its factory, with exception of 4 factories, which have still enough production spaces. The new factories or extended production spaces of the 5 companies have already started operation or are just before completion. The other 2 companies have secured the land ownership and plans to build new factories based on judgment of market trend. The other 3 companies, on the other hand, although they had good prospect for assuring work quantity, they cannot extend their production space due to their limited ground area. They must start their study of the measures from securing the landownership and point the selection of location and raising construction fund as the major difficulties.

Besides, one of them is going to extend its production by purchasing another company of the same industry. One of the others plans extension in several years but no concrete one in near future.

5) Marketing route and business activity

Among the 16 companies, 6 companies (40 %) had 100 % direct sales route for Chinese domestic market, and 11 companies (less than 70 %) had more direct sales ratio than 60 %. As it was difficult to cover the entire China, they executed business activity in restricted areas. However, several companies among them manufactured such products as would bring higher sales if business could be extended. Although the investigation for this time could not cover such

problems in distribution system as maturity of agent system and wholesale network, the use of agents is a noteworthy subject in future.

On the other hand, the reduction gear manufacturer, as an example, has a hundred of primary agents, assigns discrete territory for each of them and makes them follow its marketing policies, such as exclusive sales of the companies products (allowing no sale of the competitor's goods), advertising in unified image, keeping the standard price etc. There are other enterprises, which promote marketing by paying the sales persons higher margin rate corresponding with increased sales results, or which give the sales persons the set sales price including both sales margin and expenses together with the upper and lower limit of sales price. By these systems the sales person can get higher income in relation to his higher sales result

The 11 enterprises among 16 have their own home pages in Internet for the purpose of the enterprise introduction and products advertisement but, they say, very little inquiries yet have been made through via home pages

The visited enterprises, classified into types of industry and showing their products, are listed in Table 7.4.3.

Table 7.4.3 List of type of industry of the visited enterprises

Type of Industry	List of Manufactured Products	State	Inc	Private
Machine	Small boiler for building, Tea leaf processor, Filter press, Lifter for high-place works Motor hoist, Reduction gear Ball and roller bearing (Railroad branching rail), (Wire rope) (Grinder), (Separator)	-	M005 M007 M011 M012	M001 M003 M013
Autos & Parts	Sintered-alloy bearing, Spring Clutch and brake Agricultural-use small-sized truck	M002	M015 M016	M014
Shipbuilding	Shipbuilding, (Crane)		M006	
Electric & Electronics	Telephone terminal connector box. Small connector, (Control circuit device), (DC power supply unit), (Motor), (Extension code), (Micro-motor), (Heat transfer element application product)		M009	M004
Semi-conductors	Semiconductor-type cooler (heat transfer element)		M008	
Others	Racing boat (kayak etc.)		M010	
Total		1	10	5

Note For such kind of companies as manufacture many kinds of products (shown in parentheses), the type of ownership is selected represented by major products

Remarkable features of this table are:

- The almost all sales route of machine, electric and electronic area are for Chinese domestic market
- On the other hand, the enterprises that manufacture auto parts export mainly for the demands of reparation part for USA, Asia and Japan. The export rate in sales accounts for 10 to 40 %. This shows that the parts for auto have worldwide distribution and at the same time, that Chinese products are very competitive

6) Ability for New Product Development

Each company, having its own development and design department, has distinctive series of products, which constructed the basis of present state, and also copes with customers' requirements for special specifications. However, the present product series of respective company consists mainly of the products developed many years ago, as the 4 companies among 16 manufacture the products on the basis of customers' drawings and as they depend upon the evaluation by customers or of governmental institution because of lack of their own ability for evaluation, the improvement and consolidation of their own technologies, and enrichment of technologies for product development and evaluation as well as of evaluation equipment are their major problems to be solved

The 14 companies among 16 use CAD for designing. The 2 of them apply CAD for metal mold design, the one that connect it through CAD/CAM with a wire-cut EDM

7) Manufacturing technologies and machinery

The technologies used in visited companies are approximately as follows:

a) Sheet metal working (Cutting, Bending, Gas-cutting, Welding etc. used in 6 companies)

These works, including shipbuilding, are carried out in 6 companies mainly for square cases and frames. The square case workings performed here are mainly spot welding using welding rod. No spot welding using spot-welder was found.

b) Press work (Punching, Bending, Drawing etc. used in 6 companies)

Most works are single step works. The main working motion consists of taking a work-piece out of a work-piece case, finish it to a part and place it into another part case. There are many sets of succeeding work steps, each set of which may be arranged into a line by improving the parts supply. Only one high-speed automatic punching press is used for manufacturing connector terminal pieces. The imported multi-step dies used in automatic press machine here, is designed to have inefficient material yields.

The clutch and brake manufacturing factory, consisting mainly of press works, has an exclusive metal mold manufacturing department and is equipped with wire-cut electric discharge machine and a thermostatic chamber installed with a jig-borer and milling machines. The other enterprises have no exclusive metal-mold manufacturing department and their production department manufactures the mold also.

Besides, no safety guards are applied to almost all works, and for most press machine equipped with both-hand-operation switches, the insertion of work-piece by hand and pressing the switch pedal by foot are carried out at the same time, which is problematic for work safety.

c) Machining (Turning, Milling, Gear cutting, Broaching, Drilling etc. used in 10 companies.)

Most works are machining using single purpose machines except the machining using self-made broaching machine (M002), turning of the large resin spacer plate for filter press (M005), machining large cast frames using Japanese machining center and worm-gear cutting (M013).

d) Heat treatment (Quenching, Annealing etc. used in 5 companies)

In addition to usual heat treatments, various methods including bright quenching in nitrogen atmosphere, induction quenching etc. are applied. The conveyer type powder-alloy sintering (M002) is a special work process

e) Surface treatment (Painting, Plating etc. used in 9 companies)

This is usually spraying painting for the structures manufactured by plate metal work. The resin powder electrostatic coating is adopted in a company (M004). Plating is used in only 2 companies, one of which is for gold plating of connector terminals (M009) and the other is special plating using automatic hanger conveyer between baths (M002)

f) Casting (Cast iron. used in 1 company) and Die casting (Aluminum used in 1 company)

A company casts iron-castings for structure parts of its own products (M003). Because of difficulty of external procurement, the company decided to cast parts by itself and continues it till today. The vertical type aluminum die-casting is applied for manufacturing motor-rotors (M012)

g) Resin molding (Injection molding: used in 2 companies, Compression molding: used in 1 company)

The injection molding is used for manufacturing the extension code plugs and sockets (M004) and for connector cases (M009). The spacer plates for filter press are formed using large compression molding machine (M005).

h) Other special manufacturing

The automatic coiling of springs, forming of steel pipes as material for ball/roller bearings, manufacturing of semi-conductor type cooling elements using metal alloy vacuum melting, lamination of carbon fibers etc. are the other unique manufacturing technologies applied here.

i) Electrical wiring (Wiring for machinery: 8 companies)

These are the wirings within boards for operation control of machineries. Although the wirings for electromagnetic contactors and relays in boards are simple, we found many slack wires at connection terminals due to uneven length of each wire and loose wire bundles connecting devices, which give bad impression.

j) Future problems in manufacturing

Each company is aware of necessity of technological innovation and wants introduction of

automation and modern equipments.

On the other hand, as a fact in all 16 companies, they had no product, in which printed circuit board is used, which indicates a part of high technology level. Product development and introduction of production technology containing this technology area is desired.

8) Procurement of materials and parts

The materials as steels including steel plates and silicon steel plates and coppers are purchased fundamentally from domestic market, but hoop copper, which has strict thickness tolerances, and a part of wire material for springs are imported.

There are some successful examples of product development applying foreign unit components skillfully for improving the characteristics of company's product and assuring the quality, as represented by the burner unit for small boilers and the oil pump for high-place work lift. They mentioned the lack of appropriate domestic product or unsatisfactory quality and reliability of domestic products as the reason for them. Anyway they have to depend upon the imported products for technology of these areas. Therefore for coping with possible customers' requirement for upgrading the control to automatic control, for example, it is necessary for them to always collect foreign and domestic information of technical trend of the important components. One of the enterprises had the policy to purchase electrical machineries having higher reliability even by some higher cost.

9) Work safety management

The workshops of manufacturing factories are in good order only with some exceptions. But even in these factories, no protective glasses are used against scattering of chips by grinding and machining works. No safety guard for molds is applied in most press works and operators insert their hands for working very close to the mold without any protector. In addition, some of them wear inadequate shoes.

The safety management for preventing work accident is not always applied in every workshop containing corresponding works. They say that workers do not want to use them because of percentage pay by results but it is a problem to be solved in future.

(3) Investigation of Japanese companies in China

During the second visit we visited several Japanese companies. The purposes of visit were study of the present factory management at site, degree of use of local enterprises and problem in procurement.

We are going to report about company (A) and company (B).

1) Company (A)

a) Factory management

- The factory management is performed based upon the established thoroughgoing Japanese-way-management. We got the impression that both of the factory and technology managements were more Japanized than factories in Japan. We have missed the chance to ask how and where they have accepted and merged local ways
- The education and training of employees are executed based on the curriculum. Manager training and quality spirit training are executed centralized in the central division in Beijing. The dispatched trainings in Japan are also applied Job rotations are also performed, even though the employees do not want them
- QC-circle activities are applied. Dispatching to the company meeting, Chinese meeting and Japanese meeting are performed and are very encouraging for the employees.
- “Visible management” using bulletin board is performed for production plan, error statistics, circle activities report etc.

b) Use of local enterprises

- At the start of local company, the use of local enterprises was started based upon distinct classification of internal/external manufacturing in two ways, i.e., either the manufacturing in commission with lent manufacturing equipment or the manufacturing in commission by supplier’ self-procurement (without guarantee). For selecting the supplier to commission for the first time, the company got the list of appropriate companies and visited them one by one for investigation.
- The company focuses on nurturing the part manufacturing companies.
- For purchasing materials the first priority is put on Chinese domestic products. Some of parts and components supplied by foreign-owned enterprises in China are used. The local procurement of manufactured parts by the company (A) is restricted to the pressed and machined parts.

The) products of company (A) are not the kind, for which the functional components are assembled into a product Therefore no quality problem concerning the functions of locally purchased components occurs

- The quality detected in receiving inspection for externally manufactured parts are indicated at once for everyone for the purpose of calling public attention.
- The local companies understand not only Japanese technologies but also Japanese way of management and accept it.
- The Japan-owned local companies in many cases produce mass-production-oriented products or machinery-types and the local companies manufacturing the parts for these products are required to have many manufacturing devices and also many workers. We suppose it difficult for small and medium companies to cope with the problem by a single company even in case of gradual extension of production. As the result, these parts are ordered divided into several companies, which, on the other hand, will cause severe price competition.

- All the 16 small and medium companies visited for this time produce the products of their own brand. So we are then interested in the state of business of such small and medium enterprises, which are specialized to a single purpose manufacturing technique such as press works, machining etc. The additionally investigated company (M017) may be near to this kind
- The Japanese way of management is performed also in the company that manufactures in commission from Japan (M009) successfully.

2) Company (B)

a) Factory management

- The company (B), approved as a high-technology enterprise, has no Japanese staff according to the policy of the parent corporation to leave the management of company in China to Chinese people. The managers begun from top manager are young people but trusted by the parent company, they execute management freely and daringly.
- The visit was restricted only through windows and details were not to make clear but we did not see or feel anything that shows existence of Japanese way of management like as the case of company (A). Moreover, the manager is a very busy man making business trip for negotiation not only in China but also in Europe and USA and the factory management is performed by the factory manager and his staffs in Chinese way taking the merits of Japanese way into it, which they learned in training in Japan. There was a kind of management, so to say in natural way, according to our impression
- As for the personnel, the company can employ excellent people not only from Hangzhou but also from entire China, and they are instructed from the parent company to train the employee thoroughly. The department managers and engineers visit Japan for receiving training.
- They perform various kinds of manufacturing in commission in addition to the production of their major products, through which they have learned wide range of manufacturing technique in a short period. They have received a new inquiry recently.

b) Use of local enterprises

- Seen from their product scope, the company (B) seems to need almost no manufacturing of parts in commission or purchase of intermediate components.
- The company's policy is to install the state-of-art manufacturing equipments and mother machines in the company for coping with the external order for manufacturing in commission.
- Through our observation how they install the newest equipment and mother machines and how they have digested the know-how for using them, even after taking the merit of this company, that they can employ excellent people, in consideration, we have the impression, that Chinese small and medium enterprises will achieve modernization and technological innovation in a short period, if the financial problems can be solved.

7.4.2 Simplified Diagnosis and Selection of Model Enterprise

(1) Execution of simplified diagnosis

The visit investigation for 16 companies from machine and electronic industry was performed in form of the simplified diagnosis in following steps:

- (1) Interview with the manager and department managers,
- (2) Questions/answers regarding the questionnaire (but only front half part of the materials could be recovered, because of some mistakes),
- (3) Factory inspection, in which the problems found were pointed then and there, and correction methods were suggested, and
- (4) Additional questions/answers and summary of the result.

(2) Participants

A specialist of economy from Machine and Electrical Administrative Management Office of Hangzhou Municipal Economical Committee participated for the entire period including the period for diagnosis and instruction of the model enterprises. Higher production engineers of Zhejiang production promotion center and a lecturer of Zhejiang university management school participated properly. Further, a member of Department of Small and Medium Enterprises of Hangzhou City Economic Committee and a member of its Policy Group participated in the investigation of actual state of enterprises sparing their schedule.

We visited 2 companies a day for 8 working days i.e. 16 companies in total. The locations of 10 companies are in the vicinity of about 30 minutes from the center of Hangzhou city, 4 companies in the city of Fuyang, Hangzhou in the distance of about 1 hour by car, 1 company in Shukzan city, Hangzhou and 1 shipyard at Sentou river.

(3) Selection of model enterprises

After discussion with the participated members of our counterpart (hereafter C/P), we selected 3 companies taking the followings in consideration:

- (1) The enterprise, which we judged to have many problems,
- (2) The enterprise, of which the manager desired our diagnosis and instruction strongly,
- (3) Unbiased selection of management form and enterprise scale.

Among the possible enterprises to be investigated for this time, 3 enterprises belong to electronic industry. But one of them is a manufacturer of mainly telephone terminal connector box, namely manufacturer of cases made by sheet metal works, although classified in electronic industry. The second one is a small-connector manufacturer. But it also manufactures micro-motors in commission from a Japan-owned company and the Japan-owned company has highly improved management system and technology and we concluded that the connector manufacturing section of the company must only study the level of the micro-motor section. The last one is a manufacturer of semiconductor cooler. Although we find instruction points for

improvement in the control of alloy characteristics distribution in its manufacturing process, another company had higher priority than this company on the basis of above criteria in (3). As the result, no electronic enterprise remained as the model

7 4.3 Simplified Diagnosis

The outline of the diagnosed 16 companies and the major contents of diagnosis and instruction are as follows.

(1) Company M001

1) Outline of company

- -Manufacturer of small boilers for heating in buildings
- -Founded in 1994 as a private company and studied business initially in a company of the same industry It had specialized to heavy-oil boilers and natural-gas boiler showing no interest to the coal boilers, which had become its strength in the trend of environmental protection in recent years
- -The brand name “Zhongneng boiler” was selected targeting the boiler having good performances resulted from gathering wisdom of many people.
- -Design (by 10 designers), production and marketing are performed all by its own people.
- -The burner units are imported from Germany or Italy.
- -They have difficulty in receiving aid from the small and medium enterprise support system, employing the engineer and in financing problem.

2) Diagnosed and instructed points

- -Its new factory has already been built in the neighborhood, serving also as a measure against the noise from sheet metal works and its operation will bring expansion of production capacity up to 5 times than before, according to the company’s explanation. For recovering the investment, the measures for receiving more orders should be planned and started as early as possible.
- -For the purpose of improving the cooperation between departments, we introduced “Design Review” system for new orders, which tighten the cooperation of the concerned departments, placing the design department in its center, through exchange of information of each new order between the persons in charge
- -For the burner unit as an important component, of which the burner and its controller are imported as a set, attention should be paid continuously for its domestic as well as international technological tendency including for those of automated control.
- -The workshops are kept in very good order. We recommended to place bulletin board for products in assembly indicating the customer name, product type, planned shipping date etc., and introduced how it is effective for improving workshop discipline and quality control

(2) Company M002

-Refer to the item “Model enterprise”

(3) Company M003

1) Outline of company

- Manufacturer of various tealeaf processors
- Founded as a township enterprise, purchased the right of business in 1994 and got official approval for business as a private company in 1997.
- Cheap price is the key of business, as the customers are very small enterprises in tea producing districts, as they said
- For production capacity and product series they evaluate themselves as competitive, but their weakness is in technology and finance for purchasing equipment and they want eagerly to be under joint management with Japanese enterprise.
- Major manufacturing processes are sheet metal working, welding, machining and painting. They cast sand-mould casting within the factory.

2) Diagnosed and instructed points

- 5-S (in Japanese: Keeping workshop clean and in order) is disregarded at all. The conditions are especially inferior among 16 companies, which may disturb the joint venture plan.
- The completed products are covered with sand and dust. Some machine parts are rusted.
- The factory buildings are dotted on river terraces. The entire lay out should be examined including products- and parts-transport routs

(4) Company M004

1) Outline of Company

- Machining of telephone terminal connector box and railroad branching rails, manufacturing of wire ropes and extension codes
- Founded in 1984 and promotes diversified business handling various kinds of products.
- The company keeps stable business mainly based on governmental demands, namely, getting new business for high speed railroad plan having high national priority, in addition to satisfactory demands for telecommunication companies and telephone terminals,
- They have such various kinds of production equipment and wide range of manufacturing techniques as an electrostatic powder coating equipment, large mother machines, a resin injection molding machines, a large wire twisting machine etc.
- They have no financial problem but need more capacity for developing new products, as they said

2) Diagnosed and instructed points

- They recently started OEM-production of extension codes. The structure of injection molded connector part is designed by the customer specification, but they obtain the part of other similar products from the client trading company and study them for improving their manufacturing technology.

- -This company needs wide range of technologies. They should improve their technology and management through executing systematically planned education and training program.

(5) Company M005

1) Outline of Company

- -Manufacturer of filter-presses, separators and grinders
- -They orient themselves to large products for enterprises of chemical industry, metallurgical industry and environment-protective industry and they have also high market shares
- -The international competitors are Japanese and German. Their first target is to replace imported products at present by domestic ones. It is necessary, as they believe, at present to raise the rate of automation in the products and to improve reliability against failures of control-circuit.
- -The company belongs to the same business group as M008

2) Diagnosed and instructed points

- -The keeping conditions of electrical components including magnetic switches and relays for control circuit of product devices are poor, those covered with sand and dust are found here and there. The necessity for improving the keeping conditions was pointed out.
- -The customers' claims are to be recorded and all occurred cases including in the past should be summarized and analyzed. For examining and establishing purchase policy, the reliability information of electrical parts and components should be collected for the products of domestic suppliers and foreign capital joint ventures.
- -The wirings in control boards are rough and unseemly. All the wiring materials in a board shall be fitted to a model pattern before cutting for adjusting their length even. Then bend the cut wires at every corner properly according to the model pattern.

(6) Company M006

1) Outline of Company

- -Builds ships of 5,000 ton class and manufactures stationary structures including cranes.
- -Founded in 1975. 90 % of their sales at present are for Japanese market. Based on the basic design performed by the customer, they develop it to the manufacturing drawings and deliver the products in 6 months. They have some steel plates in stocks for assuring the delivery date. Supported by this strength for assuring the order-receipt, they have received advanced orders for 5 years at present. The customers' engineers come sometimes from Japan for supervising.

2) Diagnosed and instructed points

- -Their sales activity depends on the foreign agents. They should bring up their own power for cultivating future markets.

(7) Company M007

- Refer to the item "Model enterprise".

(8) Company M008

1) Outline of Company

- Manufacture of semiconductor type coolers (thermoelectric elements) and assembly of their application products.
- Founded in 1996 The products are used for cooling personal computers and for cooling mineral water
- Integrated manufacturing from alloy ingot production, cutting chips till soldering on ceramic substrates.

2) Diagnosed and instructed points

- For the characteristics evaluation test after alloying, measuring of several points around the alloy bar is insufficient. The after-slicing measurements of characteristics distribution in the plate surfaces taken from both ends and the center were proposed for verifying the fluctuation of characteristics Their correlation with the final test results shall be investigated for improving and stabilizing the work process.
- It was also proposed to illustrate the numerically recorded data into graphs, so that the trend in lots can be observed clearly.
- The lighting in the assembly workshop is only from ceiling. It is very dark above the assembly worktable where precise soldering works are carried out.

(9) Company M009

1) Outline of Company

- Manufacture of small connectors and on-commission manufacture of micro-motors
- Founded in 1968 and started its business from manufacturing small connectors. The business for home electric products is satisfactory and export rate for USA etc. reaches 30 %. Micro-motor manufacturing on commission of a Japanese company started in 1993 extends its scale year by year as the personal computer demand increases. The total number of employee expanded up to 2.5 times of that in 1997 (895 persons).
- For on-commission manufacturing of micro-motors, the parts and components are supplied from Japan
- The results of instruction executed by Japanese supervisors are now established in the company's management and technology and relies now upon the native people. Daily quality information is indicated for every worker groups. The betterment proposal system and QC circle activities are activated.
- The company has just been transferred from state to private enterprise in September 2000 and the managers as well as employees are strained, as they said.

2) Diagnosed and instructed points

- The management level of small connector manufacturing line shall be raised through learning the level of on-commission manufacturing line. The model is near-by.

(10) Company M010

1) Outline of Company

- Manufactures racing boats (kayak etc.)
- Founded in 1988 as a private enterprise and accepted the capital participation (25 %) of an Australian business company.
- The above measure resulted in increase of the export for USA, Australia and Japan, raising its rate up to 50 %
- They prepare wooden models following the popularity in the market and they have difficulties in its speedy change and high model costs.
- The manufacture process is simple and consists of manual works. It may be serious for them if the skilled workers should be headhunted.

2) Diagnosed and instructed points

- Not especially.

(11) Company M011

1) Outline of Company

- Manufactures ball and roller bearings for autos, ships and general mother machines, tending large products.
- The export rate has reached 40 %. Its present target is to raise its share in domestic auto suppliers market.
- The inner and outer races of bearing are manufactured not from forged bars but from the pipes worked in the company from the bars forged by its subsidiary company. With this technological improvement, the lifetime of the bearing is extended to 3 times and production efficiency to 2 times Through these technological improvements, its cost, quality and productivity are kept in high level in the domestic market.

2) Diagnosed and instructed points

- Although many works are made automatic, we found many manual work steps, the motion in which can be bettered or which can be made semiautomatic easily.
- They should learn technology and install equipment according to a long-term program for the purpose of acquiring the ability for quality evaluation including lifetime test, referring to information from external evaluation facilities

(12) Company M012

1) Outline of Company

- Manufactures motor hoists and several kinds of motor
- Founded in 1958 as a state enterprise and just privatized in October 2000. The company struggles enthusiastically in new organization containing more than a hundred personnel to be reduced
- As the management has been established, they are going to build up technical and business

departments.

- Although the factory equipments are old, they have various manufacturing technologies. The key for development depends upon the conscious reform of the entire personnel for privatization.

2) Diagnosed and instructed points

- We recommended announcing the basic principles of management officially as soon as possible for the purpose of target setting and orientation of personnel.
- The improvement programs should be established, making the strength and weakness of its products clear by comparing them with those of the domestic competitors using catalogs.
- For promoting consciousness reform of the personnel to privatization, the order and cleanliness in factory should be thoroughly improved and the inside of factory buildings should possibly be made brighter one by one.

(13) Company M013

- Refer to the item "Model enterprise"

(14) Company M014

1) Outline of Company

- Manufactures various springs for motor cars (with 2 and 4 wheels) according to the customers specifications
- Founded in 1988 as a private enterprise and started with motorcycle-use springs. The results of their effort for technology improvement made it possible to extend the customers to 4 wheel auto manufacturers as well as to bring forth the products with patents. They produce also springs for motor-driven tools and household electric products.
- The factory is fully occupied by production equipments and has no space for extension of production capacity even for coping with progressing negotiation. The company has no prospect of financing the extension because of the private ownership.
- As they regard it important to bring up the personnel, they send their engineers to universities, invite professors of university for holding lectures, invite professor class person as personnel, visit excellent companies in the neighborhood etc. actively. In 1998 they founded the spring laboratory in the company.

2) Diagnosed and instructed points

- They should develop the product evaluation technology and enrich the equipment for it, although we do not know the actual situation enough because of lack of time for visiting the laboratory.
- For the imported wire materials, the quality evaluation items and evaluation methods for them at their acceptance tests should be determined.

(15) Company M015

1) Outline of Company

- Manufactures clutch and brake for autos.
- Founded in 1985 as a township enterprise and transferred to corporation in 1995. This is only one that belongs to large-scale enterprise seen from capital and number of employee.
- The export rate reaches 25 % of sales for USA, south east Asia and Japan including for reparation.
- The company is building a new factory located outside of Hangzhou city, which has a space of a little less than 7 times as large as the present one, which is almost completed and the manufacturing department will move to there.
- They have high ability for new product development, performing CAD design for the products. The metal mold manufacturing is integrated with the CAD. The company is equipped with an exclusive metal mold manufacturing department as well as a mold storage place. The number of manufactured products per each mold is controlled for judging the life of mold and examination of the mold material.
- Both in the range of product scope and production quantity the company is superior than
- The competitors.

2) Diagnosed and instructed points

- 2 jigs are used for caulking and assembling the clutch mechanism. An additional jig is required for achieving higher operation rate of the hydraulic press, although depending also upon the required production quantity
- As they are preparing for change over of approval from present ISO9002 to ISO9001, they should recheck the entire workshops, if the present control level corresponds with the ISO requirements

(16) Company M016

1) Outline of Company

- Manufactures trucks for agriculture, special vehicles and DC motors.
- Founded in 1960 as a state enterprise and privatized in July 2000.
- Holding up "Developing new products coping with market needs Marketing promotion through new product development" at its privatizing, the company is going to introduce the market principle into technology development, employment and income distribution system for a series of reformation.
- The equipment they have is old. Their future problems are technological innovation and modernization of equipment.

2) Diagnosed and instructed points

- For the new model development, consideration should be made not only for the external view but also, as a middle term project, for development of the new car considering performances and safety.

- The material handling of large components in the factory should be improved through investigating how the main parts move actually through the factory.
- The component suppliers should be improved through evaluating their ability for coping with requirements for quality, cost and delivering period.

(17) Company M017 (additional diagnosis)

Based upon the request from C/P, we diagnosed an auto parts manufacturer in Tonglu county Fuchunjiangzhen

1) Outline of Fuchunjiangzhen

- Population: 26,000 people, Output: 1.6 billion Yuan
- Major industries:
 - Machine (They want to extend auto-parts industry. Water turbines for power generation equipment etc.)
 - Clothing (Production on commission)
 - Construction material (Cement poles, Pipes etc)
- The company started as a private enterprise and has problems in management. Their consciousness stays in a family enterprise. The manager controls everything and important things are sometimes missing

2) Outline of Company

- Founded in 1993 as a private enterprise Manufactures frame structures for auto seats. The construction of new factory is completed and they are preparing for layout change including moving the equipment
- 180 employees including 35 engineers. Output: 50 million Yuan.
- The customers are several auto manufacturers including Second Auto Manufactures Group.
- Press works are their major work process. Manufacturing of seat bottom plate using CO2 gas welding etc
- Press work of thick plate and large parts as well as painting are worked externally
- Metal moulds are manufactured in the company using 4 electric discharge machines, except quenching (externally worked).

3) Diagnosed and instructed points

- They manufacture the parts using single step press works, of which the process planning is good Metal molds are designed well.
- For the press works, protectors are used and attention is paid for safety.
- The wire-cut electric discharge machines are used well with high operation rate. Seen from the shape of works, installing a profiler type electric discharge machine is recommended. The punch and die are formed at the same time and the die is manufactured by electric discharge machining.
- Discussion was held for improving the press forming of comb shaped portion of pressed thick

plate part. The lack of material flow into the comb shape was observed, although we could not see the actual process because the part was manufactured externally. We proposed to test the use of existing large hydraulic press using slow pressing speed.

- Further, we observed bowing of parts due to carburizing. We proposed to investigate the quenching temperature curve and the time jointly with the external carburizing company.
- We introduced a simple pusher method for charging materials for secondary pressing of small parts.

7.4.4 Diagnosis and Instruction for Model Enterprises

The first visit for diagnosis and instruction for model enterprises was performed during October and December 2000. At the end of visit, we summarized the pointed-out items and left the pending problems to be solved to the enterprises. The C/P explained the pending problems again to the enterprises and in January 2001 and checked the progress and sent the progress report to the investigation team. The diagnosis and instruction through second visit was performed on the basis of this progress report.

(1) List of selected enterprises

The list of model enterprises selected from machine and electronic industries and the outline are as follows

Table 7.4.4 List of outlines of model enterprises

	Company A (M013)	Company B (M007)	Company C (M002)
Type of enterprise	Private	Corporation	State
Category of business	General machine	Special machine	Auto parts
Products	Reduction gear	High place work lifter	Sintered alloy bearing
Type of production	Mass production on order	Individual production on order	Mass production on order
Scale of enterprise	Medium	Small	Medium
Capital	8 million Yuan	320 thousand Yuan	70 million Yuan
Sales in fiscal '99	57,520 thousand Yuan	3,020 thousand Yuan	27 thousand Yuan
Employees in '99	129	27	170*
Business result in '99	Profit	Profit	Deficit
Sales per head in '99	446 thousand Yuan	112 thousand Yuan	159 thousand Yuan
Age of manager in '00	33	46	49
History of manager	13 years since foundation at the age of 20	Transferred to here at the days of township enterprise at age 37	Entered at age 20. Appointed to Manager by public advertisement Promoting privatization
Note	Tried to transfer to corporation in '96 Young management	Privatized in '95 from township enterprise	1) Privatization May '00 2) Moving according with urban planning with 85% completion in March '01 * except those temporarily laid off

(2) Model enterprises (Company A: M013)

1) Outline of company

a) Reform and Management policy

- Founded in 1988 as a private enterprise together with 3 members borrowing the name of township enterprise
- The capital of 8 million Yuan at present is going to be increased to 10 million Yuan for acquiring the right of direct foreign trade.
- Management target of the company is "Based upon product brand strategy, tending toward grouping and aiming eternal business".
- Management philosophy is making effort for realization of High quality and low price of products, Highly efficient office works and Zero distance service (speedy offer of service to the customer).
- Management is executed by young and unexpected managers with exception of the manager of development department At the same time the company is a typical private company having many relatives and acquaintances in many departments. The manager's worry is that his young staffs do not point to the direction willingly as the manager wants.
- The manager plans to reform the technology and going to build its new factory in stages in 3 years from '01, for which the site preparation for the already acquired ground is started.
- At the time of first visit, they were working for preparing management standards require for quality management system, expecting the judgment for ISO9002 in short Within the scope of diagnosis and instruction, we diagnosed the workshop and pointed out the points to be improved The company got the certificate for ISO9002 at the end of '00.

b) Products

- They manufactures only worm/pinion type reduction gear box, having 60 series consisting of 20,000 types.
- The shipping results in fiscal 2000 are 100 thousand sets per month in average.
- They aimed specialized market in the past for showing specialty in detailed parts. But the present products are of old design and they need the development of such new type of speed reduction systems as continuous speed variation types and ball type. They aim now the development, manufacturing and marketing of products having power transmission mechanism.

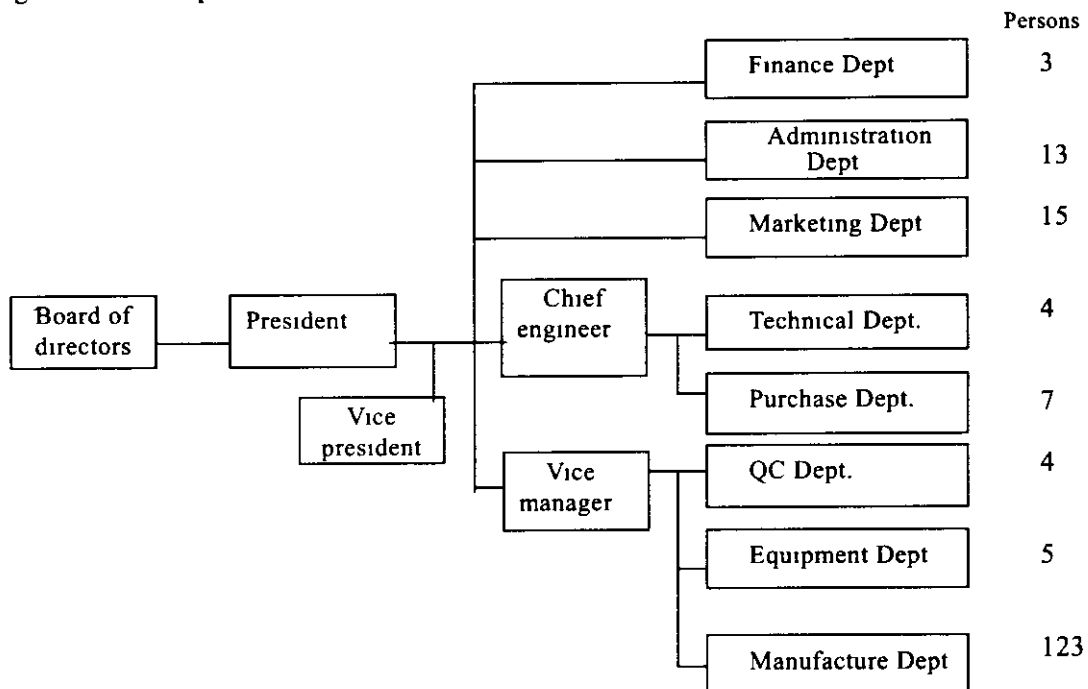
c) Marketing

- The company makes effort for advertisement with enthusiasm to make its brand name the pronoun of reduction gearboxes.
- The company has marketing net of primary and secondary agents in all through China and the brand name is famous as the reduction gear manufacturer in Zhejiang
- They export the products for south east Asia and USA via trading companies, which occupy 20 % of the sales. They find it necessary for joining WTO to improve its technology level.

d) Production

- Both of production of standard types for stocking and on-order production in parallel.
- The parts of standard type products are stocked in its intermediate warehouse as regular stock parts and controls the inventory by setting their maximal and minimal stocking quantity. The parts are supplied to the assembly workshop by the quantity for a day. This stock makes coping with short period delivery possible but makes the proper inventory control necessary. The time required for replenish stocks is 5 to 8 days. But 20 days to a month is required for large castings due to the necessary leaving time after casting.
- They imported a state-of-art machining center from Japan for machining large parts. At present machining technology experiments and trainings are performed with this machine, taking future machining of new products in consideration.
- They purchase the iron castings for gearbox casing and brass castings for worm gears from a casting manufacturer in the neighborhood nearly exclusively. We had the chance to visit the casting manufacturer They perform sand mold casting and have high skill level for forming sand mold using wood patterns. Although this is a small factory on a small ground, this is an excellent factory performing careful wooden pattern control.

e) Organization and personnel



2) Problems identified through the diagnosis

- a) As the company was selected as a model company, we requested to submit the balance sheet, profit-and-loss statement and itemized cost statement. The answer was that no itemized cost table had been prepared. Further, among the management items of Finance department,

'financial treatment' was executed a little, 'Financial budget analysis' and 'Cost calculation analysis' are not executed yet. They seem to have added up for accounting not in actual basis but partly in cash basis.

- b) We asked the manufacturing cost of product with high sales quantity and the answer was that they did not know it. They said that the unit sales price was a resulted value from once set value according with market behavior, and it ought to have contained 15 to 20 % gross profit. The conclusion was that they knew no method for calculating unit manufacturing cost of each product
- c) The standard work time of each work step for calculating percentage pay was listed precisely in tables but these standard times had no connection with cost calculation and no actual work time was collected.
- d) They have never prepared budget. They did not know how to make it. Naturally, they had no long-term plan.
- e) All accounting values were in the manager's notebook or calculated in the manager's brain. By this chance the manager would improve management by opening the values to the department managers, as the manager said.
- f) 'Division evaluation standard' had been worked out in May 2000 and based upon it the 'Workplace diagnosis' by management was executed for a department. More than 300 requirements were pointed out and they were put in order and instructed to department managers in charge for execution of their improvement. They were ignored.
- g) We made investigation of the actual execution state of major works and management points determined in the 'Division evaluation standard'. The total major management items of all organizations (8 departments and workshops) were 54 items, of which the execution states were:
 - i) Executed items 6
 - ii) Executed a little 41
 - iii) Not executed 7

It became clear that only those items had been performed which had been easy to manage.

- h) There were remarks related with preparatory works for getting certificates for ISO9000, that internal standards had been established but the actual works were not performed accordingly

3) Instructed items and future problems

A) Instruction in cost management (relating with a), b), c), d) and e) of the item 2)

We held an explanation meeting for cost management in the presence of the manager, manager and person in charge of finance department, managers of manufacture department, administration department and general affairs department, asking questions to the participants. It was very effective for our investigation visit to enterprises, supported by C/P window and prior to start our visit, that we got lectured from a certified public accountant about the balance sheet, profit and

loss statement and itemized cost table in China.

1) Subdividing the accounting items

a) For taxation accounting, private enterprises do not need to submit any cost detail statement Chinese law allows the direct material costs and several expenses including personal cost as used for enterprise-internal management, to be managed summarized optionally in any necessary item. The company A used to calculate in lump sum and had no itemized result record of occurred costs and could not grasp the basic values necessary for calculating cost of each individual product type.

b) Accordingly, we made them start to grasp the results of actually occurred costs from 1. December 2000 after preparation period, by determining classification of responsible costs for organization and person and determining the accounting items even though they may be a little rough, taking the opinion of manager.

- 1) Marketing management costs labor costs, advertising costs, other detailed marketing costs
- ii) Administration department costs: labor costs, depreciation costs, expenses (subdividing items as fine as possible)
- iii) Production department costs : labor costs, depreciation costs, expenses (subdividing items as fine as possible)

In the second visit we confirmed, that they had started keeping books using accounting books available in the market. Thus the cost results for each cost item could be grasped and it was expected that the work cost rate would be calculated in 6 months.

ii) Calculation of basic values (base unit)

We introduced to them a simplified method for calculation of standard cost by means of determining basic values with the following steps

a) The product types were classified largely in 5 groups.

It was decided to classify the groups further into type groups, if a large deviation is found in direct material costs by preparing direct cost table for a typical product type.

b) Preparation of purchase price table for one set of product by preparing list of used parts and materials for one set of product for every product group or product type.

At our second visit, the preparation of direct material tables for basic standard products has been completed. The lists are going to be prepared further for products with larger production quantity sequentially.

c) Preparation of manufacturing process charts for 5 product groups

On this basis the range of suspended property calculation is determined.

d) Determination of manufacturing (man-) hours for each work step of comprising parts

At our second visit, the manufacturing process charts for standard products had been prepared and manufacturing hours had been set.

e) Calculation of manufacturing hour rate of workshops

This calculation was going to be made for the present using the result value of labor cost and expenses grasped for a month from 1st of December. However, due to lack of result records, more than instructions could not be made.

- f) Each of the personnel in marketing department and administration department were to declare his labor supply rate for 5 product groups or jobs common for all groups, which were to be summed up for each group.
- g) For the total values of labor cost and expenses, the actual results in December were to be used at present, of which the total values were to be assigned according to the labor supply rate for each product/type group. Further, they were to be divided by sales quantity of each product group for calculating the marketing management cost and administration department cost per set of product. Only instruction was made for this because of lack of data.
- h) The sales quantity and amount of each product/type group were to be calculated in advance. At the same time, the standard marketing price of each product/type group as well as actual marketing price data at upper and lower limit were to be plotted as a graph. The various values of production quantity were prepared but sales quantity and amount had not been prepared.
- i) The manufacturing costs per set of product could be calculated by the steps above, but at our second visit, there were no actual data and only explanation of calculation process could be made.
- j) On the other hand, as the end of December corresponds to final settlement of accounts, we gave instruction to take stocks of all parts and materials, suspended half made products and completed products in the factory. This had been executed. In future, when manufacturing hour rates have been calculated, inventory evaluation amounts of half made products and completed products shall be calculated using this inventory quantity added with material costs and manufacturing hour cost
- l) Company (A) manufactures large amount of product parts and stores them in the intermediate warehouse and supplies them to assembly shop first after receiving orders.
- m) Their relation with the balance sheet and profit and loss statement used at present was confirmed

The “calculation of manufacturing cost/ set of products” is outlined in the examples of diagnosis and instruction items.

iii) Future problems

- a) The necessary activities in future are continuing setting the basic values for product/types and grasping the result values of each expense item. The precision of account settlement is improved by setting manufacturing hour rate more precisely. We recommended utilizing the manufacturing cost of each type, when it has been known.
- b) We showed that, when such basic items were comprehended as material costs, manufacturing man-hour, manufacturing hour rate, assignment of management department costs and

marketing department costs etc , it would make planning annual budget possible, the comparison of which with its settlement would lead to improving the budget planning and further to plan difference analysis

- c) We proposed to apply them for prior estimation of the manufacturing cost of new products
- d) Application for long-term business plan and new business plan

The long-term business plan, which digitizes the future business image of the company as targets, is planned for every year of the period of 3 to 5 years. Especially for new business plan, it is used for the purpose of estimating investment capital and verification of profitability and recovery or invested capital. It is important for all of these plans to record the background of setting values, process of planning and measures for realizing the numerical targets clearly in document. For their actualization, the progress of measures shall be managed and the change of situation shall be coped with.

B) Business execution management (relating with f) and g) of item 2)

We held interviews with some department managers based upon the actual state of “department evaluation standard”

All department managers understand the major items of business, which his department should be responsible for execution. But they do not understand fully what actions mean ‘execution’ and what results mean ‘having executed’. We found what the weak management is, as the manager said. They knew the major items (Plan) but did not the items for verifying them (Check) and, furthermore, content of execution plan (Do) were not clear.

Accordingly, we selected 2 to 3 items from the major items (P) and explained what results (C) are obtained by performing the items and after that, let them submit the items planned by their selves

We held interviews with them, confirmed the management items and instructed to prepare execution plan using more tables and graphs and applying 5W1H method.

We introduced this as “Daily business management” in the workshop seminar but also reported in “Diagnosis and Instruction Examples” Refer to it.

C) Introduction of workshop diagnosis and its execution (relating with f) and g) of item 3)

1) Introduction of workshop diagnosis

For the method for performing workshop diagnosis, the purpose of diagnosis and its effect, how to proceed it, cautions to be kept etc. were introduced using the materials for workshop seminar. We explained at the same time, that the execution plan of B) in former paragraph is a material for grasping the way of performing business and state of progress concretely at the time of executing workshop diagnosis. We emphasized that the factor analysis in case of occurrence of differences from the target is to be performed not only in unsatisfactory cases but also for successful cases. It sometimes brings precious information to examine what the cause

of the success was.

“How to proceed the workshop diagnosis” was introduced in workshop seminar but also reported in “Diagnosis and Instruction Examples” Refer to it

11) Execution of workshop diagnosis

The workshop diagnosis was performed for the staffs of sections in charge of workshop management of manufacturing department and QC department. In presence of the manager and all department managers, we instructed diagnosis method concretely as well as tried to seek the problems of workshop management sections for performing their business.

(1) Instructed points to the managers of workshop management section of manufacturing department

- a) The manufacturing orders to each machining group of the manufacturing department were determined in the previous evening and instructed in the next morning. It is even a very good way but we proposed further the method of determining the manufacturing plan for longer period, at least for 1 week, and incorporating the urgent additional order, considering prevention of occurrence of waiting in machining line caused by lack of time for material supply and also considering the fact that parts for the standard products were manufactured by demand estimation in relation to the decrease of inventory in the intermediate warehouse.
- b) Based upon the order receipt bill they write parts supply bill, machining order and assembly order by hand. We instructed to investigate how to reduce “handwriting” as far as possible. The content and flow of bills including manufacture order from marketing department shall be examined for reducing the load of manufacturing department for transformation of information.
- c) Under the percentage pay system, the manufacturing of more than instruction shall not be allowed. Prevent the loss of work hours by quick instructing to the worker.
- d) It was also important to monitor use of safety and protection devices.
- e) They have no theme for improvement of manufacturing technology. They should determine the theme for this year through discussion with the manager. Get information of cutting tools and grinding wheels etc from catalogs and use them experimentally for improvement by comparing with the conventional ones.
- f) Use the experienced skilled workers for training unskilled workers. Such works as grinding of cutting tools, attaching tool to the tool post etc. are to be trained by repeating for raising the average level of the entire workers.

(2) Instructed points to QC department

Sampling (partly 100 %) inspections in patrol were performed 4 times a day. The inspection results were recorded properly.

The daily reports in the last 4 months show that 80 percent of part manufacturing workshops manufactured no dimension error. On the other hand in assembly workshops, there were cases of

reassembly, in which wrong parts caused wrong movement of the product and had to be replaced.

- a) For the part manufacturing work steps with no occurrence of error, the times of regular inspections shall be reduced gradually and the workshop shall be finally nominated as “self inspection workshop” requiring no inspector inspection
- b) The inspection hour released by the above a) shall be used for inspection and analysis of errors in assembly.

The state of occurrence of errors in machining shop shall be illustrated graphically and put up in the workshop of manufacturing department and utilize for enlightenment of all workers

Refer to “improvement of inspection works” in the examples of diagnosed cases for details

D) Check of “Flow of business” (relating with f) and g) of item 2)

The manager remarked that even standards had been established, the actual works were not performed according to them So, we took up the works “from order receipt till shipping” as a case, and diagnosed if the works are performed according to the standard. As the company A had issued the “Business flow chart” for supplementing the standard, using this we followed the flow of works from the order receipt by the marketing department to the order for production planning to the manufacturing department and to the order for material procurement.

a) Result of diagnosis

Already direct after start of the diagnosis, there were a comment that the works are not performed according to the standard The reasons why the works were not performed according to the standard were (1) The content of the standard is too complicated or ambiguous and (2) when the new man in charge came, he worked optionally in new way.

b) Instructed items

So we started to investigate actual works in the marketing department. For the order receipt works in the marketing department as the window of order receipt, we lined the bills up, which were actually used, and heard the entered content, to whom the bills were distributed, for what purpose the distributed partner used it etc., and wrote them on a blackboard into a business flow chart

We introduced here how to prepare the “business flow chart”, which represented the flow of business according to the “standard” This is the chart that shows the business procedure and flow of information or bills between the persons in charge or organizations in charge, for supplementing the “standard”. This can be used effectively for discussing problems in the flow of information between departments, or for analyzing business at the time of possible introduction of computers in future

After introducing how to write it, each department worked out its actual business flow “from order receipt till shipping” and presented to all participants. The discussion with all participants was made about if the difference between standard and actual works existed and

what the problems were in present work procedures.

For the details of “How to draw business flow chart” refer to “Cases of diagnosis and instructions.”

E) Diagnosis of the workshop facing the final judgment for ISO9002

As it became clear, that the final judgment for certifying ISO9002 were to be held from the weekend when the enterprise diagnosis and instruction were to be completed, we performed about 2 hours of workshop diagnosis on the last day of enterprise diagnosis. We pointed out some problems, even though the self-diagnosis by internal inspector had been made for several times.

- a) The defective parts made in workshop were laid left around the machines. When we inspected the workshop 3 days ago, we had seen the mother machine operator placing a cast iron work piece on the walkway. The answer to our question why was that it was a defective work piece which cannot be machined and inspectors should bring it away.

After 3 days the work piece remained as left so. We instructed to partition the place for laying defective articles and to make appropriate indication. There had been several work pieces left laid, of which the conditions of control were unknown.

- b) The measuring instruments were placed in partitioned area and controlled for measuring accuracy based on the register. But they had no indication of control number and correspondence to the register was unclear.
- c) The old type products were piled up at the corner of coating workshop, some of which package were broken They said they wanted to sell them, if possible We instructed that they might be stored so but must be in controlled condition.
- d) The gearboxes' covers of many lathes were dismantled, for making gear change easier for frequent speed change. We instructed to mount local gear cover as a measure for safety.
- e) Small drilling machines were placed on the workshop floor and the operators worked sitting direct on the floor for drilling and tapping. We asked the company to investigate the possibility of improvement it by introduction of cheap multi-spindle drilling machines and also improvement of transport by roller conveyer.
- f) Disassembling work of returned defective product was being performed. With this regards we instructed to prepare the disassembly procedure and to disassemble the product and pursue the cause of fault according to the determined procedure Namely for various fault cases, the fault characteristic factor diagram should be prepared listing the factors. Using this, the disassembly procedure should be prepared specifying the disassembling procedure and inspection items after disassembly For example in case of returned product due to oil leakage, for confirmation of the reproduction phenomenon, oil leakage should be inspected visually at first, then starting inspections for existence of loosening of screws, fastening of screws with specified torque etc. before disassembly.

F) Other instruction items

a) Grasping the customer behavior

The company marketed products using many agents without grasping who the end users were. They said that the agent never told it because the agents feared to be sold directly if they told it. But it must have been very important for them to know for what kind of machinery their products were used, for preparing business plan and for planning advertisement activities. We instructed them for examining how to further tighten the relationship with the agents.

b) Measures to cope with short delivery period

They wanted to be instructed for the measures to cope with orders with short delivery periods, as they had many such orders. But, as the details of contents and facts of orders with short delivery periods were not clear, we instructed them till next visit to record the data of product type, number of products, degree of short delivery period, name of agents (customers) etc.

At the next visit we requested the data but the data were not collected and no detail of actuality was given

For the standard products the parts were manufactured by estimation and kept in intermediate warehouse.

So it is important to examine the state of stocking in the intermediate warehouse

For the cases of receiving orders for product type having no stock, we suggested the use of "Business flow chart" by adding "Business flow chart for urgent order" for making clear how to transmit the information to the persons in charge quickly, how to insert the procurement of castings and machining of important parts of this order into the schedule.

c) Comparison of characteristics and performances with competitors' products

We submitted the catalogs of several Japanese companies and instructed to the technological department to prepare the comparison table including the domestic competitors of characteristics of the products of own company and to grasp the strength and weakness of the company in the performances, construction, weight etc.

Further for developing new products, we instructed to investigate information of the performance, price, sales quantity etc. of the similar products of domestic competitors via agents, for the purpose of setting the correct development targets.

4) Summary of diagnoses and instructions

The statement was made "The fact that company A had been selected as the model enterprise was a very good chance and good challenge for the management Reform of consciousness was achieved"

Company A is a typical private company having relatives and acquaintances of the manager in many organizations The manager believes that the management should be fair and disinterested, but also knows that sentiments cannot always be avoided in "instruction, supervising and evaluation". For the future management he wants to find a strictly neutral

person as his right hand. This is the problem inevitable along with growth of the enterprise. We agree with his conception.

The sales extension on the basis of conventional products is not so expectable and the company endeavors for the development of new type reduction gear as the important them in 2001, the success of which we expect. Following the 10th 5 year plan of Zhejiang City, the company plans to found technology center within it and we expect that the company will be one of the 50 companies of Zhejiang city.

(3) Model company (Company B. M007)

1) Outline of company and present state

- a) Founded as a township company in 1993.
- b) Although it is a small enterprise but has 4 types of unique standard product and manufactures for received order individually. The sales quantity per year is more than 90 sets.
- c) Although the present marketing routes are restricted in narrow neighboring range, it manufactures such products as increase of sales is expectable by extension of marketing route to urban area.
- d) The products are designed with good-looking construction and are well manufactured and finished. It is developing movable lifter with the target of beginning of marketing in the middle of 2001.
- e) The workshop is well managed and in good order and clean
The control of parts was proper and in order including electrical components till bolts and nuts stored in the parts warehouse and supplied to workshop.
- f) The product comprises a base and a working cage made of steel frames and lift mechanism made of drawn aluminum. The work process consists of comparatively simple work steps of sheet metal work, welding, coating, assembly and control panel assembly.
- g) The term of lease contract for the company ground is the next year. They are forced to face a very severe decision, if they should stay in the maximal scale possible in present ground, or should aim extension of business in the new ground
- h) The production cost of individual single product was not grasped similar to company A. But they had inputted direct material cost of a product type in a personal computer and were groping how to use it. The cost items were divided to some extent and added up in labor costs and other costs. When they understand the philosophy and method of allocation, calculation of individual manufacturing cost is easy

2) Instructed items and future problems]

A) Instruction regarding cost management.

1) Instructed items at the first visit

For cost calculation, at the first visit we instructed similar to company (A) we instructed to grasp the following basic data

- a) The direct material list was to be prepared and the purchase price was to be entered for 4 types.
- b) The manufacturing man-hour was to be set for 4 types.
- c) The labor offer rate of administration department personnel for each product was to be set and labor cost and expenses were to be proportionally divided. As the administration department was small, the cost might be divided according to the sales amount of each product. It was to be decided based on verification of unit sales price and administration department cost.
- d) Inventories were to be taken at the end of December for entire factory.
- e) The sales quantity and sales amount for fiscal 2000 were to be determined at the end of the fiscal.

ii) State of execution and future problems

- a) All the instructed items had been completed including cost calculation of 4 types at the completion of fiscal 2000. The products had high direct material cost rates and as the result of adding the labor costs, the manufacturing costs of each product type they got were nearly the same as estimated from the conventional sales prices, as they said.
- b) For the plan for fiscal 2000, they had completed the marketing plan according to the instructed procedure and determined the contents in detail.
For the yearly-targeted sales quantity, the data had been illustrated in graphs containing the results till February. The “visible management” was going to be realized.
- c) The inventory evaluation amount had been calculated. We introduced the calculation and judgment method of inventory turn over. We recommended finding the trend of each month or fiscal year together with other values indicated in the diagnosis card for using in the management.

B) Instruction for new-business plan

We instructed examination of the possibility; with what policy the production quantity could be increased, if the business were to be continued on the present site. The maximal production quantity on the present site, partial use of external company’s capacity, problems for parts and material procurement, storage of parts and products etc. should be examined.

If business extension on a new ground were to be aimed, we recommended examining the plan also numerically by drawing up the business plan. Increase of sales quantity (marketing network), investment plan and raising investment fund and working capital, payment, depreciation, mass production effect etc were to be examined. The cost was to be calculated applying forecasted values. It was important to document all the assumptions applied for calculation.

3) Summary of diagnoses and instructions

The president of this company participated in the training for small and medium enterprises in February 2001. Some of the instructed items for this time had also been included in the trained

items in Japan and, he said, he could understand them better. At that time direct after his return from Japan, he had told the trained contents to employees and his policy hereafter.

He said, he would hold up "The people are the fundament" and start from nurture of people. We believe that the diagnosis and instruction brought the "chance for reform" of the company.

As the company faced the decision, if business were to be continued on the present ground or to move on a new ground, we hope the company will work out the business plan based upon the marketing strategy for extension of business, estimating the cost factors we instructed,

(4) Model enterprise (C: M002)

1) Outline of company and present state

- a) We had heard that the privatization from state enterprise was to be at end of the 2000, but was postponed to March 2001. On the other hand the new management had been selected and each of them had been promoting the raising of the fund. We heard that the company C had been born by consolidation of 7 companies of machinery and parts manufacturers of autos, but would be divided in 7 companies again.
- b) On the other hand, the company was going to move based upon the urban planning and, about 60 %, mainly machining, had been moved at the time of October 2000, and about 85 % had been completed by move of press work etc. in May 2001. The rests are important work processes, powder alloy sinter furnace and plating equipment, which were under installation in the new factory and waiting their start.
- c) As a state enterprise, the annual-budget making and accounting according to the accounting principle were performed. The manufacturing costs were grasped after a fashion. No comparison of budget and result, however, was made. Further, following up for changes and taking countermeasures were insufficient.
- d) The department managers set the annual targets of his department but did not manage their execution. The department managers understood various BC methods but did not use them in actual works except QC personnel. They did not use them for grasping results.
- e) The statement was made that they had established the standards for getting certificated by ISO9002, but each department did not work according to it, and the cooperation of departments were weak.
- f) The quality evaluations for its own products depended upon the customer. They have neither technology nor equipment for evaluation.
- g) They use many self-made automatic machines and semi-automatic machines for machining, but at the same time many works were carried out manually. No standard work process was prepared for manual works (Exp. Deburring was applied for all products but the order of its application was determined by each worker).
- h) No protector glasses for grinding works and no safety cover for press works were used. Contrivances were made for removing cut chips but their effects were not sufficient.

2) Instructed items and future problems

a) We had proposed at our first visit, to perform budget/results comparison once each quarter for picking up problems and examining the countermeasures and to turn P-D-C-A circle. We proposed also to prepare execution plan in writing and perform progress control using it.

At the first visit, the business plans for fiscal 2001 were presented and further the list of each 3 major problems of department was illustrated. Explanation was made, that the progress of them would be examined at each quarter. The major problems had been decided via discussion among the management. We expect their steady execution and checking.

b) We proposed to execute explanation by the QC department to other departments for the QC techniques used by it, for making use of graphs and tables for progress control of targets and for making the latent problems visible early enough.

The trainings by QC department had been made but their actual use was not yet realized

c) The actual state of organizations should be grasped using the execution plan major problems, supported by graphs and tables, the disturbance factors should be cleared and discussion in the department managers meeting should be made for solving the found problems.

As for the method for grasping present state, we introduced "Workshop diagnosis" performed by the other department managers.

As the management took part in the workshop seminar, we expect that actual application of the results would be realized

d) The safety measures included the problems relating with percentage pay system, that it would have influence on the personal yield. Discussions were made in direction of managing the business placing the labor safety to first.

At the second visit, all machining workers wore protection glasses. Some workers said they got headache by wearing glasses. Although, as the company said, they selected them through examining various kinds in a specialized store, we requested continued examination of glasses, as flickering occurred caused by processing precision of lenses.

The safety guards for press works were not improved. It was left as a future problem.

e) As all manufacturing equipment had been moved other than powder alloy sinter equipment and plating equipment, diagnosis of manufacturing work processes were made again.

All completed parts were immersed in oil and wrapped by vinyl foil before packaging in wooden box. We requested for improving the present way because the packaging wooden boxes were also stained by oil.

f) We proposed to work out a five year plan for nurturing technologies of manufacturing and evaluating sintered alloy bearings. It might be an idea to use characteristic factor diagram for picking up the elementary technologies. Based upon evaluation of present level of the elementary technologies and clarification of insufficient technologies using it, planning of necessary equipment, calculation of required investment, manpower planning to be reinforced were proposed.

At the second visit, the development department expressed pessimistic prospect for future realization. Thus, no more instructions were made than introduction of materials for product evaluation of Japanese manufacturers, which manufacture the same products.

3) Summary of diagnosis and instruction

- a) Facing with the transfer to private enterprise, the management was tensed more and more. The company was selected as a model enterprise in the middle of moving. We expect the company to make use of this chance for improving its management and works in the factory as a stepping-stone for transferring to a private company.
- b) The president of company took part in the training for small and medium enterprises in Japan in February 2000. We hope him to make use of it together with the results of training for this time for new management.
- c) The problem we feel uneasy is nurturing of the people.

7.4.5 Important Notice for Machine and Electronic Industry Area

We visited 16 companies of machine and electronic industry area. Further we visited 3 companies among them as model companies and executed more detailed diagnosis and instruction. Further we visited some Japan-owned companies on site. We summarize the impressions we got through all of them as important notices as follows.

For the management aspect, they know various terms and techniques as knowledge and hope possibly to use them. But they do not know the techniques and processes, how to apply them to their own company or how to combine them to actual actions. They cannot grow out of conventional way and act for improvement little. For acting daily with problem consciousness, it is important to turn the ring of P-D-C-A consciously in daily works, which will make them see the problems step by step. Continuation of actions is important. It depends upon the manager's leadership.

For the technological aspect, all companies possess the necessary elementary technologies in their own way. Some companies own presses and plastic mold production technology, which support the parts manufacturing, till casting technology.

As for the manufacturing equipment, although most of their machines are of single purpose machines, they have also conception for modernization, if it becomes easier to raise fund. We hope they will have long term plan and realize it step by step.

The present weak point is the technologies for measuring and evaluating products and parts. They should enrich especially technologies and equipment for reliability evaluation.

We hope the diagnosed and instructed items to be "executed continuously", "improved" according with the actual requirement of the company, and "make established" in the company.

7.5 Diagnosis and guidance of food processing industry

7.5.1 Present conditions of companies studied

(1) Overview

In consultation with Department of Small and Medium Enterprises of Hangzhou Economic Committee, the study group selected 15 companies related to food processing industry, visited and studied them in October 2000. Table 7.5-F1 lists the overview of 15 companies.

Those 15 companies are classified into 4 seasoning makers, 4 confectionery makers, 1 brewer, 2 healthful food makers, 2 bamboo shoot-related food (canned food) makers, 1 dairy products (and confectionery) maker, 1 soybeans processing maker (such as *tofu*).

In terms of the kind of food, there are four makers at most among the companies studied. Hence, it is difficult to assess the conditions of the whole food processing industries in Hangzhou based on the results of the study. The following description is solely based on the companies studied this time.

Table 7.5.1 lists foundation year, type of ownership, major products, annual sales and the number of employees of companies studied.

Table 7.5.1 List of companies visited F*. foreign-affiliated

Co No	Major products	Type of ownership	Co. Size	Annual earning In 1999 (10 thou)	Employee As of Oct 2000	Founded in
F001	Chemical seasoning	State	Medium	2,000	776	1956
F002	Soy sauce, Vinegar, liquors	State	Medium	4,150	350	1881
F003	Dairy & confectionery Products	Private	Medium	6,493	654	1931
F004	Traditional confectionery	State	Small	1,934	228	1903
F005	<i>Tofu</i> , dried bean curds	State	Medium	5,862	694	1993
F006	Traditional Confectionery	State	Small	921	219	1956
F007	Soy sauce, <i>miso</i>	Co, Ltd	Small	1,506	52	1995
F008	Soy sauce	Co, Ltd	Small	1,200	118	1971
F009	Confectionery	Private (Co)	Medium	8,000	283	1988
F010	Walnut products	Private (Co)	Medium	1,960	147	1994
F011	Bamboo shoot (canned)	Private (F*)	Small	1,002	59	1999
F012	Bamboo shoot, citrus fruits		Small	600	128	1999
F013	Honey, Processed honey, Candle	Joint Co with Hong Kong	Small	8,800	200	1994
F014	Infant food	Co, Ltd	Medium	-	800	1992
F015	Liquors	State	Medium	1,800	160	1956

(Note) Sizes of companies are classified according to the following categories.

Large companies: Capital not less than 50 million Yuan and Employees not less than 500

Medium companies: Between large and small companies

Small companies: Capital less than 5 million Yuan and the number of employees less than 100

(2) Type of ownership

Type of ownership of the 15 companies mentioned above is classified as shown in Table 7.5.2, including its changes since their foundation

Table 7.5.2 Type of ownership and transition of the companies visited

Type of ownership	Changes of type of ownership	Number of companies	Size of companies		
			Large	Middle	Small
State-owned	State-owned at present	5		F001 F002 F015	F006 F004
	Just before privatization	1		F005	
Private, Co., Ltd.	Privatized several years ago	3		F003 F009	F008
	Private since foundation	3		F104	F010
	Joint venture	3			F007 F011 F012 F013

(3) Conditions of production control of the companies concerned

Conditions of the production control obtained from observation of shop floors and a hearing from management are described below.

Of 15 companies, Code numbers of six companies of which shop floors and facilities are regarded to comply with food sanitation standards (production standards called GMP in advanced countries) and the places concerned are listed in Table 7.5.3.

Table 7.5.3 Companies and their places in compliance with GMP

Co. No.	Products	Places in compliance with GMP
F009	Leaving biscuits	Partition in a shop floor
F012	Canned bamboo shoot (non-operation)	Separation of materials at entrance and exit
F014	Infant food and healthful food for each age group	Handling of products
F007	Soy sauce, vinegar	Partition in a room
F010	Walnut, dried bamboo shoot	Partition in a packaging room
F013	Infant food, healthful food	Partition and separation in each working room

Five companies: F001, F002, F007, F009 and F014 received International Standard ISO9002 certificate from an accreditation organization in China.

Table 7.5.4 lists companies diversifying into products other than food

Table 7.5.4 Companies conducting diversification and their products

Co. No	Products
F013	Honey, royal jelly, propolis, candle, ballpoint pen
F014	Healthful food for infant to elderly people
F003	Milk, yogurt for each age group, biscuit
F015	Refrigerator in state-owned group enterprises, medical equipment, real estate
F012	Canned bamboo shoot, canned mandarin orange
F007	Brewed products, bottle making, printing, air conditioning equipment (future)

Table 7.5.5 lists companies having trademarks and brand names.

Table 7.5.5 Companies having trademarks

Co. No.	Brand name	Co. No.	
F001	Xifu monosodium glutamate (chemical condiment)	F004	Wuweihe (cake)
F005	Langhua(Tofu)	F008	Soy sauce (goods)
F014	Gjuyinmei (infant food)	F003	Yanbei (milk)

Two canned bamboo shoot makers have file trademarks.

7.5.2 Simplified diagnosis (overview of the present conditions)

Overview of 12 companies on which simplified diagnosis was conducted is described by industry and by company, excluding model companies.

(1) Seasoning makers

There are four makers for soy sauce, *miso*, and edible vinegar. Among them two makers produce pickles and dried fermented soybeans, respectively, and one maker, soy sauce maker, is diversified into bottle making and printing.

- 1) **F001** is a foreign-affiliated state-owned company and produces chemical seasonings by the fermentation method using rice as material. An 80% of the products are sold domestically and 20% are exported to Southeast Asia, Africa, Hong Kong, and Europe and America. Its facilities are old and there are puddles in the factory and shop floors are slippery, requiring cleaning. The smell of ammonia used for neutralization is present in the factory. The plant has many problems such as no time or date indications of processing on preparation and refinery tanks. The company borrows short- and long-term operating fund and purchase expenses for fixed assets. The company has introduced computers and set up its home page at the Internet, but has difficulty selecting information.

2) **F002** is a state-owned company, founded in 1881, with a considerably long history.

The present president made major organizational changes in 1991. In three plants, the company produces soy sauce, vinegar, *miso*, liquors and dried fermented beans "Toshi." *Koji* (malted rice) and fungi used are also produced in-house. *Miso* is naturally brewed and put in about 500kg-capacity earthenware pots, placed outdoors with covers made of bamboo. The *miso* products include granular *miso* and dry powdered *miso* for Shanghai. *Miso* is also available in a packed form.

Facilities such as fermentation vats and squeezing rollers are old but well maintained. There are disused articles in the plant, requiring removal and cleaning. Wastewater is treated in-house and drained. There is a flowchart posted

Soy sauce accounts for 50% of the total sales and rice vinegar, Huang jiu (yellow rice wine), and soy sauce products (livestock feed) account for 16 to 17%. The products are primarily marketed in Hangzhou region and several percent of the products are exported. Black vinegar is exported to Japan, supplied with cartons (printed in Japanese) from Japan.

3) **F007** is a limited liability company founded in 1995. The local government and current president each have 40% of shares in the company. The company employs 24 physically handicapped people and is exempted from taxation. The company produces various kinds of soy sauce, dark, light, pale colored, and soy sauce like *tamari* like in Japan in accordance with Chinese regions and markets throughout the country. An eighty percent of the products are sold to retailers and consumers. Competition in business is becoming increasingly fierce. The company has difficulty collecting bills. The company lists "Quality," "Hygiene" and "Taste first" as company's motto

Brewing facilities are considerably old but well maintained. There are automatic filling machines for packaged soy sauce, but the surroundings of the machine are disorderly. Product inspection presents slight problem. Matured products are stored in pots or tanks outdoors. The company is diversifying into bottle making and printing. One third of the bottles are consumed in-house. As part of diversification, air-conditioners are now under development, and the good prospect would be opened in the next year.

The sales consist of 40% soy sauce, 25% bottle making and 25% printing. They are making efforts to obtain an ISO certificate for bottle-making and printing plants. In the near future, the brewery plant plans to be moved to an industrial park in the Economic Development Ward Hangzhou city. The company owns computers, but it would take some time for them to fully utilize computers.

4) **F008** is a limited liability company located in Shozan City (foreign-affiliated company: fund tie-up with a company in Hong Kong), founded in 1971 and produces and various kinds of pickled vegetables. Soy sauce is available in bottles and in packages for general consumers but

is mainly consumed in-house. Pickled vegetables are mostly "Takuan (pickled radish), cucumbers and eggplants. The "Quality" brand soy sauce is a recommended product of Zhejiang. Pickled vegetables are also certified as green foods (organically grown vegetables) standard by the Government Agriculture Department and awarded the silver prize. Products are primarily marketed to consumers nationwide except for Tibet. In the past the company exported their products to Japan, Singapore, Australia and America. At present, salted half-finished products are exported to Japan.

New-product development is required. Since selling price is difficult to raise, production cost becomes higher than selling price depending on raw material prices. The company, too, mentions intensified market competition and difficulty of collecting bills as its problems. Computers are used but only in some part of business.

(2) Confectioneries

In confectioneries visited, there are two cake makers (both manufacture traditional Chinese confectionery such as moon cake (Gepei) and rice-flour cake (Rakugan))), one biscuit maker, and one walnut snacks) and dried bamboo shoot maker and one raised confectionery maker. Sanitary supervision of the biscuit and raised confectionery makers was by and large well conducted. The biscuit maker will be described in the clause of model makers for dairy products.

1) **F004** was founded in 1903 and in 1955, it became a state-owned company cooperatively formed by the government and individual. The company produces Chinese traditional confectionery, such as moon cake (Chushu Gepei), Yoten (confectionery), So (kind of cream, food for infants), Koji (lotus powder), chocolate, etc. Moon cake makes up 76% of sales amount and 80% of total profits. The company is one of the 10 largest makers of moon cake in China, and markets its products in the whole area of Zhejiang and its surrounding provinces. The company used to and manufactures ice cream but presently discontinues.

The moon cake is a seasonal product. The company intends to analyze the market and to develop products salable all the year round.

Almost all confectionery operations are manual, and ovens would be only machines they have. Rakugan (rice-flour cake) is formed and compounded by the empirical adjustment and intuition of workers, and packed also manually. Workers wear caps but do not wear gloves. Some workers wear short-sleeved working clothes. Half-finished products before baking are placed on casters and have no covers. Measures for preventing foreign matters from falling into products must be taken as soon as possible from the viewpoint of food sanitation.

Presently, the company borrows long-term operating funds from Industrial and Commercial Bank of China and short-term funds from its employees.

The company has introduced computers but worries about insufficient expertise of the

personnel in charge of the system.

- 2) **F006** is a company with a long history founded in 1875 and manufactures similar traditional confectionery, and became a state-owned company under joint management of a private company and the state in 1956. The current president has an intention to privatize the company through performing organizational reform.

The moon cake makes up 90% of total production and the remainder is solid (powdered) beverage. Manufacturing is almost done by handwork because of product form.

When the visited the company, the operation was finished, but machines formed red rust, suggesting that they were not well maintained. Surfaces of workbenches under drying were somehow sticky.

The products are marketed in Hangzhou City and its surrounding areas. Products are seasonal and the president hopes to invest in developing products salable all the year round. To achieve this, the president thinks that the governmental assistance essential.

Presently, the company borrows long-term operating funds. The company introduced computers but has not yet made much use of them.

- 3) **F010** is a priority company in Linan city, founded in 1994 and produces walnuts and dried bamboo shoots, special products of Linan city. Brand name “Donglin” has become popular throughout the country. The company produces, on orders, walnuts nuts (kernel section), walnut oil, pine seeds, and sunflower seeds packed in bags, dried bamboo shoots and tea (Tianmu green tea), etc.

Walnuts make up 75% of sales amount, and are shipped to markets, supermarkets and stores in airports as airport-designated foods in Huadon region. The company intends to market its products in the international market, through enhancing quality control and technology. Walnuts can be expected to expand the market. The president intends to use powdered walnut as beverage, but the study group suggests mixing it in biscuits and other confectionery or decoration of cakes. The company has an excellent technology to remove a bitter taste of walnut.

The inside of the walnut nuts plant is comparatively clean. Walnuts are dried on the sheets on the floor. Thereafter, four to five people per workbench select walnuts on the workbench. After selection, they are conveyed to roasting oven. Packaging is performed in a partitioned separate room. Walnuts are packed in 12-g, 28-g and 100-g laminated-plastic bags, amounting to approximately 6 million bags in one year. Small bags for in-flight meals are nicely designed. The president has an intention to purchase Japanese-made high-precision scales.

Oil expression is performed in a different factory. Walnut oil has high nutritive value and sells at high price. Dried bamboo shoots appear to be manufactured in a different plant not visited by

the study group.

Presently, the company borrows long-term funds for fixed assets purchase expenses from China Agricultural Bank.

The company utilizes computers for necessary activities as a considerably completed system.

- 4) **F009** is a private company founded in 1998 and produces Kose-tu mochi, Senmai mochi, Kokoki, Someibo (rolls with egg yoke put in-between) and other confectionery for children* from rice

Note: (similar to "Curl" of Meiji Seika Kaisha)

The president has 20% of the total shares in the company, three executives 5%, and the employee association the rest.

More than 80% of the products are shipped to regions in China excluding the southern part. Only a small portion of the products is exported to France, South Africa, and Middle East. The company originally started as oil foods trading company in 1988, and underwent changes thereafter to become the present company. By hearing, the number of employees is 700, but a little less than 280 answered the questionnaire. Accurate number is unknown. It seems that the company is having a difficult time to cope with the problem of retired employees.

The confectionery is manufactured by steaming no glutinous rice, and kneading the product into a thin plate, cutting it into circles with a circular die, baking and raising while passing a tunnel-like oven on a conveyer. During this process, half-finished products are intermittently conveyed with plastic containers. Dough swelled out from the machine is not properly treated. Packaging is performed on seven lines in a separate room. After and including packaging, the product is sanitarily treated. Sealing is performed with a machine. Cost of packaging materials makes up 55% of the total production cost, which constitutes a considerably big problem.

In each production process in the plant, the person in charge records measurement data and it can be said that process is satisfactorily controlled. If the data is made public to general workers and used as self-examination material, the production process conditions would be further improved.

The testing room is provided with aluminum sash doors and walls, and necessary equipment. In the product warehouse, the product is properly stacked using wooden pallets. Product division is clearly indicated and the inside of the warehouse is clean. Computers are used but have not yet been utilized completely.

(3) Brewing maker

The study group visited only one brewing maker.

- 1) **F015** is a state-owned company founded in 1956 and produces huang (yellow rice wine), baijin (white rice wine), and fruit liquors (*ume* liquor, litchi liquor, grape wine, sweet *sake* for

seasoning for Japan). The *ume* liquor and sweet *sake* for seasoning are produced with the technique introduced from Japan and even now interchange with Japan continues.

In the plant, there are normal- and reduced-pressure distillers, raw material immersion tanks, fermentation vats, storage vats, strainers using hollow fiber membrane, ordinary cotton strainers and bottling machinery. They are old but satisfactorily maintained. In the past, the company manufactured alcohol in-house but now purchases it from outside. For general-purpose bottles, Qingdao and Shanghai's bottles are used, and bottles of shochu for Korea, porcelain bottles of Jingdezhen are used. Cost of packaging makes up 30% of the production cost.

One Half of the products are exported mainly to Japan and Korea, 15% of the products are shipped to each of supermarkets and retail stores in Hangzhou City and 20% to the Shanghai region.

Presently, there is no statement of loans but the company is in need of operating funds and complains that a bank doesn't loan the full amount of money because of shortage of security. Computers are used for improving the business.

(4) Healthful food products

The companies listed in this category produce honey, drug products prepared from honey's effective ingredients, nutrition improving food for wide range of age groups from infants to the elderly. Their plants are provided with good facilities, good quality control and good sanitary conditions.

1) **F013** is a limited company founded in 1994 and produces honey products, and candles and ballpoint pens made from honey wax. The president has no shares in the company. This is a good example of the separation of capital and management of the company.

Honey makes up 17% of the total sales amount and is exported to America and Europe. Frozen royal jerry makes up 51.1% of the total sales amount, Hachi-Oh-Sho 15%, and others the remainder. A good part of the powdered royal jerry is exported to Japan through a mail order system as conducted in Japan.

The working room is partitioned by aluminum sashes. Employees wear working uniform. There are encapsulating machinery, tablet making machinery and PTP packaging machine. They are all independently operated.

Inside surfaces of bags are sterilized with alcohol for protection against bacteria. The plant is currently in full operation.

The company purchases raw materials from beekeepers. Honey of litchi is good in quality, can be distinguished by color, and sells at twice as much as price of ordinary honey.

There is a plan to transfer the honey product producing plant to an plant park, where a bee

yard will be located, accompanied by sightseeing. A blue print for the plan is completed but the plan has not yet been started due to lack of funds. The company borrows short-term operating funds from People's Bank of China, China Agricultural Bank and other banks.

Candles are patented and 100% of the products are exported. The company states it is difficult to set the export price

Computers are utilized and a Web Site is set up, but computers have not yet spread to all business offices

- 2) **F014** is a joint-stock company founded in 1992 and mainly produces nutritious foods for infants. The study team visited head office only. The president has 57% of shares in the company.

The products include rice powder for infants, powdered milk, vegetable paste for weaning food, nutritious biscuits for babies who cut its teeth, nutrition-added non-sugar biscuits for middle-aged and aged people, soybean milk products with protein content of more than 30% and raised foods. Rice powder for infants and nutritious rice powder for the aged have been commercialized at the suggestion of the gifted president himself, and are recommended by the state and province, and also approved by Chinese Society of Nutrition. The company has its own laboratory and invests 3% of the profits into research and development.

Other than food manufacturing, the company provides services for collecting blood samples taken from expectant mothers, analyzing genes, determining fetal development and examining the growth conditions of infants of three years old or under. The work is one of the priority subjects of the Engineering Bureau of Zhejiang Provincial government.

In addition, the company supports the development activities of industries and academic circles such as Chinese Society of Preventive Medicine and Chinese Food Engineering Association. A good part of products are domestically marketed and the market is extended nationwide except for Tibet with four branches placed. Approximately 4% of the products are exported

The company gives priority on marketing activities and recruits the right persons for the job throughout the country. The company also recruits administrative executives from outside and directs its energies on employee training.

Problems with facilities include elimination of troubles and measures against static electricity at the time of filling rice powder. Chemical composition of rice powder and bean soy powder satisfies the national standards with an adequate margin. The company has developed its own method of masking bean smell

A significant number of computers are made full use of in various sections of the business places and a computer system has almost reached perfection.

The company is very rare in China in a way that it introduces its products and infant growth assistance activities on newspapers, and, in addition, has a company song.

(5) Canned bamboo shoot makers

The makers chiefly produce canned bamboo shoot boiled in water. One company is described in detail in the clause of model companies. Another company was under construction when the study team visited.

1) **F012** was founded in 1999 and is scheduled to begin its operation in December. The company was originally a cooperative society formed in 1983 with a company in Shanghai

The company chiefly produces canned bamboo shoot together with canned mandarin orange. The company has vegetable fields in highlands and is developing canned beans.

The plant has a separate passage way for raw materials. The plant is also divided according to processes. It is provided with an entrance door for employees, two locker rooms, a washroom and a bath, which represents fine arrangement for hygiene and employees.

Raw materials are bamboo shoots produced in Fuchien and Kangsi, and "Raichiku" harvested in spring.

Approximately 95% of the products are chiefly exported to countries with Chinese residents, such as America, Europe, Australia and Japan.

Products are placed in metal cans made of metal sheets imported from Japan and paper labels are put on cans. Packing cost makes up 33% of the production cost. Labels are made on the request of customers. The company has not yet proper brand names. With assistance of the city government the company has an intention to continue its export expansion of canned bamboo shoot and mandarin orange, but the number of competitive companies is on the rise and competition is becoming increasingly fierce.

Computers are utilized for labor saving, follow-up of business and control of requests from customers and suppliers.

7.5.3 Diagnosis and guidance given to three model companies

Diagnosis and guidance were conducted in two stages. In the second diagnosis and guidance, the team addressed the requests as much as possible.

[First diagnosis and guidance]

(1) Present status of F003 (Milk, dairy products, biscuits)

The company was founded as a state-owned company in 1931, and privatized as a stock cooperative company in May 1998. The current president and secretary invested 100 thousand yuan each, middle management 25 to 50 thousand yuan each, and 80% of general staff 5 to 10 thousand

yuan each

Main products include milk, sour milk such as yogurt, and biscuits. Domestic sales amount comprises of 39 million yuan of dairy products and 26 million yuan of biscuits. Raw milk is brought in from 18 stock farms located in Hangzhou region, where three thousand cows are raised. The company has an intention to have its own stock farms and raise approximately one thousand cows in near future.

Of the sales amount of milk, 40% is shipped to wholesalers, 20% to supermarkets and department stores, 30% to retailers and 10% to home delivery services directly from plants or retailers to consumers.

According to Hangzhou Statistics Yearbook, total production amount of milk in the whole Hangzhou city is 38,550 tons and that in the urban area 30,871 tons. The production amount of this plant is unknown, but is estimated to make up a significant percentage.

Raw milk is carried to the plant by tank lorries, brought into the plant by pipes and transferred to sterilization tanks. The team pointed out that surroundings of connection pumps with tank lorries were not sufficiently cleaned. Sterilization is performed according to the UHT (ultra-heat-treated) sterilization method as done in Japan. Recently, the company produces LL (long life) milk. The number of bacteria is 500,000 peaces/cc, still many. Previously, there was a proposal of joint venture with a dairy maker in Japan was cancelled due to the number of bacteria. There are seven 200cc automatic filling machines; one of them is made in France and the rest made in-house. In addition, there are box-type filling machines (500cc and 200cc) made in The U.S. This is an aseptic filling system.

There is another filling machine for yogurt. For low-viscosity yogurt, half-finished products are filled into containers. For high-viscosity-yogurt, lactic acid fermentation is performed much the same as done in Japan. Machinery and mechanical equipment are cleaned in CIP method. Products after filling are carried to warehouses or delivery companies by bicycles provided with a baggage frame.

Powdered milk manufacturing seems to be performed when a great amount of inexpensive milk is received and was not performed during three days when the team visited the company.

In the biscuit plant, raw materials such as wheat flour, oil, sugarcane, protein enzyme and other food additives are kneaded on the fifth floor. The kneaded product is dropped on the fourth floor from hoppers and carried on a forming (die-cutting) conveyor through an oven.

There are four ovens, which each have different temperatures, controlled from a control board. In the biscuit factory, raw materials such as wheat flour, oil, sugarcane and protein enzyme, food additive are kneaded on the fifth floor. Kneaded product is dropped on the fourth floor. A series of facilities were made by a maker in Shanghai, and costed the company approximately one million yuan and in addition one million yuan for its remodeling. Packaging is performed in a separate partitioned room. The packaging machine is made in Japan.

Workers handling finished goods do not wear gloves, a hygienic problem. The dough dropped

from the conveyor is not properly dealt with. At the entrance of the plant, there is a washroom provided with foot taps but there is no equipment to dry wet hands. The team suggested installing warm air dryers (provided to the lavatory in the office) or disposable paper towels and alcohol sprays if possible. The company replied to the team at the end of the first field study that it wanted to deal the matter as soon as possible

Cardboard manufacturing using a small domestic-made corrugator and two-color printing are performed in-house

The number of employees is 654 in 1999, 388 for production, development and design, 165 for sales, 67 for administration, 11 for testing, and 6 for inspection. There are 73 persons with academic background of university or higher than university.

The characteristic of the company is that two kinds of products are manufactured in separate plants in a contract system. The person in charge (chiefs) in each of the two plants controls everything, including employees' salary. As a result, the salary of the person in charge of the dairy plant is approximately twice as much as that of the counterpart in the biscuit plant. The company executives have a strong intention to correct this disparity. The study team suggested conducting appropriate job rotation of executive staff through mutual consultations, performing personnel rating by a multiple evaluation system, preparing clear employee wage administration regulation for manufacturing, sales and management sections, or introducing a management by objectives system for executive staff and general staff. The team explained the company's policy toward executive staff and how to deal with employees citing examples in Japan. Correction of employee salary disparity must be solved without delay because it greatly affects the company's development in the future.

Another problem peculiar to a state-owned company is how to deal with the retired employee. At present the company carries an excessive number of personnel of a little less than 660. Average age of employee is almost 40 years and average length of service is 20 years. In addition, the company has an obligation to pay annual pension, and medical and housing expenses of the retired personnel. This affects the performance of the company and must be solved as soon as possible.

It is imminently required to improve the problems handed over to the company in order to establish a modern administrative system

Presently, the company borrows short-term operating funds from Industrial and Commercial Bank of China. The company complains about shortage of loans, complicated procedures and long examination time

(2) Present status of F005 (Tofu, dried bean curds, bean products)

The company is a state-owned company, and was founded in the neighborhood in 1949 and in the present place in 1993. The company is scheduled to become a limited-liability company in January or February 2001. However, at that time the state (governmental organizations) will

hold approximately 30% of the total shares in the company

Tofu is very popular with common people in China. The government recommends *tofu* as excellent food product because it is less fatty, high protein and nutritious.

The company produces 33 kinds of *tofu*-related products such as normal coagulated *tofu*, cup *tofu*, fried *tofu*, *yuba* (dried bean curds) and dried *tofu*. The company developed 20 and odd kinds of *tofu*. Last year, the company consumed approximately 10 thousand tons of soybeans. The company produces almost 10 thousand piece of *tofu* (weighing 40g per piece) per day (30t of soybeans/day), one of the biggest makers on a national basis. The company has four plants, produces processed soybean products such as *tofu* in three plants and soybean milk beverage in the other plant. The plant visited has facilities for immersing and steaming raw-material soybeans, separators of bean curd refuse, *tofu* coagulating equipment, machinery for filling *tofu*, dried bean curds-making machines and compression hydro extractors. The machinery and equipment are old but well furnished and well maintained. The company uses CaSO and MgCl as coagulating agent but not acids such as GDL

Fried *tofu* is produced in almost the same manner as in Japan, but fried three times while gradually raising oil temperature according to the Chinese traditional method. The frying work is mainly performed in the nighttime. When the team visited the company in the first field study, it was humid and hot in the workplace for cotton-strained *tofu* due to steam and windows were open. A wire net was partly broken, from which flies entered. The wall gathered bread molds because steam was given off. Workers cut and rolled dried bean curds with bare hands. Sanitary supervision was not well performed.

The team explained and stressed the following. In food industry, sanitary supervision must be observed first of all. Good quality control and sanitary supervision result in good product. The reputation spreads by word of mouth. Sanitary supervision and sterilization of the workplace must be performed company-wide.

The number of employees is 700; 250 for production, 5 for testing, 20 for inspection and a little less than 170 for sales. The company has 32 employees with high academic background, who graduated from universities and graduate schools: 12 for development and design, 14 for administration and 6 for quality control. Average age of employees is 43, comparatively high, and averages length of service as long as 22 years. Sales amount is almost 60 million yuan and the company has a 60% market share in Hangzhou region. The company divides the market in Hangzhou in five districts and there are eight wholesalers. The company has 35 dedicated delivery vehicles (not refrigerator cars).

According to the company, it performs OJT training for employees and has prepared manuals for sanitary supervision and posts them to walls piece by piece, which is, however, insufficient from the viewpoint of actual effects. The company admits employees' shortage of capability and motivation for their jobs, and an unclear human resources development plan. The company wants to hire persons of administrative, development, sales and marketing ability. The team suggested

the company make employees recognize the importance of their consciousness innovation and repeat employee training.

Constant source of worry of the company is that the company must meet the requests from the state. For example, the company cannot change their product price arbitrarily. The company has the following problems: There are fourteen private competitive companies in Hangzhou region. At present there is no assistance from the government. The company has farmers-tuned employees.

In China soybean products are called “Sairo” (bamboo-made charcoal basket for tea ceremony) and are controlled by the state. Tofu seems to be treated specially in terms of tax, differing from vegetables.

The company requested the team to show a model of production and sales management. The company wants to renew its facilities and to develop and market new products which people in Hangzhou region prefer.

The company has a problem, peculiar to a state-owned company, of 500 retired employees. At present one employee supports 0.77 retired employee. The company paid 1.5 million yuan for medical expenses, leading to the decrease of profits. The company has strongly demands to the provincial and city governments, including health care, inequality in taxation between a state-owned and private companies and additional tax payment.

(3) Present status of F011 (canned bamboo shoot products)

This company is a private company for producing to order bamboo shoots, the principal products of Linan City (however, half-finished products from the Fuchien plant are used for about 60% of their products).

The company began its production in May last year as a Japanese-Chinese joint enterprise. The number of employees is about 60, and 80% of them work in the plant. University graduates are three, and five people are assigned to quality control and inspection work and two people to administration.

The working process is comparatively simple, where contents of a can containing 20-L of bamboo shoots boiled plain are taken out and discolored portions of the surface are removed. Then, the bamboo shoots are cut manually into the specified size. Thereafter, the specified quantity is returned to the original can by weighing 11 kg each and sterilized. After adding sterilizing water containing a small quantity of citric acid (pH adjusted to 4.2 to 4.6), the can is covered to be shipped as a product. The manufacturing standard conforms to the in-house standard and customer-specified specifications.

The product is developed in conformity to drawings furnished by the customer, but the development is also commissioned to public institutions such as universities, etc. By the way, the head of Bamboo Laboratory, who is professor at the forestry department, Zhejiang University, is appointed an advisor.

The hygienic control in the plant is nearly satisfactory. The quality control is not perfect, since boundary samples of removed portions, standard samples for manufacturing cut products, etc. are not provided, in particular, at the workshop, or half-finished products and finished products are not clearly distinguished in the warehouse, though indications are provided. However, the product quality seems to be good.

Cans are fabricated in China from sheets imported from Japan. The same cans are used for both half-finished products and finished products.

Presently, for products exported to Japan, the products shipped from this plant are subdivided into 2.5-kg portions again in the nearby plant. This seems considerably wasteful, and the team therefore suggested canning the specified sub-divided products at this plant from the beginning in the future.

The company hopes to receive technological assistance from Japan. To master the technique, the company examines the possibility of reinforced use of technological assistance institutions in the province as well as in the city, in addition to training of responsible personnel in the country.

Presently, the company has about 60 employees and achieves the sales of a little above 10 million Yuan. Forty percent of the sales (about 60% in the quantity base) come from the export to Japan, and the company has sales cooperation with a leading Japanese trading firm and enjoys a strong selling route. The team encouraged the president to secure this route also in the future. In the future, competitors will increase and the price competition will be intensified, but the company is eager to further develop markets and increase the export. The company enjoys good reputation from customers for the good quality and punctual delivery.

Presently, the company borrows short-term operating funds from the People's Bank. The price is paid one month after the goods are exported through the Fat, Grease, Oilcake Company, and the company seems to have financial allowance. However, problems are pointed out in that the required amount is not 100% financed because of shortage of security when the bank loan is received.

From the viewpoint of management, problems include many regulation and shortage of technical development capabilities and shortage of management information. To acquire the technology, the company hopes to have joint development, as well as VC that includes funds and total assistance service

The company utilizes computers and intends to use them for corporate management, but has not yet achieved completely. In particular, it is necessary to improve business, which is unable to catch up with the system and to solve shortage of skills of the personnel in charge of the system. For future computerization, the company pointed out the absence of useful information, and the importance of the existence of a system vender with strong leadership and engineering capabilities and preferential treatments in terms of loans and taxation to it.

[Second diagnosis and guidance]

Items conducted in the second field study as follows:

- 1 Confirmation of achievements for the proposal for improvement in the first field study
- 2 Team's response to the requests from companies visited
- 3 Analysis of results of management diagnosis and explanation of countermeasures
- 4 Provision of examples Japanese companies' middle-term management plan to model and other companies
- 5 Provision of introductory catalogues, product samples or literature of similar food processing companies in Japan

In a seminar in two private companies, the team described the requests from model companies listed in the interim report, priority guidance items, suggestions done in the briefing session on the study results, attended by the first study group and its counterparts. Judging from interim report on improvement measures and hearing from the three model companies and plant surveillance, the degree of enforcement of improvement measures is about 60 to 70%. The conditions of enforcement are described in the following

(1) F003 company

According to its interim report, the company established a technical center in its administrative department and performed employee training and sales intensification (adding two departments into five departments) through activities for obtaining ISO9002 in December 2000.

Working conditions were remarkably improved including the following items. 1. Relocation of a milk-packing-in-bags machine and installment of two additional filling machines (previously yogurt filling machines were placed in the same room), 2 Change of facilities for washing hands in the washing room to foot-operate type, 3. Cleaning of surroundings of the milk transfer pumps to the plant. Refer to "Examples of management diagnosis and guidance N0-13."

For other than plant, response improvement to customers was made through subdivision of the market, and improvement in in-house management and in information collection and communication by installment of additional computers (assembled in-house), but for the time being there are no apparent effects. The company has had very little amount of orders through the Internet including E-mail.

Unbalance in salaries of employees of the milk plant and confectionery plant is under adjustment through fair assessment of the company.

The construction of new livestock farms seems to proceed without difficulty.

In the final day of the field study, the team held a two-hour seminar for executives and middle management, 50 people in all, on "10 Guide lines for manager activities," citing concrete examples. Only names of ten items of the guidelines are described below.

- 1 Target orientation ability
- 2 Leadership
- 3 Organization management ability

- | | | |
|---------------------------------|--|-------------------------------|
| 4 Problem-solving ability | 5. Interpersonal relationship adjustment ability | |
| 6 Subordinate fostering ability | 7. Professional skills | 8. Self-innovation capability |
| 9 Sense of responsibility | 10. Personal magnetism | |

The team submitted the Chinese translation of the above Guidelines by the request of the counterparts of Department of SMEs of Hangzhou Municipality Economical Committee and Foreign Cooperation of China SMEs. This translation is posted as “10 abilities which middle or higher managers must to have” in “Information Department of enterprises” of the home page of Department of SMEs of Hangzhou Municipality Economical Committee. (The translation was attached to the Examples of management diagnosis and guidance N0-13”.)

Questions made during the seminar are as follows: dairy products standards (comparison among international, national, and company voluntary standards), the position of a technical center in the company, how to fairly assess employees in a certain department, how to assess middle managers’ and employees’ sense of belonging to the company, and how to solve problems in the board of directors. The team answered the questions citing concrete examples.

He team submitted to the company merchandise catalogue of three largest dairy product companies, powdered bifidus bacterium and its cultivation method and its related materials (medium-term plan, example of format of management by objectives for employees, numerical values of industrial wastewater quality standards in Japan)

It was found in the second hearing that the company had established “Dairy products technical development center” in the company. The center intends to prepare severer Company (voluntary) standard as compared with National standard. Only this company established such center in Hangzhou city and the city government assisted the company in funds for its establishment. The center is operated under the collaboration of industry, academia and government, and the staff includes engineers of the company and the city government, professors of universities. General director of the center is the former chief engineer of the company, professor-class senior engineer, director general of National Dairy Products Industrial Association and also directors of China Dairy Business Association and Biscuit Association. It is said that competitors can also utilize the center, but its actual operation is not clear, which slightly differ from the results of hearing from the policy making team.

Milk is daily-delivery product and its allowable-storage period is generally short. Chinese people do not like the taste of foreign milk. In the past, an Australian dairy maker sold its milk but pulled out of the Chinese market entirely because of lackluster sales. Hence, China’s admittance to WTO is expected to hardly affect China’s dairy products industry except for LL (long life) milk. On the other hand, powdered milk can be stored for a long period and transported over a long distance, and its production in China is expected to decrease in the future. Therefore the company does not carry out a vigorous propaganda of powdered milk products.

Three years after its privatization, it is said that the company has a plan to introduce early retirement schemes for restructuring the company based on an “M&D” system.

(2) F005 company

Since a great deal of steam is given off in while processing materials, bread molds grow on the ceilings and walls. Since the team pointed out the growth of bread molds in the previous field study, the company provided windows, ceilings and partitions of the workshop with aluminum sashes. In addition to this, the company installed ultraviolet germicidal lamps and set tiles on the walls. A part of *tofu* products were being manufactured in the workshop. Setting of tiles on the ceiling was conducted on a part of ceiling for the check of adhesive conditions. Products were being treated much more hygienically this time compared with the previous time. It is said that the company invested 1.5 to 2 million yuan. Refer to "Examples of management diagnosis and guidance No. 3."

The company newly recruited two persons into management, one vice president and one executive in charge of technology. Employee retraining is performed on employees in administrative and technological sections by lectures from outside and in-house, respectively. It is said that many employees stopped smoking.

Marketing was also intensified together with intensified motivation to raise the company's product share in the market. Since the main product is *tofu* and materials are soybeans produced in China, the company apparently shows little interest in the effects resulting from China's admittance to WTO.

Privatization of the company (a limited-liability company) is targeted for May 2001 behind schedule. At the time of privatization, the state and city government hold each 30% shares in the company, but if many private persons want to have the shares of the company, the ratio of private shares might increase.

The team submitted to the company catalogues of two *tofu*-making machine manufacturers, and a manufacturer of an extruder (pressure mixing kneading machine) for utilization of soy protein and samples of bean protein of the three largest oil manufacturing companies in Japan. With regard to the extruder, the company hopes to use it as a new product. In addition to this, the company requested the team to cooperate in purchasing a *tofu*-making machine made in Japan. Since the request deviates from the objective of the field study, and there is an issue of procedures concerning import and export, the team proposed to cooperate as much as possible, when required.

In this company, the team held a seminar to about 30 people of executives and middle managers in the final day of the field study. The contents of the seminar in consideration of the company's requests are as follows:

1) Quality control

The team explained the objective of quality control, Preparation of work standard for each shop floor and distribution of the standard in such a way as workers concerned can understand.

The staff in charge of quality control performs a sampling test once an hour for checking

abnormalities. If abnormalities occur, the staff immediately contacts the persons concerned and requests to take concrete measures.

2) Hygiene control

The team explained the importance of three hygiene principles (sanitation, speed, sterilization), mental attitude as workers engaged in food processing, and the concept of “Next Process is a Customer”

3) Punishment and reward system

The team proposed to the company that the company highly regard and raise the salaries of employees who contributed to the company through the following achievements: effective suggestions, new-product development and product improvement that yield profits, sales increase or new-market development, prevention of machine troubles by good maintenance. For the contrary cases, the company reduces employees’ salaries.

4) Small group activities

The team explained the activities for inducing employees’ consciousness innovation and aggressiveness, citing examples in Japan. It is important for middle managers to accept employees’ suggestions and to take improvement measures in consultation with senior managers.

5) Economization

The team explained seven “Muda” (wastes). 1. Overproduction, 2. Idle time, 3. Transportation, 4. Inventories, 5. Employees’ actions, 6. Defective products, 7. Waste in processing. The team explained the items of the above corresponding to the company and commented on working practices performed in the company. Refer to “Examples of management diagnosis and guidance No 2.”

Questions were made on the kind of *tofu* and production ratio (cotton-strained *tofu*, silk-strained *tofu*, packed *tofu*, Koya *tofu*, etc.) and methods of sale (chilled-pack *tofu* in supermarkets, *tofu* specialty shops in towns, direct home delivery of small quantity of *tofu* using vehicles). The team replied to each of the above. Further questions were made on the prospects of future *tofu* industries in China, present conditions of import of soybeans in Japan and HACCP (hazard analysis and critical control points), etc. For these questions, the team explained not only theoretically but also practically citing problems in manufacturing *tofu*.

(3) F011 company

The company took actions against the previously pointed-out matters for improvement. For example, the company placed plastics-laminated manufacturing standard (cutting method is illustrated by kind with size) on all workbenches and walls so that every worker understand the work for the day).

In the storage warehouse, division of materials and products were clearly indicated. Products were piled up in five tiers on the pallets, on which kind of products and the number of cans were indicated. The team suggested to enter month and date.

Small packed products have become to be exported, but improvement of its sorting work will be conducted at appropriate time.

Brand name of bamboo shoot products expected to be registered and certified around June 2001.

Based on the results of market research, blue print of a new plant was completed. The new plant will be constructed in a vacant lot in the same premise. Whether the new plant will be a joint-stock company or an owned-stock company is not yet decided. The company hopes to invest about three million yuan to improve hardware. The company is also interested export expansion to Japan.

Since the member of the team in charge of management diagnosis did not accompany the team to the company, a member of our counterpart, who accompanied the team and had a license of accountant, explained management indicators based on the financial statements of the company.

The president has an intention to earn at least 60 to 70 million yuan profits or 100 million yuan profits if possible, in 2005.

The team copied-reference book of bamboo shoots, vacuum-packed bamboo shoot (boiled in water), color-copied recipe for bamboo shoots as a household dish, and bottled "Myanmar."

7.5.4 Requirements and priority guidance items by model companies

In this clause, the team described countermeasures against requirements from companies visited in the first field study. We submitted samples Japanese products and catalogues of machinery and equipment for your reference.

(1) F003 Company

1) Requirements from the company and countermeasures

[1] Improved efficiency of management control

- Production set-up

It is necessary to improve the efficiency of machine and equipment, to allocate the right personnel to the right place, and to replacing the aged workers. It is desirable to carry out job rotation one another in the plant as much as possible.

- Financial affairs

The team explained the analysis of the financial statements in the second field study.

- Equalization of employees' salaries and bonuses

First of all, employees' salaries must be equalized and fairness be achieved for assessment (performance assessment and personnel assessment) between two contracted plants of biscuits and dairy products where different products are produced.

[2] Improved production efficiency --> Solidarity of employees

Duties and mental attitude of high-ranking and medium-ranking managers should first be explained, and then, allow the reliability to grow between company executives and employees and allow employees to become aware of serving at a food manufacturer. It should be explained that efforts to make the corporate objectives known to general employees without exception through every possible means are essential.

[3] Marketing

The member of the team in charge of marketing explained strategies, sales people management, and user management

2) Priority guidance items and improvement items

[1] Smooth operation of management of its own stock farm

Measures against pollution, including livestock feed treatment, wastewater treatment, and odor prevention. As long as the company-owned stock farm is operated, effective compound livestock feed should be used to achieve the efficiency. In addition, pollution control measures must be taken not to cause environmental disruption of the surroundings.

[2] Measures to solve the imbalance between confectionery and dairy plants in terms of salary and personnel affairs

It is unnatural that there are differences in labor conditions and salaries even in the same company. Improvement measures must be taken as soon as possible, otherwise reliance between employees will be lost more and more, and employees' suspicion of the company will grow serious.

[3] Reviewing of the contract system of two plants

This is one of the improvement measures for Paragraph [2] above. It is urgently required for the responsible personnel of the two plants to talk about and to equalize labor conditions

[4] Implementation of employee management system by objectives and measures for improving of employees' awareness of solidarity

The management system by objectives, which is practiced in Japan, is explained to the management and it is emphasized that efforts to enable the employees to have awareness of solidarity are important. In the second field study, the team held a seminar to about 50 people including executives and middle managers on "Guide lines for manager activities." As described before, regarding the matter, the text on the home page of Department of SMEs was inserted into "Examples of management diagnosis and guidance N0-13."

[5] Education for reinforcing hygienic control in handling foods and awareness of enhancing the quality

The food is eaten and is easily accessible to anyone. Consequently, thoroughgoing hygienic control must be implemented and quality-first products must be supplied. It must repeatedly be educated that even one scandal such as food poisoning might become fatal to the company (the recent case of a Japanese dairy manufacturer is referred). The management must change their recognition of the importance of hygienic control.

[6] Measures for excess personnel and retired personnel

There are many state-owned companies and state-owned turned private companies who rack their brains about manpower management. They have their own requests to the state and the government, but first of all, they need to formulate measures that must be taken by their own companies and put them into practice. It is explained that in Japan, this kind of excessively favorable measure is not taken.

[7] Promotion of effective utilization of the Internet

There is still plenty of room for expanding the use of computers. SEs must be employed, made to understand the objectives of the company, and utilized for renovation of business

[8] Measures for purchasing material milk at low cost and stockpiling milk.

This is involved with the operating funds borrowing problem, but positive efforts must be made to borrow necessary funds for corporate development and growth.

Of those above, Items [2], [3], [4], [5], [7] are short-term themes and the remainder long-term themes.

[Summary and additional suggestions]

At the time of this field study, the president was staying in Japan. After he returned to China, we made discussions with the president in the latter part of the field study. As is the case with the previous field study, three vice presidents, managers of departments, and the personnel in charge sincerely accepted and quickly understood our suggestions, and took quick actions. The suggested to the company that plant facilities are improved if the following measures are taken.

The following seven measures for developing the company were suggested, provided that the items of 1) to 4) will be unnecessary if powdered milk is not manufactured in the future.

- 1) In the powdered milk manufacturing plant, reexamination of the layout of a place for changing working uniforms (white-colored and blue-colored), a passage after changing clothes, and a mirror for checking if clothes are properly worn

The layout must be arranged so that the check can be performed after changing clothes

- 2) Attachment of curtain blinds to the windows on the side of the passage for articles to prevent powdered milk (oil and fat-containing product) from temperature rise for safety storage

Windows on the side of the passage for persons are provided with curtains.

- 3) In the third floor of the plant, correction of puddles and peeling of tiles on the floor, and

stickiness on the upper part of the dissolving tank

Thorough washing with water after use to prevent bacteria and molds from growing

- 4) Proper treatment of powdered-milk like-matter in bags placed in the corner of the plant and indicated as for industrial use

Relocate or, if not used, dispose of the matter. Do not put the matter misidentified as foods.

- 5) In the improved hand-washing room, installment of dryers for wet hands, or paper towels and alcohol sprays
- 6) Removal of puddles in the surroundings of the intake for raw milk and thorough cleaning for insect and bacteria prevention
- 7) Making the wearing of gloves compulsory for workers handling final-stage products, such as workers engaged in putting the products into metal boxes, inserting jam or cream between biscuits.

The team submitted samples of inexpensive vinyl gloves.

- 8) Refer to “Examples of diagnosis and guidance No.-13.”

(2) F005 Company

- 1) Requirements from the company

- [1] Production machines and equipment

It is difficult to make a large-scale refurbishing of present machines and equipment due to shortage of funds. However, the machines and equipment are able to satisfactorily function through good maintenance.

- [2] The problem is that the right personnel for maintenance job are not enough.

- [3] Catalogues of Japanese *tofu*- and soybean-processed-product making machines and wastewater treatment will be submitted when the team visits the company next time.

- [4] Management control, particularly, quality and hygiene control

Executives are thoroughly familiar with laws and regulations related to quality and hygiene control. Efforts are made to attract the attention of general employees by affixing them on the walls.

- [5] In the future, further efforts are required to make employees thoroughly recognize the significance of engaging in food processing

- [6] Development of new products

The objective of development of new products is to develop tissue-like protein product similar to meat tissue, using soybean protein and to increase profits of the company. The

catalogues of extruders made in Japan, and product samples, if obtained, will be submitted.

[7] Requests to the government

The company has requests to the municipal government because of special conditions of being a state-owned company, particularly, for imbalance of taxation, treatment of retired people, and other problems. With policy-making experts in the presence, the requests were examined.

2) Priority guidance items and improvement items

[1] Thoroughgoing retraining of employees.

The contents are nearly same as those stated in the Item [1] of Paragraph 1). Understandable regulations should be newly prepared, and efforts should be made to repeatedly explain the contents to all the employees at a morning assembly and other occasions in the workshop. Emphasize that the quality comes first in food manufacturing.

[2] Hygiene control

Removal of black molds formed on the walls

Improvement of floor drainage

[3] To get rid of confusion after the abolition of the planned economy, making the management understand the essence of the market economy.

Regarding this issue, the team held a seminar for training executives and middle managers in the second visit. Refer to "Examples of diagnosis and guidance No.-2 "

[4] Fostering of marketing personnel.

[5] Actions to increase market share.

[6] Development of new products

[7] Development of bean-protein product

Corresponding to the Item [3] of Paragraph 1), the team submitted catalogues and some product samples. Refer to "Examples of diagnosis and guidance No.-3."

Item [5] is a medium-term theme, and all others are short-term themes, which must be implemented immediately.

[Summary and additional requirements]

The company took appropriate actions against the previously pointed-out items, and proceeds with the actions as scheduled. After the seminar, the president told to the attendants "There are no new thing in the contents of today's lecture, and no difficulty in understanding the contents. You must probably have heard all the contents before. They can be realized depending on your efforts. The important thing for you is how to put them into practice and how to yield practical results "

Tofu manufacturing started in the small room provided with hygiene control and aluminum sashes. The company has begun to take measures against black molds on the ceilings and walls. It is necessary to thoroughly practice the measures and to enhance employees' awareness of hygiene

control and to take much care of apparatus handled.

(3) F011 Company

1) Requirements from the company

Requirements from the company include the following:

[1] Market developing method.

With respect to this, a marketing expert visited the company and made diagnosis and guidance.

[2] Method for building up a strong sales organization

- Method for improving the situation that the present sales route is single and fixed

With respect to this subject, the company presently has a connection with one of the biggest trading firms in Japan, and this connection must not be ignored. Even if the present personnel in charge in the trading firm should be retired, the trading firm is certain to assign an alternative. Therefore, the team suggested that the company should not cut this route.

- Method for shortening the period of products in stock in order to reduce its influence on operating funds.

Suggestions were made on this subject after reviewing the financial statements of the company.

- Method for reducing the number of middlemen and routes in sales of products

Presently, exported products are shipped through a trading company.

In consideration of the present relationship between the company and the Japanese trading firm with which the company has business relations, it is advisable not to hastily simplify the routes or change to another routes

Sorting work presently conducted in another plant should be done in this plant from viewpoints of both convenience and hygiene.

[3] Method for reducing influences caused by price fluctuation of materials

Because there might be seasonal factors (yields, fluctuation of production) in material bamboo shoots, the subject will be examined after having investigated material growth conditions by year, purchase time and price in detail.

2) Priority guidance items and improvement items

Of the above items, [1], [2] are short-term themes and [3], [4], [5] are long-term themes. Additional suggestions for improvement are as follows.

[1] Placement of samples of standard products (on which shape, width, length, etc. are indicated) in the manufacturing shop.

[2] Clear separation of the storage spaces for materials and for products in the warehouse

The above two items had completely been conducted by the time of the second field study, as

described in “Examples of diagnosis and guidance No.-8.”

Because exactly the same type of cans is used for materials and products, it is desirable to place mobile-type partitions (parting plates) to separate the two storage spaces.

- [3] Measures for raising exports --> Finding new importers other than present customers in Japan. However, as described above, the priority must be given to the present route, and exports should be raised while maintaining the present route. For further detail, refer to “Examples of diagnosis and guidance No.-20.”

For domestic sales, measures for promoting the sales of the products unique to the company should be worked out. To achieve this, the company should aim at manufacturing and selling pickled bamboo shoots and cooked foods for everyday dish in addition to present cut products. In the meantime, it is essential to extensively advertise bamboo shoot dishes. It would be a good method for the company to positively sell their products on trial to cities overseas with resident Chinese throughout the world (marketing measures).

- [4] Calculation of manufacturing costs and transportation expenses required for the primary treatment of materials in the Fuchien plant and for the secondary treatment at this plant.

Taking actions to reduce waste as much as possible.

- [5] Subdivision of products into 2.5-kg packages at this plant

There are no problems with this work, but the production should be conducted after deciding sales route.

In addition to this, the team introduced daily dish manufacturers in Japan and submitted books and pamphlets related to various kinds of bamboo shoots, and to recipes. If the company staffs are able to come to Japan, a member of the team in charge of general affairs will arrange the visit to a potential manufacturer.

Others

For companies other than model companies, the team submitted to a raised confectionery manufacturing company packaged products of similar confectionery made in Japan, and to a baby food manufacturing company catalogues of an infant food maker in Japan, and copies of related references and magazines. The team hopes the companies to make much use of them for their company development.

The team submitted a pamphlet of “One Village, One Article” campaign.

[Overall impression of food processing industry in China based on the results of investigation, diagnosis and guidance]

The three model companies took appropriate actions for the first suggestions for improvement made by the team, through investing a considerable amount of money. Generally speaking, in

confectionery plants, priority should be placed on “Quality First” and “Hygiene First,” vital points for confectionery plants. The team explained the following. If products are hygienic and have good quality, an image of products for consumers and the reputation of the company are improved, and, as a result, sales increase. In food-related industries, if top and middle management, and employees make a concerted effort to improve business activities, an image of a company is improved, awareness of solidarity increases among employees, and the company will surely be on a development path

The Chinese side theoretically realizes measures for improvement. The team stressed that if the measures were put into practice to improve present conditions, rosy future would await the company

The team personally checked the degree of worry of the presidents of the three model companies. From the results of checklists, the presidents were assessed as follows: Two presidents aim to improve quality by 50%, through recruiting best-qualified staff from all the plants. The other president aims to improve quality by 30%, through solving picked-up problems. (Checklist: from Takao Anpu “Quality control and risk management “)

[Suggestions for promotion of SMEs based on the results of management diagnosis]

1) Establishment of a governmental technical center

One of the model companies established a technical center on a request from the city government. The government assists a company to establish a technical center, only once at first. The center is operated under the collaboration of industry, academia and government. The center can be utilized by competitors. However, the center is located in the premise of a private company. There is a problem of trade secrets and industrial property.

On the other hand, members of the policy making team want that a technical center be established by a public institution (city government), and introduction and training of technology be given to company employees. In Japan, there are industrial laboratories in most of the urban and rural prefectures. Each laboratory assists local produce processing industries in its each region in terms of technology and funds.

In respect of whether a technical center is a private or public institution, It is desirable to operate the center clearly defining its role, to provide the center with expensive machines and equipment, and to make every qualified person from various industries utilize them for pay.

2) Control of food processing industry based on standard similar to JAS (Japanese Agricultural Standards)

Introducing such standard as Japan, the governmental institution concerned affixes a certificate stamp to the certified product or admits affixing the specified mark, to separate from untested or defective products. This system leads to an assessment system in cultivation and processing of organically grown vegetables. This system allows fostering of quality-product manufacturing

companies. The team hopes this system will be introduced into China.

3) Introduction of a consultant engineer system

In Japan, there is a consultant system consisting of 20 technical departments. The Ministry of Education, Culture, Sports, Science and Technology controls the system. At present, there are approximately 40 thousand qualified persons. Japan Consulting Engineers Association conducts competency testing and functions as an employment agent. It is desirable for China to introduce a consulting engineer system to supply competent engineers who contribute to technical development in various fields including food-processing industry. A person qualified as a consulting engineer can contribute to the society and industries utilizing his technical experience, knowledge, and skills. The team recommends that the Chinese government examine the consultant engineer system in Japan, introduce such a system and promote it.

Suggestions for future improvement are described in the book of "Examples of diagnosis and guidance," together with photographs. Examples related to food processing are described in No. 1, 2, 3, 8, 13, and 20 of the book.

7.6 Diagnosis and guidance for spinning industry

7.6.1 Present condition of investigated enterprises

(1) Outline

In "Preliminary investigation report" which was carried out before the investigation of this time, the explanation stated that Chinese production of spinning industry holds one sixth of the amount of whole world production, especially the suburbs of Hangzhou is a huge accumulation area of spinning industries in China, and yet has a superiority for textile and spinning industry. Following table is attached on page 71 of the report.

Table 7.6.1 Characteristics of the type and scale of the industries, which have annual production over 5 million Yuan in the whole city

	Total of 8 industries	Spinning industry	Ratio(%)
Industrial product (Mil Yuan)	6,309,390	1,454,841	23.0
Number of enterprises	1,161	273	23.5
Number of employees	477,300	119,877	25.1

We expected that the spinning industry had the highest ratio in Hangzhou city even nowadays, but as you see in above table, the number of investigated spinning enterprises were only nine. However, after discussion with the minor enterprises department of Hangzhou city economic committee, we selected 5 spinning industries (1.8%) and other 2 industries, and consequently visited and investigated these 7 industries. We shall state about the state of spinning industries investigated through 7 enterprises as follows. The table of 7 enterprises is shown in 7.6.2.

Table 7.6.2 Table of visited enterprises

No of enterprise	Main product	Form of enterprise	Scale	Annual product in 1999 (Thousand Yuan)	Number of staff in Oct. 2000
T-001	Sewing of high class women cloths	Private	Medium	106,520	667
T-002	Spinning of cotton / Chemo-synthesis yarn, yarn dyeing, knitting	State	Medium	53,170	380
T-003	19 enterprises for cotton product, non-weaving cloth, dyeing	Township enterprises (Gathering)	Big	200,000	2,000
T-004	Wool/chemo-synthesis yarn, cross-knitting product	Private	Medium	16,400	310
T-005	Cross-knitting machine	State	Medium	13,350	450
T-006	Materials for covered wire	Private	Medium	103,230	170
T-007	Cotton yarn	Private	Medium	79,000	480

(Note) Classification of scales is as follows

Big scale enterprise capital is over 50mil. Yuan, and employees are over 500.

Medium scale enterprise Middle of big/small

Small scale enterprise capital is less than 5mil Yuan, or employees are less than 100.

Meanwhile, these 7 enterprises could be classified as shown on the table 7.6-T3 when they are classified from the standpoints of managing form and its change.

Table 7.6.3 Managing form and its change of the enterprises visited

	Managing form		Number of enterprises	Scale		
	Changing process			Big	Medium	Small
State	Private (Corporation)	Just before	1		T-005	
		Scheduled in 1 year later	1		T-002	
Town and township enterprise	An assembly of 19 enterprises (Two of them are rising now)		1	T-003		
Private enterprise	M&A of a bankrupted local enterprise	1990	1		T-004	
		1997	1		T-007	
	Private		1		T-001	
			1		T-006	
Total			7	1	6	—

(2) Small- and medium-size enterprises in the spinning industry

The present condition of 7 small- and medium-size enterprises in spinning industry field based on the visiting investigation and the investigation by questionnaire are as follows.

1) Management policy

As a matter of course, there can be seen high-spirited atmosphere, and positive activities of enterprises are put into practice in the factories of the enterprises in which the top management sets forth clear managing plans and managing strategy.

Activity plans such as "Quality first" "Safety first" "Compatibility with market" and "Improvement of technology and developing ability for new product" are raised everywhere and the strong will for changing from intentional economy to market economy could be felt at the whole places. Some enterprises are managing multiple operation of business in the independent profit system of each business unit, however there can be seen that some managing activities are carried out in unreasonable environment. Meanwhile, some enterprises are bound in "Negative legacy" from the past time, consequently if its effort for success can be observed, its managing base is weak and it has to meet a severe fight in the market.

2) Activity as an organized enterprise

In some enterprise, the enterprises have already been organized but its responsible sphere is

not clear, consequently its original function is not yet exhibited. Many cases can be observed in which the communication or understanding not only in the relating sections but between other business parts also are imperfect, consequently the solution of problems concerning to business cannot be realized.

Especially, the problem concerning to claims should be treated seriously with customer as a problem of company. But in some cases, there can be seen an inclination that a responsible person forgives the problem by having negotiation with customer and repair it. It shall be necessary to construct a problem-treating organization in enterprise.

“Claim” is also a big chance to gain “Customer’s trust”. When the staffs of sales and manufacture have a good cooperation, plan and do quickly a preventing method for re-occurring of claim, then they win “Customer’s trust” and the activity can connect with the expansion of sales

An enterprise organizes a technology development team and carries out “a new product development] responding to customer’s demand and makes a severe process control, and consequently gains “Customer’s trust] by supplying the product before several days of the time for delivery without fail. This enterprise is proud of the results that can bring an initiative sale by sales-side

3) Expansion of sales and personnel scale

When we pick up only 4 enterprises of spinning industry and observe their annual sales, their sales are increasing every year since 1997, and the increasing rate of 1999 compared to the former year is 20.3%, and 30.7% in comparing to 2 years before. Equipment reinforcement of T-007 made a great contribution to these results.

All of the enterprises show good situation, therefore their sales shall cross over that of 1999. Observing the personnel scale, personnel of 4 enterprises in 1997 were 1,579, and that in 1999 were 1,832, therefore 258 persons have increased. Low increasing ratio of employees compared to high increasing ratio of sales (turnout) shows the fact that introduction of rationalization of production equipment was very effective. Further, increasing ratio of sales, when we observe the situation of 7 enterprises during 2-years span, can be recognized as 45.2% (contribution of T-006, T-007 were great), despite of the fact that increasing ratio of personnel remains at 0.8% (This shows powerful influence of rationalization equipment and equipment industry on the rationalization) On the other hand, the enterprises with unstable managing base and the ones that have just changed their managing form (from state enterprise to private company) are confronted with severe reality.

4) Expansion plan of enterprises

6 enterprises out of 7 have equipment renewal plan or factory expansion plan. One enterprise is now promoting renewal of a part of the equipment and 3 enterprises are putting forward the expansion of factory equipment and it will be completed in few months. An enterprise is preparing to start two new businesses, and an enterprise has a plan to build a new factory and preparing to obtain a land for the new factory. The rest one enterprise was built on the land which was designated to the space for the city plan of Hangzhou, then it has to remove itself in 2~3years, so it is now studying the total rationalization of the enterprise to take advantage of the chance. Further, two out of the 6 enterprises, have plans to build factories of greater scale, which have combined equipment (from spinning to sewing). Textile industry is fashion industry, therefore the lifecycle of its products has been becoming extremely short since the latter half of 1980. This situation is making the risks of planning and manufacturing of the products much bigger. For the designing of future factory, the selection of proper equipment/proper scale for manufacturing the product that have high requirement from market shall be a great subject for the surviving of enterprises. It shall be recommended that enterprise should carefully investigate the trend of market and customers and plan the equipment examining the shift from the mass-production of minor kind to the less-production of major kind.

There are some countries/enterprises that construct large-scale factories even now (e.g. the scale of 100,000 spindles), however we have observed many enterprises that the rate of operation is decreasing by geometrical progression by imperfect factory control after operation of several years.

5) Sales activity and route of sales

Production methods of enterprises were the production by order in all of the 7 enterprises. Every enterprise has many established clientele, therefore the sales and manufacturing activities are carried out on stable quantities. But in case of production by order, requirement from customer used to be accepted preferentially, and consequently there could happen disturbances under certain circumstances and it could cause the happening of troubles (quality, delivery, etc.)

3 enterprises tries to apply practically own sales shops and agents in order to increase own sales ratio.

For the agent staff, a system of contracted member is adopted and wages assessment is made by sales results (amount of sales, collection ratio of bills, etc.), and consequently the raise of sales will is attempted.

An enterprise introduced this system for own sales position since Jan. '01, and prepared a manufacturing plan mainly led by sales staff since April, and systematized a enterprise managing plan (sales, finance, investment, etc.) and consequently intends to realize smooth determination of director's will and smooth production activity.

Meanwhile, joint ventures with foreign capital intensify the connection with contractors, and try to collect information by using Internet, and always grasp the market trend and make the development for new products, and supply them to the contractors

We had an impression that our enterprises finally began to move for laying the foundation from intentional economy to market economy.

6) Development of new products

In 5 enterprises of spinning industry, 4 enterprises have own developing position for new products. Each enterprise is different in type of industry each other, but every enterprise is developing own product applied with new material, or developing the product responding to the customers. Almost all developments are made by his own technology in order to hold his Know-How.

However, in new business (Non-weaving cloth) enterprises have joint research with college, or investigate joining group of technology, and try and obtain to develop new technology. Some enterprises are trying to improve the level of their technology and development and adopting and educating the people who graduated college or university. For instance, they entrust managing of the newest factory to the staffs having about two years experience after their graduation from colleges, and educating them the philosophy and practice by on the OJT training.

CAD is put to practical use for the design and preparing paper patterns in sewing enterprise and also put to the design in manufacturer of machines.

Enterprises that obtained attestation of ISO 9000 are 3: (one of them obtained two categories, and now applying one category), one enterprise is now applying.

7) Processing technology and equipment for it

Outline of the processing technology and equipment of visited 7 enterprises are as follows. Details shall be explained in 7 6.2 Diagnosis and guidance.

- a) Sewing enterprise. the main raw material is silk and they sew only high class cloths for women, and they prepare the manufacturing system from designing to completing of the lot-production of various kind-small quantity (over 6000 kinds per year) from inner to outer wears. Silk is a difficult material to sew, but they have a high level of sewing technology.

Their sewing equipment is in a standard level, the sewing machines are introduced from Japan, other embroidery machine and other attaching equipment were introduced from USA and Italy.

And care for the working environment is fully prepared.

- b) Spinning industry: Materials are different in every enterprise. For example ① two enterprises use spinning yarn of 100% cotton. ② One enterprise uses 100% cotton and mixed spinning yarn of cotton/synthetic yarn (the raw material of this yarn is dyed and spun in mixing process, dyed during yarn state). ③ One enterprise uses mixing yarn of wool/synthetic (same as ②). 3 in 4 enterprises have dyeing factory, knitting factory (cross-knitting, ring-knitting, lengthwise-knitting) and weaving factory simultaneously.

One enterprise out of ① has four years history since its inauguration. It renewed old equipment and introduced an innovative spinning-equipment, and now establishing new innovative spinning equipment. And as a result, it is abruptly expanding the scale of enterprise now, but its level for factory management is kept seemingly. ② is excellent in ability of technology and development, therefore it produces high quality yarn and is obtaining high appraisal from customers.

③ has changed its spinning equipment from that for cotton/hemp to wool spinning, but its product has been intended to supply to niche market, therefore it is very severe in profit. For factory managing, it adopted the independent profit system for 6 sections, consequently we had an impression that the doctrine of supreme manufacturing brings about unfavorable results such as low efficiency.

- c) Cross-weaving machine: This business group is now placed in severe circumstances caused by low quantity of product such as 20,000 set per month. The main product is manual cross-weaving machine, and its mean sale is 700 set per month. By the policy of inside manufacturing derived from a distinctive policy of state enterprise, there is much futility from material to product. Other than complete automatic shaving for needle grave of knitting machine base, all processes are produced by manual work using normal machine. The technology maintenance has relied on worker's experience during long time, but by recent rationalization of the change of enterprise's form, manufacturing activity is made by 450 to 180 members.

- d) Material for covered wire: Organization for test and inspection/development are enriched and the development and technology concerning to high-level insulation material are introduced, and consequently improvement of factory and construction of new factory are made for each product, thus the positive technical improvement is progressing.

Staff education for each class is made, and lecture for problems other than technology is prepared and improvement of men's ability is progressed.

8) Materials/Procurement of parts

- a) Yarn materials: Almost all natural yarns (cotton, silk, hemp, wool, etc.) are procured in country

except special materials). Chemical /synthetic yarns are recently changed to the domestic procurement

However, in both case, the procured amount are controlled by their quality and market price, therefore the selective procurement of adequate materials for own product become possible.

b) Chemicals: Almost all dyestuffs, subsidiary chemicals have been imported, but their situations are changing to be able to change to homemade products.

c) Parts. Procurement of parts for homemade equipment has no problem except for special parts. For imported equipment, homemade parts are already prepared, but it depends on the procurement reflecting the cost and reliability such as qualities of materials and accuracy

9) Safety control

For enterprises "Safety control" is the most important theme for enterprises. The enterprise that carrying out the basic items of factory control such as "5S activity. arrangement, put in order, cleaning, cleanliness, discipline" are producing good results. In the enterprises that don't keep the regularity/rule, morale of employee is low and high-spirited activities can't be seen. We saw some existing section that have wrong environment of working place, because of resource investment to new business and consequently being sacrificed by the fact, and we saw some missing of usefulness in factory because of not changing from old system, and we saw many stagnating parts in the manufacturing process, working surrounded by unnecessary thing, eating and drinking during working time. These situations are big factors to cause large troubles. It is absolutely necessary that the establishment of environment for working space where workers can work safely without any trouble based on responsibility of manager. We strongly wish the realizing of management of "Safety first".

7. 6. 2 Diagnosis and guidance for spinning industry

On the occasion of diagnosis and guidance for the promotion plan of small and medium enterprises in Hangzhou city, we made, as stated before, diagnosis and guidance to 7 enterprises (spinning: 5, machine. 1, chemical: 1). We shall state the results as follows

T001: Sewing industry (High-class women clothes mainly of silk)

(1) The present condition:

- 1) Concentrating to the manufacturing of silk that is difficult to deal with, and sewing high-class clothes for women (from inner to outer wear).

- 2) Production by order mainly from USA and Italy. They have established various kind small quantity producing system that can produce over 6000 set per year, and gained customer's trust owing to their management to make much of quality.
- 3) They manage quality and process (delivery time) (from the order for raw material to supplementary material/product) completely.

They got the certification of ISO9002 in '99

- 4) Effort for the keeping and progressing of technology is observed. When they employ new person, they adopt the person of experience about sewing temporarily, and judge their ability during the trial term of 1 month, and after passing the judgment the person is employed formerly. And after that, he is instructed 3 months by OJT. Further, as a link in a chain of keeping technical ability, regarding the fixing measures as serious, the measures for salary, public welfare, improvement of environment are introduced
- 5) "5S activity" is practiced in and out of factory. Managing condition of raw material/subsidiary materials and process are perfect, corresponding to the textbook
- 6) Simplification of organization (integration of financial and labor section) was put in operation. Expansion plan of enterprise is being promoted, and shortage of talented man (for managing section and sales in export) is coming into question.
- 7) Computers are utilized widely in all of the enterprise's activity, and used in gathering much information

(2) Guidance. No pertinent data.

T002: Spinning (Mixed spinning yarn of mainly cotton and chemical combination yarn, yarn dyeing, knit product of ring knitting)

(1) The present condition

- 1) They are manufacturing special yarn and knitted cloth which are concentrated to mixed spinning yarn mainly composed from cotton and the rest from chemical combination (material dyeing, yarn dyeing)
- 2) Owing to the strong managing plan/managing strategy, product development based on an insight for market, product development responding to customer's request and complete process control (strict keep of delivery time), are filling customer's satisfaction and obtaining customer's trust. Further, it is said that the enterprise can bring profit from "Advance payment" at the time of order receiving.

- 3) They are progressing maintenance and improvement of technology, and take precedence in employment for local people (90%) in order to improve the fixing ratio. And consideration money system is arranged in salary payment.
- 4) The equipment for spinning process was renewed in '96, but renewing of winder in finishing process delays. The introducing of new winder will contribute to the improvement of quality and working efficiency of next process.
- 5) 40 set of full automatic ring knitting machines (with electronic jack-card) are being installed. Further, they are planning construction of the factories of spinning, yarn dyeing, ring knitting machine, sewing.
- 6) They are planning to extend to the foreign market and groping to fix an affiliated concern.

(2) Guidance:

- 1) Renewal of winders will contribute not only to raise customer's degree of satisfaction but also to contribute to improve producing efficiency/quality control of their ring-weaving machine.
- 2) Their task in the future will be the cultivation of successors and adoption of enterprises' organization suitable to scale and adopting men of ability.

T003: An assembled organization of 19 enterprises such as cotton spinning, cloth weaving, synthetic yarn knitting, print/dyeing, non-weaving cloth, electric wire, etc.

(1) The present condition:

- 1) This organization manages 19 enterprises relating to yarn or other types of industries, and now preparing more 2 enterprises. Each enterprise is managed and employed under the independent profit system, and its achievements are confirmed by two times audit per year.
- 2) This time, we investigated only non-weaving (2 lines), synthetic yarn knitting (4 set), dyeing factory (yarn, cloth dyeing) The one line of non-weaving lines is
Equipment jointed with Taiwan, and it produces base cloth for artificial leather, and it becomes a leading product of this enterprise
- 3) The environment of synthetic yarn knitting is bad, so man can't say it a factory (lights are dark and arrangement is wrong, therefore it is necessary to improve its environment.
- 4) It is necessary for dyeing factory that many improvement should be taken for managing of machining equipment and environment of working place (floor is not good) including measures for safety

- 5) Electric wire factory got certification of ISO9002 in '97, adhesive factory got certification of ISO9001 in '99, non-weaving cloth factory is now applying the certification of ISO.
- 6) To progress the development for new technology and product, a non-weaving cloth laboratory was established with Shanghai University.
- 7) For new business, 2 business are preparing, such as ① "Raising fresh-water fish in a little water" as a measure for western district, and ② "Development of feed for environmental conservation".

(2) Guidance:

- 1) We began to talk about above 3) and 4) of environmental improvement, but they didn't show interest on them. We had an impression that they want to utilize their resource to new business, or there is too big load on the existing business now.
- 2) They invested 10 million Yuan to the equipment for draining and make pre-management by themselves. As a simple inspection for water quality, a pond is added to the drain groove, and put goldfishes into the pond, so they can see the draining condition through the condition of goldfish. They showed strong interest on that subject.

T004: Mixed spun yarn of wool/synthetic (acrylic), Filament yarn, Cross-weaving product

(1) The present condition:

- 1) Products are concentrated to low price markets such as EU (Holland, Italy) and Russia.
- 2) Debt of bankrupted company, since '90, burden of annual payment of 2.3 mil. Yuan become fetters of enterprise's activity, consequently they worry about capital managing
- 3) This factory is managing 6 department by a system of "Independent profit system: piece wages". Every department is operated based on "supreme producing efficiency", consequently there are several problems for managing controls (quality, equipment, environment, safety)

(2) Guidance.

- 1) It is necessary that the minimum necessary working standards (quality, operation, equipment) are enacted and carried out as a production spot. Especially, the introduction of "5S activity: arrangement, alignment, cleaning, cleanliness, discipline" is required.
Quality control: Not only standards, but also kinds and condition of inspection tools are

Very poor.

Operation control: Observance of working standards is result in progressing of working efficiency and safety than prolongation of working time.

Equipment control. equipment control contributes to make work-efficiency, work- quality and safety of work - shop progress

T006: Manufacturing the cover material of electric wire

(1) The present condition

- 1) Managing plan is made clear “Good quality”, “Proper price with competitive force”, “Market share No.1”
This enterprise now supplies 70~90% of material for 30 enterprises of big and medium electric wire manufacturer in 5,000 traders
- 2) By observing the policies of government (e.g. electrification plan), as a managing strategy, production and manufacture plan and equipment plan shall be progressed.
As new equipment, for PVC insulation material (10,000 ton/year), for medium and high voltage insulation material for new product (3,500 ton/year) are constructed. And now equipment for material for silicon (5,000 ton/year) is planned for increasing (operation will begin at June '01).
- 3) We took notice of financial management accompanied with expansion of enterprise's scale and the viewpoint of business strategy, and accepting the guidance of requirement from enterprise, we guided systemization and marketing of financial management.
- 4) Manufacturing are made by order, consequently the change of manufacturing plan (changing of lot) by customer's request occurs frequently. As countermeasures for loss of production and unstable quality, the cooperation between business and manufacturing section is necessary.
- 5) Appointment of men of ability to new business and test/research section Education and training for each class of middle manager and upper are made. Further the certification of ISO9002 was obtained in '97.

(2) Guidance.

- 1) According to the upper item 3), a guidance meeting by marketing group was hold (detailed report are at the end of marketing)
 - a) Confronted with affiliation to WTO, managing strategy shall be inspected again. Outer and inner managing condition shall be estimated coolly and after reaffirmation of own competing and dominant position, confirmation and review shall be necessary.

Reconstruct “Systematization of financial managing system” For total managing judgment of manager, the financial data are fundamental. “Systemization of financial managing system” is a device in which the information of all section in enterprise gather, therefore we guided that it is most important to construct the system in this enterprise.

An enterprise managing system for sales, financials and investment based on the manufacturing plan prepared mainly by business section is completed and carried out from April '01.

7.6.3 Diagnosis and guidance for model enterprises

As stated above, total diagnosed enterprises were 7 factories (spinning industry: 5, mechanical /electrical industry: 1, chemical industry: 1). For model industry, considering that the selection of model enterprise should not adhere to spinning industry and the lateral development to the enterprise standing in similar condition shall be acceptable, we selected following two enterprises.

T007: Cotton yarn spinning factory (Rapid rationalization and expansion is progressing).

T005: Manufacture of cross weaving machine (standing at the changing point from state enterprise to a company just now)

We shall report the present condition of both factory and contents of guidance as follows

T007

(1) The present condition

1) History of enterprise:

The antecedent of this enterprise was founded as a state enterprise of cotton and hemp yarn spinning in 1987 and began its operation in '89 on the scale of 35,000 spins. After 10 years from its start, its operating condition decreased to 15,000 spins and bankrupted.

At that time, present manager bought the enterprise. And he improved the factory to that of 12,000 spins and began to operate it in '97. In '98, he increased 6,000 spins. In '99 he introduced innovative air precise spinning equipment (open-end yarn) of 960 spins, and began its operation in April '00. Further, fresh spinning equipment of 42,000 spins is now increasing, and its beginning of operation is planned in April '01.

a) Product Manufactured by order, raw yarns are for jeans and corduroy.

Card yarn: 17's and 21's about 500ton/month

OE yarn 7's and 16's about 380ton/month

b) Destination of delivery 99% is Jiangsu Province, the rest is Shanghai and Zhejiang

c) Investment amount for equipment since '99 is 90 ml Yuan (Financial debt 40%, Own capital 60%)

2) The present condition:

a) Owner-Manager had merchandised cotton in Wulumuqi, and started to advance to spinning business since '97

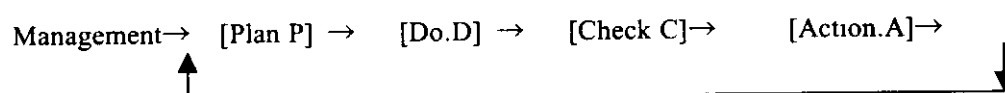
① Concept of managing: “Big is Strong” Spinning business is a world of scale, small enterprise can't make a profit. And the manager is increasing equipment rapidly. Managing policy “Values accepted by market are technology and quality”. He intends to spin 60's, 80's cotton yarn in future which have high value added.

② The scale of spinning equipment were 100 or 150 thousand spins in a factory in the past time or in the developing country, but nowadays normal scale is decreasing to 50 to 60spins. In the spinning industry, product is manufactured by assembling of parts managing technology of every process and machines. Therefore big factory can manufacture the product at the new condition of 1~2years, but when management of equipment is imperfect then it produce a lot of rejected articles. In the time of tasting high class of product, manufacturing style changes from mass-production of few kinds to less-production of many kinds.

China yet has a market that can supply thick yarn, but at the time of affiliation to WTO there could occur a change in market. We believe it will be an urgent matter of the manager of Chinese spinning industry to pay the attention to the market trend, to establish an organization with mobility and managing organization in proportion to the scale.

b) Process control (manufacturing, equipment, quality)

Standard of process control (manufacturing, equipment, quality) are enacted and put up on the wall, but not in the state of practical use



All of the staff turn the above circle smoothly and advance their work. But in the existing condition, every staff enters plan and actual results according to “self style” and keep it as an own record. These records are “public thing”, therefore the condition of factory management shall be understood by persons concerned.

c) Claim is the best information about own company. Contents of claim is

Ring yarn. Color and steps of textile

OE yarn: Unevenness of twist, admixtures (Broken pieces of leaf or etc)

Content of claim is different by process, so the countermeasure can be taken easily.

d) Improvement of carrying and transportation method (inside of factory, shipment) There are

“Futility” “Unreasonable motion” in transportation of half-finished well and article between workshops of factory So improvement of quality and labor-saving is necessary

e) Improvement of the way for packing up before shipment. (Quality, cost, labor-saving)

(2) Guidance.

1) Problem of the organization of enterprise, managing system)

With scale expansion of enterprise, we discussed about organization of enterprise in order to arrange managing system And prepared a plan of organization (plan).

The enterprise begins to intensify the sales section, and institutes NINPO other than JOSHU, so sales shops become 2. Meanwhile, they prepared 2 plans for managing part “Estimation standard for each section] and “Salary system .

2) Process control

a) Process control: Prepare the flowchart of product and secure the problem on process and improve it.

By above example, when man compare the cotton spinning process and OE spinning process, the later process has less processes and low yield rate. As a matter of course, they select a adequate material for “Spinning yarn”, but

①Is there no problem in characteristics of applied material?

②How is the emerging of waste in the process? (Occurring of yarn cutting or yarn breaking by wrong adjusting of machines.)

You should investigate these problems, confirm them and correct them in order to prevent reoccurring

Figure 7.6.1 Cotton yarn spinning process (Month production)

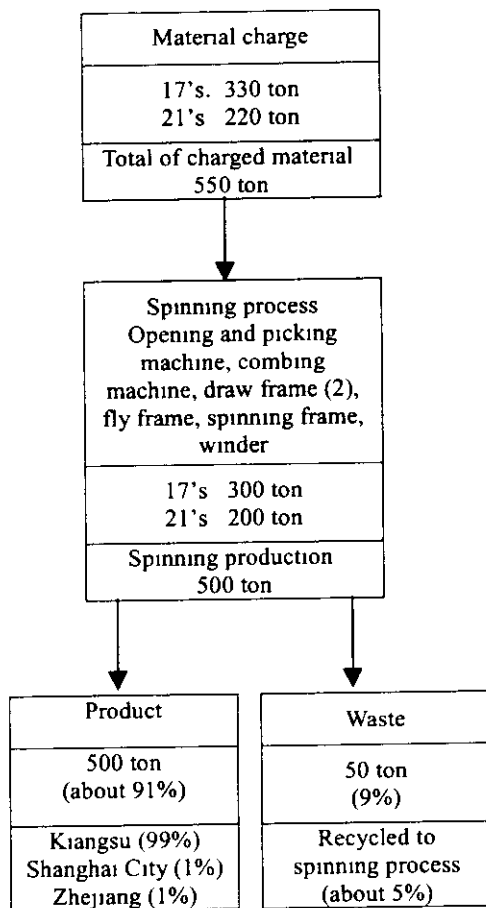
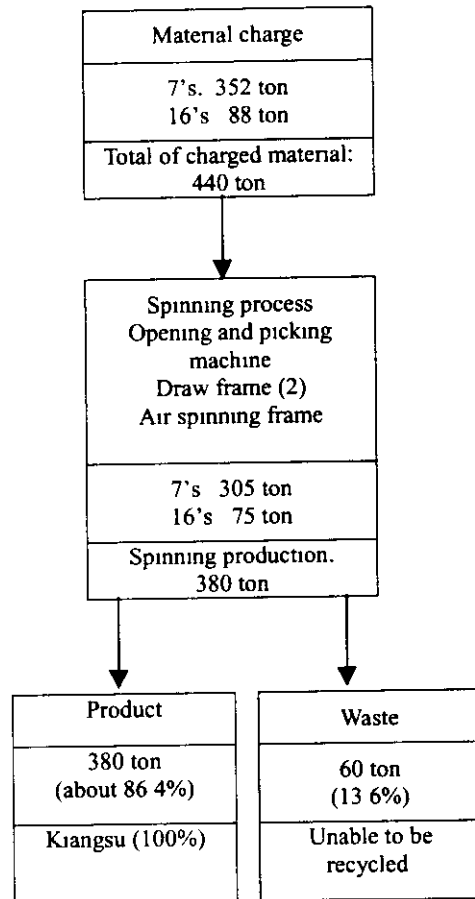


Figure 7.6.2 OE spinning process



Note) Confirm the yield rate of every lot "Yield (Efficiency of material) If you find out any disorder, investigate the problem (characteristics of the material, state of machine or waste in the process) and understand the cause of it and correct it

b) Management of production, equipment and quality are carried out according to the work standard, and all of the documents shall be stated plainly. These managing documents shall be able to be inspected at the fixed place, by anyone and whenever. It raises the volition of workers that they understand their own situation for reaching the target Further is important not by managing by point (time point) but by managing by line (change on time flow).

Namely, recorded data shall be prepared in “graph” or “table (comparing the target and actual results)” and put on the wall of each process, and by this way, all of the related person can realize the situation of “their own work”. The most important point of production and quality control is “A race with time” As soon as you recognize unusual matter, you shall tell it to the related workshop and restore it It is important for you to turn the “managing circle” quickly and smoothly.

Utilizing of notice board is put into operation in a part of adjustment section, and we saw a kind of working record of worker on it, but we felt a positive will from it.

c) Practical use of claim information

Claim is an important data to know the factory’s problem and request of customer and market. Almost all destinations are fixed now, and it is prescribed that some staffs shall visit the customer periodically (2 times per month) as aftercare, and in case of trouble, he shall visit the customer within 2 days after the occurring of trouble.

However, the document of these situation, treatment and exchange letters are not recorded and kept Cooperation between salesman and engineer shall be made completely. When a staff receive a claim, “Oral information of claim” should not accept hereafter but accept only by a document style of “Confirmation paper for claim situation” with “attached sample” This rule shall become a “Market claim preventing scheme” accompanied with the extension of market.

d) Simplification and improvement of transportation

On the spot of manufacturing, the transportation of article and product (including half-finished goods) are made frequently. Action of transport consists of “loading” “carrying / keeping” “unloading”. Especially in case of product (half-finished product), transportation frequently gives wrong influence (feathers, nap, unevenness of threads, threads-snap etc ,) to “quality” and there are much futility of works. Therefore we recommended them the practical application of tool or article aiming the transportation

① Practical use of carrying box and cart in process

Carrying box for vacant fine spinning bobbins (distinguished by color and type), for article and parts (distinguished by use)

Cart. for roving bobbins, roving for fine spinning, finishing cones and tees for re-winder, for other tools and fixtures,

Hand-lifter, Forklift: for carrying heavy article

Partially, they use “Colored parts storage box” and “Cart for product” are used practically

② Packing for product shipping

Nowadays, as a packing way for shipment, bag occupies the main stream. This packing injures "Quality of yarn". This packing way generates the problem of raising nap, cutting, and de-formation of "yarn" after the completion to product. Further, storage quantity of warehouse and carrying capacity of motor truck are limited by this packing. Packing way shall relate to the Chinese business custom, but facing the affiliation to WTO, we want to recommend you to apply carton box. Especially packing sent to the stable destination shall be changed to the container style (size is easy to handle) in which carton boxes are received, and consequently you should obtain high quality and cost-down (improvement of yield and efficiency).

e) Arrangement of the instrument for quality control

You intend to expand your customer not only domestic but foreign country in the near future. But your present equipment for quality test can't satisfy the quality requested by these customers (in testing ability and manage level). So we introduced you the testing equipment that you should equip at least.

f) Introduction of work improvement system and 5S activity

We recommended introduction of system and activity in order to improve the work volition. By the system, enterprise collect proposals in which any worker can explain "Problem in work and its improvement", and the proposals shall be estimated by managers and excellent proposals are commended. And the activity is a principle of factory management, it is called 5S "5S-activity arrangement, put in order, cleaning, cleanliness, discipline (custom)".

8) Reference Investigation of cotton for spinning (China Wulumuqi cotton and USA cotton)

Raw cotton for ring spinning was picked up as sample in mixes cotton beating room. And we asked its quality test to T-enterprise.

For measuring meter, HVI (High speed quality meter for cotton. Spinlab-900) was used.

Table 7.6.4 List of quality control test apparatus

No	Name of test apparatus	Quantity	Remarks (manufacturer)
1	Evenness tester	1	Zellweger-uster, Keisokki Kogyo
2	Yarn strength and elongation measuring apparatus	1	Zellweger-uster, Keisokki Kogyo, Mesdan, Asano Kikai
3	Wrap reel	1	Mesdan, Asano Kikai
4	Lop block	1	Mesdan, Asano Kikai
5	Roving tester	1	Asano Kikai
6	Evenness defects tester (Seriplane)	1	Mesdan, Asano Kikai
7	Number of strand tester	1	Mesdan, Asano Kikai
8	Dryer for measuring yarn number based on corrected weight	1	Mesdan, Asano Kikai
9	Fiber length measuring apparatus	1	Asano Kikai
10	Electronic balance	1	Mesdan, Asano Kikai
11	Nep Trash Analyzer	1	Mesdan
12	Barothermohygraph		Mesdan, Asano Kikai

Table 7.6.5: Quality investigation results of raw cotton for spinning

RAW COTTON	NO	ARE	CON	LEN	UN	STR	EL	MIK	RD	B	PS	OE
WULUMUQI	1	0.05	13	1.14	47.0	26.1	6.4	4.4	77.4	8.4	12	8
	2	0.17	17	1.14	46.5	27.0	6.3	3.9	76.2	8.5	12	8
USA	1	0.05	9	1.09	48.1	28.6	6.9	3.8	72.1	11.6	12	9
	2	0.03	8	1.09	48.1	28.3	6.9	3.8	72.1	11.6	12	9

Note) Are (%) Area ratio of leaf dust in the 10cm Square, Con No of leaf dust/10cmSquare,
 Len Length of yarn (inch), Un Symmetry of yarn length (less than 42 extremely unbalance, 44~45 normal,
 over 47 extremely balance),
 Str Strong g/tex, El Extension (%), Mik Delicacy (μ),
 Rd Brightness (inside of 40~85), b Yellow grade (Yellow exponent, inside of 4~18),
 PS Grade for ring precise spinning, OE Grade for open end

Valuation of investigation results

- ① They are in good quality for spinning raw cotton about 20's

②Wulumuqi cotton shows a special feature of a little weak in yarn strength, but yarn length are sufficient and further very white and clear, but there are lack of uniformity in yarn delicacy, take care to the nap (feather ball) at the thin part of yarn.

③USA cotton changed its color to red by aging (harvested several years before?). Length of yarn is a little short, care to the nap (feather ball) at the thin part of yarn, but as a 20's class yarn it has a good quality.

Very fine raw-yarn is usually used for jeans in Japan.

T005

(1) The present condition:

1) History of enterprise

The enterprise was designated the state enterprise of “cross weaving machine] manufacturing factory in 1958 and began to operation And after that, it has continued “manual cross weaving machine] and “both side cross weaving machine], further in '95 it developed “automatic cross weaving machine (with jack-card) and so developed the business Its sales function has progressed favorably based on well-known name, high technology, and its brand name derived from actual results.

However, since the economical policy of government changed to market economy, enterprises of Taiwan have advanced in the main land of China and the inland munitions industry changed its managing form to private enterprise, consequently the sales competition became hard and business operation have been facing the hard condition.

Especially, the problems derived from manufacturing system and institution as state enterprises have become heavy burdens to the management. (Measures against surplus workers, compensation to the retired person after age limit, etc.)

This enterprise is now changing its managing form from state enterprise to private company on the target of April '01 And this time, it is in a preparing stage of system changing, and it began to invite the applicants for retirement since end of '00 and it reached 180 persons, further it arranged its monthly manufacturing scale to 700 set, and tackling the revival of business.

Further, its site for factory is in planned area of city, therefore it plans of removal of factory in 2~3years.

We expect that this enterprise clear “negative legacy” in this opportunity, and come back as a new company both in name and reality.

2) Diagnosis

a) Conception of new company

- ① Organization of capital It shall be a member's 100% stock holding company Its total stock is 3.5 mil. Yuan. Ratio of hold stock are as follows; more than 51% for manager and managing staff, 45~48% for employee and third person can't have stock.
- ② Principle of management Number of members 200 person (director and manager 20, employee 180).
When existing resource is applied practically, the target of break-even point of sales is 1.6 mil. Yuan/month. Considering the entrusting of manufacture to outside enterprises, our future target becomes manufacture and sales of 1,000 sets
- ③ Disposition of property. Availing of a good treatment, it is expected that the debt is off-set by the valuation of present property (fixed and current). Ownership of land belongs to our country hereafter, so we shall borrow it for 50 years. Further, we paid 34~35 thousand Yuan/man of retiring allowance to retired people relating to restructuring. And for retired people by age, company shall receive 8,000/man Yuan of security as a special measure and shall treat it hereafter.

b) Reform of employee's consciousness

In order to survive in the market economy and in the changed form of company, first of all a reform of consciousness of "We work for our own living." is necessary. Without adhering to past mental climate, habit and interests, in order to change their working place to the place that can manufacture effectively and safety the product of good quality, the new company should create circumstance and atmosphere in which all of the employees can participate in enterprise's activity positively.

For that purpose, establishment of working discipline is necessary. But we didn't feel the atmosphere of working place vivid in the factory. At the chance of new company's start, you should prepare shop regulation and work standards and make each worker understand his work contents and work quantity per day and make him carry out the work. Assessment of worker shall be made according to the objective data, such as "work standards] "list of standard works] On the other hand, enterprise side should perform a great improvement for the environment of working place, to the level that the third person comes to the factory and feels "This factory is changed."

c) About quality of product

We heard that there are many claims such as “Quality level is dispersive.” “There are many stains by oil, so it takes time to make clean before shipping.” On the process to manufacture “cross weaving machine”, almost all parts are worked by hand in the company. This means that this product has a high dependence level to the worker’s skill. Assembling work needs high skill, so we introduced there a percentage contract system.

For the work place where high dependence level to the worker’s skill is required and introduced percentage contract system, the confirmation of working quantity and product quality is the absolute condition and this fact can greatly contribute to the cost down (material and loss of work).

(2) Guidance:

1) Reform of all of the employee’s consciousness

We can understand it is very difficult to remove the habit or custom brought up in the long history and circumstance

But we think, in the state of this time, that the revival of new enterprise is nearly impossible. You should act positively to be understood by people in the society that your company changed to a “Stock holding company of all employees” both in name and reality. Reform of the consciousness in which you throw away past habit, rights and interests and you realize that the profit insurance of company guarantees your lives are absolutely necessary for you.

For the purpose, enterprise must build a working environment in which employees can positively work, so we recommended to carry out the following measures

①Arrangement, putting in order, cleaning of “in the land of factory” shall be carried out.

②You shall designate “assembling process” to a model process, and improve its working environment completely.

Practice 5S activity. Arrangement, Put in order, Cleaning, Cleanliness, Discipline

If “Assembling process” become successful then develop it laterally and spread it to other work place.

③Light of work place shall be more bright.

This time (after 3 months), we realized the atmosphere of factory changed greatly

We heard that arrangement and put in order were carried out in and out of factory, and factory got 40,000 Yuan by sale of disused articles and by central managing of tools. Further, at the

“assembling process” of model process, arrangement, put in order, cleaning were carried out and division lines were drawn. Illuminators are in changing from single lamp type to double type, and environment of factory was greatly improved.

2) About marketing

Present Chinese “Cross weaving machine” industry are in a severe condition, because its sales is 20,600 set/month by 7 company including foreign capital. A new-born company has to sale to this market 400~1,000 set every month. Presuming from present state, “price competition” shall become more violently. For that reason, a fundamental “Marketing strategy” is required.

This time, we received the guidance of two themes “Principal concept of market” and “Marketing strategy placed in the center of managing” from a specialist of marketing.

① Strengthening of sales section (Practical use of sales-staff, agent, contract staff)

As an organization “Market forecasting” “Investigation of competitors trend” “Product valuation by customers” “Information of new product development”

② Review of how to collect bills

③ Strengthening of cooperation between sales and technical section

This time, ①② were turned to practice, and organization of sale was changed and strengthened. For sales system, Zhejiang (3 person) is appointed as a cardinal point and divided to total 3 places with north (1 person) and south (1 person) place, and introduced responsibility system. Every place engages in sales action (sales, collection of money, information) with agents (15 agents) of every place. For the salary system, a results proportional income system is adopted. Further, for ③, “Claim disposition format” was introduced at the beginning of the year, and tackle with this matter by all of the company, and the cause and responsibility shall be investigated, and consequently try to prevent recurrence and to obtain the customer’s trust. These data should be handled by computer.

3) About the utilization of computer

Computers are utilized now only for “Design and development” “Unit price management of purchased parts” and “Calculation of wages”, so its usefulness is limited and therefore through diagnosis it was determined that the change to LAN system is not necessary. From now, people shall input information correctly, and if necessary, check the change of “classified data” as time passed and use the results to the determination of manager’s will. For that purpose, enterprise shall impose tasks to staffs in order to make progress their treating levels for computer. There

are some problems such as keeping secrets and prevention of invasion of computer viruses in “Design and development”, the staffs shall pay attention to managing and keeping the data.

4) Equipping and practical use of standards

During our investigation, we were asked our opinion about an evaluating method of achievements for every age, classified in work group (lathe operator, automatic shaver operator, assembling worker, etc.). Many enterprises worry about this problem generally. Especially it grows to a “kindling coal of quarrel” in the enterprise that has introduced “percentage contract system”. Its solution is the determination of “standard work volume” based on “work standard” that every man assents. It is easy to say that solution, but it needs time and labor as a matter of fact, then it is important to carry out it after complete explanation of its point and purpose to the relating people.

In the beginning of 20 century, “operation research: operation improvement, standard work time” are introduced as one of the scientific managing technique, and since the 1920’s, this method was introduced as “IE. industrial engineering” which plans all of the enterprise management with the consideration of productivity improvement, and have progressed the modernization and rationalization of enterprise until now.

For “work standards”, see annex “Instances of diagnosis and guidance”.

7.7 Diagnosis and guidance in the field of light industry

7.7.1 Current situations of studied enterprises

1 Current situations of study object enterprises

(1) Overview

Since the term "light manufacturing industry" has not been clearly defined, the manufacturing industry excluding machinery and electronics industry, spinning industry and food processing industry was determined as light manufacturing industry and as the object of study this time. For the study this time, SME Office of Hangzhou City selected the fourteen light industry enterprises as listed in Table 7.7.1 "List of enterprises visited and studied (light industries)".

Table 7.7.1 List of enterprises visited and studied (light industries)

Enterprise I.D No	Principal products	Enterprise configuration	Scale	Proceeds of 99' (10,000 Yuan)	Number of employees as of end of '99
L-001	Glass bottles and compound paper	Joint-stock corporation	Medium scale	10,700	1,212
L-002	Bicycles and their parts	Joint-stock corporation	Medium scale	6,868	230
L-003	Tooth paste	Joint-stock corporation	Medium scale	6,000	500
L-004	Cardboard for packaging and boxes	Joint-stock corporation	Medium scale	2,200	402
L-005	Mechanical wrist watches	Joint-stock corporation	Medium scale	2,360	860
L-006	Umbrellas and bicycle raincoats	Private enterprise	Unspecified	25,000	1,700
L-007	Basic skin care products for children	Joint-stock corporation	Medium scale	Not known	200
L-008	Matches and tobacco leaf processing	Joint-stock corporation	Medium scale	2,280	400
L-009	Ballpoint pens	Private enterprise	Medium scale	1,100	130
L-010	Printing and bookbinding	Joint-stock corporation	Medium scale	1,600	200
L-011	Decorative paper and flame resistant decorative board	Joint-stock corporation	Medium scale	9,000	351
L-012	Electrolytic capacitor aluminum cases	Joint-stock corporation	Medium scale	Not known	280
L-013	Decorative case printing and advertising panels	Private enterprise /	Small scale	1,300	130
L-014	Lamp bulbs and fluorescent lamps	Joint-stock corporation	Medium scale	10,000	1,800

Note Classification of the scale was made based on the following criteria

Large scale Capital of 50 million Yuan or more and 500 or more employees Medium scale Between large scale and small scale

Small scale Capital of less than 5 million Yuan or 500 or less employees

Classifying these enterprises by categories of business results in the following 16 categories: Glass bottle manufacturing (1 enterprise), bicycle and bicycle parts manufacturing (1 enterprise), tooth paste in tube manufacturing (1 enterprise), paper manufacturing in a broad sense (3 enterprises), mechanical wrist watch manufacturing (1 enterprise), folding type cloth umbrella manufacturing (1 enterprise), cosmetics manufacturing (1 enterprise), match manufacturing (1 enterprise), tobacco leaf intermediate processing (1 enterprise), ballpoint pen manufacturing (1 enterprise), printing and bookbinding in a broad sense (2 enterprises), lamp bulb and fluorescent lamp manufacturing (1 enterprise) and electrolytic capacitor aluminum case processing (1 enterprise).

The number of enterprises visited and studied this time is fourteen (14) (questionnaire sheets were recovered from 12 enterprises) only as indicated above, and when they are viewed by category of business, the number of enterprises that belong to each category was only one to three enterprises. Needless to say, it is not possible to universalize current situations and features of light industries in general of Hangzhou City with results of study of these enterprises. What are stated below, therefore, are current situations and features extracted from questionnaire sheets and from results of visited study and so it is necessary to recognize in advance that they are findings from these limited number of object enterprises of this study. For this reason, numbers of enterprises are used to describe the current situations and others in this report while it is a usual practice to use percentage in such a study.

(2) Enterprise configuration

All of the studied enterprises of the light industries were already incorporated as company limited or private enterprises. The time of incorporation of the six enterprises, which were converted from state-owned enterprises, was 1999 to 2000, and it was 1994 to 1998 for most of the five enterprises of group proprietary scheme. And the remaining three enterprises were established as private enterprises right from the beginning. Table 7.7.2 shows the enterprise configuration at the time of establishment and at the time of the study.

Table 7.7.2 Visited enterprises viewed as classified by configuration of management and transition

Enterprise configuration			Number of enterprises	Enterprise scale	
Progress and transition of enterprise				Medium scale enterprise	Small scale
Joint-stock corporation	From state company	Immediately after privatization	5	L-001, L-003, L-005 L-007, L-014	
		Privatized several years ago	1	L-008	
	From local company	Immediately after privatization	1	L-002	
		Privatized several years ago	4	L-004, L-010, L-011 L-012	
Private	Private since the time of establishment		3	L-009, L-006(uncertain)	L-013

Looking at these enterprises from the viewpoint of the enterprise configuration, there is no state-owned enterprise but there are three private enterprises, four limited companies, three limited liability companies and four stock cooperative companies. As the enterprise configuration before the structural reform, six were state-owned enterprises, five were of group proprietary scheme such as township enterprises and three private enterprises from the beginning.

(3) Capital stock and capital composition

The scale of the capital stock varies from one million Yuan to 50 million Yuan, and it appeared that no correlation exists between the scale of the capital stock and the present enterprise configuration or former enterprise configuration.

Regarding capital composition, the owned capital is 100% for the six enterprises, 76% to 99% for the four enterprises, 51% to 75% for the three enterprises, and 50% or less for only one enterprise. Shareholders other than the enterprise itself are state government, local government (rural district and city) and clients (in some cases). Shareholders of treasury stocks may be executive officers and employees together, executive officers only, or in case of private enterprises, the enterpriser himself or his family members.

(4) Proceeds, number of employees and proceeds per employee

The annual proceed varies from 11 million Yuan to 250 million Yuan, and no features can be found with respect to the category of business or the enterprise configuration. The number of employees also varies as 130 persons to 1,800 persons. But except for the umbrella manufacturing enterprise (enterprise ID L-006), the number of employees of the former state-owned enterprises is relatively large and is about 830 persons at average among six enterprises. The next comes former group proprietary enterprises, that is, 293 persons at average among five enterprises. The average number of employees of two private enterprises is 130 persons.

When the proceeds per employee is observed next, while the average of the three private enterprises is 112 thousand Yuan, the average of nine enterprises of other enterprise configuration such as limited company is 115 thousand Yuan which hardly differs from the above figure. However, the average proceeds of the only five enterprises privatized from the former state-owned enterprises are 70 thousand Yuan, which differs greatly from the above average figure of the three private enterprises. In this connection, the average of former township enterprises is 172 thousand Yuan.

(5) Lines of business and configuration of production

All of the studied enterprises are handling development/design through sales in an integrated way. There is no enterprise that is handling subcontracted processing, subcontracted assembly or subcontracted parts production only. Also, as they employ the production to order system, there is little worry about the excessive stock volume of the products. Even the, some enterprises (ID

L-001, L-010, etc) had a considerable volume of products in their stock.

(6) Evaluation, complaints, etc from customers

When the evaluation from customers is checked with respect to three conditions, i e., quality (Q), prices (P) and delivery time (D), there is no enterprise that gives satisfaction to customers on all three conditions or that receives complaints from customers on all three conditions on the contrary. The number of enterprises receiving complaints regarding the quality is three out of twelve enterprises from which questionnaire sheets were collected. Four enterprises received complaints on the prices and none received complaints on the delivery time

(7) Product standards and industrial standards

Many of enterprises are using standards specified by customers (8 enterprises), national standards (7 enterprises) and company standards (6 enterprises) as industrial standards to which they comply. The number of enterprises complying with international standards such as ISO is still as small as four This fact is deeply related to the fact that the majority of these enterprises are on the production to order system

(8) Technology support and transfer

Regarding technical education and training of employees, about one half of enterprises are currently using OJT or education and training institutions in the nation. But there is no enterprise that is implementing planned employee education in the process of becoming the backbone of the enterprise since employees entered the enterprise. There are many (eight) enterprises that desire an education in the advanced foreign nations in the future, and there are also many (nine) enterprises that are asking for financial support for technology transfer. Many enterprises want the new technology to be introduced through the seminars or the like and for education and training in the form of workshop, as the form of education and training On the other hand, it is noteworthy that only one enterprise is expecting public institutions such as country, province and city to do something for enterprises

(9) Inspection and quality control

It is characteristic of the enterprises that started as private enterprises from the beginning that they have no dedicated quality control department in the organization. However, it does not mean that such enterprises do not place emphasis on the quality of their products. It is more appropriate to express in such way that since development occurred too quickly, the organization of the enterprise has not yet been formed

One example is the umbrella manufacturing enterprise (enterprise ID L-006; from which questionnaire sheet was not returned) Although there is no department that is dedicated to quality control, group management is implemented by 12 to 16 persons in each manufacturing process. Each group is obliged to take responsibility for quality and it is strictly controlled so that no non-conforming articles are fed to the next process. In addition, compensation scheme is being

evolved in the whole nation as the after-sales service system. This enterprise received ISO 9002 certification and received many awards because of the reason that quality is superior and traditional marking management is implemented, even if the enterprise belongs to the category of labor-intensive industry.

On the other hand, former state-owned enterprises have such a tendency that they are reconciled to high defective rate, even if they have quality control departments in the organization, dedicated staff and knowledge and technique related to quality control. An emphasis is laid on inspection rather than quality control.

(10) Product development

For the product development, these enterprises have research and development departments (about 7 enterprises) and are implementing development based on specifications (drawings) from customers and/or self-initiated development (8 enterprises). There are also enterprises that are consigning development to public institutions such as colleges (2 enterprises). Regarding themes of development, there are about equal number of enterprises that execute planning self-initiatively and those that implement development based on requests from customers are fifty-fifty. Besides, we saw a few enterprises stating that they implement development to compete with products of other enterprises in the same trade and that they use foreign products as references, although the number of such enterprises is small.

The number of enterprises that are systematically implementing schedule management in development processes and design examination is small but enterprises are conducting performance test and inspection of trial products, as a natural matter of fact.

(11) Number of employees and personnel training

The changes in the number of employees were checked using seven enterprises although small as a number of samples. In three years up to 1999, it is either level off or decreasing as the trend. The enterprises such as ID L-007 and L-013 experienced approximately 20% decrease during this period. The relation with market conditions (proceeds) cannot be read from questionnaire sheets, but in the case of the enterprise of ID L-013, there is such a project, which is currently in progress, that since decorative case printed products have a low added value and competition is keen, a factory will be constructed in Sichuan Province, where the labor cost is low, jointly with a liquor producer and the entire operations will be transferred to the new factory in Sichuan Province in the future. The number of employees working in the factory in Hangzhou City is gradually reduced with an intention to make the factory specialized in products of high added values.

In the composition of number of employees by educational background, the ratio of employees having educational background of college graduate is extremely low regardless of the enterprise configuration. It is only 1% to 3.4%. The ratio of junior college graduates largely varies from 0.5% to 21%. Looking at the ratios of high school graduates and junior high school graduates, the ratio

of elementary school graduates is a little higher at the private enterprises than the limited companies, but we cannot come to a conclusion because the number of samples is small

The average age of employees is 35 or less at private enterprises, while it is 38 to 41 at limited companies with only one exception.

As problems related to personnel affairs, the most typical one is that the internal education and training do not bring about results to the sufficient level. It was indicated by as many as nine enterprises, followed by job-hopping (5 enterprises) and difficulty in employing those who have high educational background (4 enterprises).

Internal training is implemented by OJT at almost all the enterprises (10 enterprises), and nearly half of these enterprises use schools and training centers at the same time.

As qualifications for necessary human resources, the managing capability comes to the top. It was indicated by half of these enterprises, followed by the manufacturing technology and the developing capability.

(12) Finance and funds

The majority of enterprises get loans in one form or another from industrial/commercial banks in many cases. Some enterprises use loans from agricultural banks and commercial banks. The most loans are of short-term loans of less than one year and used for the operating fund, but there are five enterprises that use longer-term loans of one year or more for the purpose of equipment investment or the like

The interest rate varies but in many cases, it is 5 to 7% per annum. Some of the enterprises are getting loans at such a high interest rate as 9 to 10%.

Six enterprises want to continuously use loans in the future, and the majority of them need loans for their operating fund.

Among the complaints and requests to financial institutions they indicated are; establishment of public credit guarantee system because their security and mortgage are insufficient, simplification of proceedings and documents, unclear criteria for examination of qualification and small loan amount

Regarding the financial standing, the majority of enterprises were reluctant in disclosing their financial statements, and so it is not possible to make judgment based on figures. But findings from our impressions obtained during the visit study are as follows:

- As it is compulsory to create the profit-and-loss statement and balance sheet in enterprise accounting, each enterprise does make these documents. However, if these documents correctly indicate financial standing is doubtful
- As creation of the statement of manufacturing cost is not compulsory, there are a considerable number of enterprises that are not creating this statement and they are not able

to seize their own accurate manufacturing cost.

- It can be said that none of these enterprises fully understand contents of these documents and are making use of these documents for improvement of the management such as improvement of financial standing and reduction of manufacturing cost.

With regard to evaluation of enterprise assets, many (8) enterprises are receiving appropriate evaluation through examination implemented by external institutions.

(13) Market and sales

About one half of enterprises are selling their products in Zhejiang Province and in neighboring provinces and cities, and the other half are evolving their sales in the entire China. There are six enterprises that are expanding their trade outlets to outside of the nation, and two enterprises (bicycles, ballpoint pens) among them are exporting the majority of their products to outside of the nation.

As the method for development of the market, they create catalogs and brochures and sales representatives visit prospective customers (8 enterprises), exhibit products at major shows and exhibitions in the nation (6 enterprises) and advertise their products using mass media (5 enterprises). Also, there are enterprises having home pages on Internet, but it appears that the effect of such efforts is not very good.

As the market environment, many (9) enterprises indicated that there are many competitors and price competition is keen. Some enterprises (tooth paste, wrist watches) also concern about fiercer competition with overseas competitors accompanying WTO affiliation.

However, seven enterprises replied that there is a room for expansion of the market as long as the quality is good. Furthermore, some forward-looking enterprises even stated that they take WTO affiliation as a chance for entry to the overseas market.

(14) Computerization

As the channels currently used for acquisition of information, customers, business partners and market are used most widely among these enterprises as indicated by 10 of them, followed by exhibitions and shows (6 enterprises) and Internet (4 enterprises), etc.

The number of enterprises using personal computers is as many as nine. The purposes of introduction of personal computers are use of the e-mail and Internet (7 enterprises), manpower saving in office management and others (6 enterprises), seizure of situations of progress of operations (6 enterprises) and so forth.

Although the top management and executive officers took initiative in introduction of personal computers at most of the enterprises, the number of enterprises that achieved the purposes is small, that is, less than a half. Principal causes for such failure are: there are not enough system engineers in the enterprise, employee training was not conducted successfully and improvement of operations

to suit the new system was not achieved.

(15) Others

Questions related to motivation of initiation of business and features of the management under item 6 of the questionnaire received almost no replies.

Also, the term VC (venture capital) was used in the questionnaire but it seemed that its meaning was not understood correctly and was confused with a joint venture or technical collaboration. Therefore, it was determined to exclude this item from the object of analysis of current situations

The current situations and features of fourteen study object enterprises in the field of light industries are summarized above. Described below are what were felt in the process of the study. In general, the fourteen study object enterprises can be classified into the following three groups based on their features.

[1] Enterprises that started as private enterprises

The vigor of growth of enterprises belonging to this group is remarkable. They are not dependent on the government supports, freely implementing technological development and market expansion with their own efforts. Also regarding funds, they are expanding the business with confidence without feeling nervous about some debts. Their decision and execution are quick as led by the powerful top management.

To point their weak points, on the other hand, their organizational structure as enterprises has not yet been established to the complete level, as can be seen in the aspect of management which is particularly immature and they employ cheap labor forces in large quantities and provide only inferior conditions and environment for these workers.

[2] Enterprises that were reformed from large-scale state-owned enterprises or group enterprises

Having surplus employees, these enterprises are in financially painful environment, as they have to pay living compensation money to those who are standing by at home and they have to bear medical expenses for retired employees. Furthermore, many of employees have not yet forgotten the constitutional predisposition of state-owned enterprises, and they stick to the old management and control system. They are also at a loss in product development and technological renovation. What is more, decision and execution are slow because it is necessary to obtain consensus of employees and approval of superior institutions for important decisions.

Their organizational structure is complete and the intellectual level of employees is high. But these features cause sectionalism to occur among sections in the enterprise and obstruct the enterprise-wise renovation.

[3] Enterprises reformed from relatively small-scale state-owned enterprises or group enterprises

Although they are not easy in financial affairs, decision of the top management is implemented with relative ease. A few executive officers are responsible for the business management and vigor is felt among them.

As they are also blessed with human resources, it can be expected that these enterprises will make steady progress as so-called middle-standing enterprises in the future if they raise the technological level and improve the product quality

2. Overview of light industries in Hangzhou City in 1999

Enterprises of light industries in Hangzhou City belong to either Hangzhou First Light Industry Holding (Group) Limited Company or Hangzhou Second Light Industry Holding (Group) Limited Company.

(1) Enterprises under the control of Hangzhou First Light Industry Holding (Group) Limited Company

The number of enterprises and business units under the control of Hangzhou First Light Industry Holding (Group) Limited Company is 43. The breakdown is eleven (11) state-owned enterprises, two (2) group enterprises, twenty-one (21) joint venture enterprises, seven (7) joint-stock corporations, one (1) management type enterprise and one (1) employee technical school. Papermaking, silicate, food, chemicals for daily use, machines for daily use, printing & packaging, etc are principal lines of business of these enterprises.

The number of incumbent employees of enterprises under the control of Hangzhou First Light Industry Holding (Group) Limited Company is 23,300 persons, the number of professional engineers is about 2,600 persons, the gross assets are 3.66 billion Yuan and the net assets are 1.57 billion Yuan

The gross proceeds were 1.83 billion Yuan, which indicates a drop by 8.3% from the previous year. But the sales to production ratio was as high as 99.5%. The gross amount of export was 117 million Yuan, which indicates a drop by about 20% from the previous year. The before-tax profit was 299 million Yuan, the net profit was 75.33 million Yuan, which indicate a drop by 8.9% and 33.3% respectively from the previous year.

The economic environment of enterprises under the control of Hangzhou First Light Industry Holding (Group) Limited Company was severe as compared to 1998, as shown by the above data. But various reforms toward the market economy are being positively promoted. The number of enterprises, whose enterprise configuration was changed to limited liability company of joint-stock collaboration scheme in fiscal 1999 was as many as six. Shares were concentrated to the top management at these enterprises, centripetal force of the enterprise was raised, management became easy and motivation of employees was up reared. For those employees who were laid-off as a result of structural reform, re-education for new jobs and personnel relocation were implemented for about 6,000 persons. In addition, light industries mutual cooperation funds was established upon recruitment of donations, and it was utilized to help about 250 poor and needy persons

Efforts were made in the promotion of scientific technology in enterprises, and various results were achieved. Newly developed products were as many as 160 types, and the proceeds of these new products were as high as 300 million Yuan. Efforts were also made in the scientific technology-modifying project and enterprise management-strengthening project. As a result, the environment was improved and the quality was enhanced to such level that enabled their products to be approved as Hangzhou City brand products and authenticated for excellent quality.

(2) Enterprises under the control of Hangzhou Second Light Industry Holding (Group) Limited Company

The number of enterprises and business units under the control of Hangzhou Second Light Industry Holding (Group) Limited Company is 49, and categories of business such as home electric appliances, plastics and leather, hardware and art and craft works are included. The number of state-owned enterprises is 43 among them. The number of employees of enterprises under the control of Hangzhou Second Light Industry Holding (Group) Limited Company is 24,900 persons, the number of professional engineers is about 3,200 persons, the gross assets are 5.16 billion Yuan and the net assets are 1.99 billion Yuan.

The gross product in fiscal 1999 was 2.80 billion Yuan (dropped by 24% from the previous year), and the gross proceeds were 2.90 billion Yuan (dropped by 17.4% from the previous year). The export amount was 320 million Yuan, which indicates an increase by 5.7% from the previous year. The before-tax profit was 200 million Yuan, the net profit was 38.5 million Yuan, which indicate a drop by 19% and 59% respectively from the previous year.

Also for the enterprises under the control of Hangzhou Second Light Industry Holding (Group) Limited Company, the economic environment was not easy compared to the previous year. But structural reform of enterprises, innovation of scientific technology and reform of management made progress, and as a result, products satisfied needs of the market and competitive power was strengthened.

During this process, more enterprises came to recognize that technical innovation is important for surviving and growing in the severe market competition. Thus, the amount of funds spent for investment in the technical innovation increased to about 57 million Yuan, which was about 1.3 times of that of the previous year, and the fruits of such investment already began to appear.

Although minor economic declination occurred to the enterprises under the control of both of Hangzhou First Light Industry Holding (Group) Limited Company and Hangzhou Second Light Industry Holding (Group) Limited Company in fiscal 1999, they have made steady progress in the aspects of structural reform and technical innovation. Nevertheless, there were such enterprises that are not able to catch up with these waves of conversion to market economy, as a natural matter of fact. For those enterprises that are not capable of executing structural reform at a time, measures such as separated reform and contracting of risk mortgage are available, but even then, there are

enterprises having large debts but no product competitiveness in the market and so not being able to recover the deficit. These enterprises have discontinued their business and broke up. Even in such a case, however, highest priority is given to preserve the lives of employees, and measures such as economic guarantee to employees, conciliation to outplacement centers and re-training of skills and technology are taken.

7.7.2 Diagnosis and guidance in the field of light industries

1 Simple diagnosis

We implemented a visit study of fourteen (14) enterprises during Phase 1 field study in relation to the light industries as described in Section 7.7.1. The mean visit study time per enterprise was around three to four hours, and we considered it difficult to conduct the study in detail during that time. Therefore, we used diagnosis from visible realities upon inspection of the production factory as the main part of the study besides what are acquired through questionnaire sheets. The outline of study object enterprises of the visit study is as shown in Table 7.7-L1 "List of enterprises visited and studied".

Simple diagnosis and guidance related to twelve enterprises excluding glass bottle factory (L-001) and ballpoint pen factory (L-009), which were selected as model enterprises, are described below. But since we could not obtain financial statements from these enterprises, it was not possible for us to diagnose their financial status based on specific numerical values.

Enterprise ID: L002 (Bicycles manufacturing business)

The principal products of this enterprise are bicycles for children focusing on low grade and middle grade products. These products are exported to Middle and South America, Spain, etc. The proceeds in fiscal 1999 were about 69 million Yuan and the number of employees is 230 persons. Products are designed based on orders from customers, and products developed by the enterprise itself are minor.

The assembly line is a combination of 75% partial assembly and packaging process, and the flow production system consists of 22 processes. Workers in many processes are working in full. In about quarter processes, however, workers are waiting for arrival of works in process arriving from the upstream process, and it appears that there is an unbalance among processes. It is advisable to make improvement using such means as the work time analysis is needed.

There is also a group engaged in supply, sorting and preparation of parts along a separate assembly line. As no workbench is provided for this group, members of the group are working while directly sitting on the floor or crouching down. The work will be easier and the efficiency will increase if a simple workbench is used.

A number of tanks are located in the rust and grease removing process, which is a process before

coating. One or two workers are working on a work platform of unstable footing without handrails, which is apparently dangerous.

Enterprise ID: L003 (Tooth paste manufacturing business)

This enterprise was established as a state-owned enterprise in 50's and was reformed to a joint-stock corporation collaboration enterprise in 1999. This enterprise takes pride in being the first in the whole nation in production of the toothpaste for children, and it is in the third place in production of the toothpaste containing herb medicines. The proceeds in fiscal 1999 were 60 million Yuan and the number of employees is 500 persons.

We did not come across any items that must be taken up as problems particularly during the observation tour in the field of production. But we pointed out that the quantity of aluminum tubes, which were judged to be non-conforming, is somewhat large. We advised to review the wage structure, in the diagnosis card in order to secure excellent human resources.

The market environment is severe. Competition with products from U.S.A. besides products made by other manufacturers in the nation is keen, and the share of this enterprise in the market has been gradually reducing. Comparative study with products of other makes using product monitors and product development are urgently needed. Furthermore, it is unavoidable to carry out cost reduction resolutely and compete with others with respect to the prices.

Enterprise ID: L004 (Craft paper manufacturing business)

This enterprise was established as a group enterprise in 1979 and converted to joint-stock scheme in 1994. Principal products are cardboard (craft paper) for cartons and packaging. The proceeds in fiscal 1999 were 50 million Yuan, production volume was 25,000 tons and the number of employees is 400 persons.

Used paper, which is a raw material, is collected in Shanghai, Wuhan, Jiangsu Province, etc., but price fluctuation of used paper is drastic. Used paper is piled up in the open air, and the working environment of the workplace to mix used paper with chemicals is quite inadequate. The production equipment produced in the nation has become obsolete and triggers occurrence of non-conforming products. They want to replace the equipment with a new one, but it is hard to get the loan for equipment funds.

We discussed about construction of a network for collection of used paper, improvement of the distribution system and others regarding the method for recovery of used paper.

Enterprise ID: L005 (Wrist watch manufacturing business)

This enterprise was established in 1972, converted to limited company in 1993 and again converted to a limited liability company in 2000. This enterprise is one of top threes in the nation in production of mechanical wristwatches. The proceeds in fiscal 1999 were about 24 million Yuan.

and the number of employees is 860 persons. They experienced three boom-bust cycles since 80's, but the growth has been steady in the past few years. (The proceeds already reached the level of 33.5 million Yuan as of September.) They have clear business targets, and these targets are well acknowledged by employees.

Discussions were concentrated on themes related to up-grade (thickness reduction) of products. The cause of the failure of trial products is interference caused by distortion of parts. As all the processes including the material, heat treatment, working accuracy, working stress and accuracy of inspection equipment may be involved, these factors must be corrected by taking time. Production equipment and inspection equipment are complete, but they are old as a whole.

Having found faulty plating and insufficient durability of plating, we judged that processed from the pre-treatment stage through the post-processing stage should be reviewed and proposed to invite experts for that purpose.

Enterprise ID: L006 (Umbrella manufacturing business)

This enterprise produces and markets folding umbrellas, raincoats for bicycles and others. Having 30 sales bases and 2,000 department stores as fixed customers, the market share is over 20%. The proceeds in fiscal 1999 were 250 million Yuan and the number of employees is 1,700 persons. It has been a family type private enterprise from the beginning, but they were aiming at conversion to a group enterprise.

With unique quality control structure adopted, this enterprise received ISO 9002 certification in 2000. They are also evolving after-sales servicing in the whole nation, replacing at no cost if failed within two years, and repairing for value thereafter. We gave them advice regarding the working environment, locations of lighting equipment in particular, as what we felt during inspection of their factory. They brought up the subject of fakes sold on the market. Fakes are produced by tiny enterprises such as home industry and they come out one after another even if some of them are clamped down. Therefore, it is wasteful to spend much time for pursuit of fakes. It is rather more forward-looking to think it as a price of fame and to produce products of quality that cannot be faked.

Enterprise ID: L007 (Cosmetics manufacturing business)

This is a China's oldest cosmetic enterprise founded in 1862, which is in the age of Ch'ing dynasty. The configuration of the enterprise has changed in various ways since then, but it became a joint stock and co-operative company in 2000. The number of employees is 200 persons. Their principal products are skin care cream for children, shampoo and sanitary goods. With cream in particular, they have a share that is ranked as one of the top threes in the whole nation. They intend to extend the line of products to shaving cream for men and facial wash in the future. They clearly indicate business targets, and to realize these business targets, they attach importance to thorough

publicity of targets to employees, discipline of employees and their self-responsibility.

There was nothing to provide guidance to them in particular. For their requests related to the business management and production control, we provided an explanation for the scheme of dispatch of experts from Japan but nothing more than that. We indicated on the diagnosis card hints on contrivances in the contents of advertisement in the home page and on development of market in overseas Chinese societies.

Enterprise ID. L008 (Matches and tobacco leaf intermediate processing business)

This enterprise was established as a match manufacturing company in 1909. Today it has also added intermediate processing (tar content reduction) of tobacco leaves in its business line besides production of matches. The proceeds in fiscal 1999 were about 23 million Yuan and the ratio of proceeds of matches and tobacco leaves is about fifty-fifty. The number of employees is 400 persons. The tar content reducing technology was developed spending four years under cooperation of colleges, research institutions and others.

The demand for both of matches and tobacco leaves are products, the demand for which is decreasing as a trend in the world, and so it is advisable to develop products of the next generation. Low-grade matches are mainly produced at present, but it is necessary to upgrade matches, to develop the market of service industry including restaurants and hotels. For that purpose, investment in automating equipment is necessary, taking the move of the factory as an opportunity. At the same time, to improve financial conditions of the enterprise, reduction and personnel relocation of employees, who are currently engaged in manual works along the match production line, are necessary.

Enterprise ID. L010 (Printing and bookbinding business)

This enterprise was established as a township enterprise in 1978 and converted to a joint-stock corporation in 1996. The line of business is printing and binding of textbooks for elementary schools and junior high schools, advertisement and magazines. The proceeds in fiscal 1999 were 16 million Yuan and the number of employees is 220 persons.

It is a well-timed policy that they intend to enter into new fields such as printing of advertisement and magazines with the positive base load, that is, printing and binding of textbooks, as their arms. To hit this target, however, it is necessary that both of executive officers and employees in a body make efforts for enhancement of quality and technological innovation. It can be said that the quality of prints is almost determined by the equipment being used, but with this enterprise, much of the work is done manually. Their technology cannot catch up with the speed of the needs of the market. Furthermore, it will be necessary to refurbish conventional methods for market development and sales and to employ advertising designers.

Since the merchandise, that is, textbooks, has seasonal variation, it is unavoidable that they

remain in the stock to a certain extent. But it is necessary to examine reduction of the stock through front-load delivery, upon deliberation with the customer, that is, Zhejiang Province Publishing Company. What is more, it is desirable to be careful in handling semi-finished products before bookbinding, and install storing shelves.

Enterprise ID: L011 (Decorative paper and flame resistant decorative board manufacturing business)

This enterprise was established as a township enterprise in 1974. It was structurally reformed in 1998 and became a paper business group limited company. Principal products are decorative paper, raw paper and flame resistant decorative boards. The number of employees in 1999 was 350 persons, and the proceeds were 90 million Yuan. It acquired ISO 9002 certification in 2000.

At a glance, this enterprise is free from conspicuous defects in the quality, technology, environmental measures, etc. They neither have any problems in particular in the financial aspect. As viewed from the viewpoint of the market development, the present market is composed of enterprises such as interior finish work enterprises and shipbuilding plants. However, there is a possibility that products of this type are consumed in the home use hobby market such as DIY market participated by private individuals when the standard of living rises in the future. It would be helpful to study possibility of going into the markets including department stores, supermarkets, DIY stores, etc. by diversifying product types and size for home use. To expand such markets, it would be necessary to implement advertising to general consumers through mass media such as TV, newspaper and magazines.

Enterprise ID: L012 (Electrolytic capacitor aluminum case manufacturing business)

This enterprise was established in 1973 and just converted to a limited company in June 2000. Dedicated to deep drawing of aluminum sheets for producing aluminum cases for electrolytic capacitors, this enterprise is a typical metal working business. It has the largest (40%) share in this field in China, and exports products to Japan, Korea, Taiwan, Malaysia, U.S.A. and other countries. The number of employees is 280 persons. The present production system is 24 hours in three shifts, but the production cannot catch up with the demand, which is increasing continuously.

The issues they face now are increase of production of present products and development of new products. We proposed shortening of mold replacement time as a measure to increase of production. But since the present equipment and labor force are fully used, the production increase that can be expected would be 10 to 20%. However, when the new factory that is currently under construction is completed, a production increase of a considerable extent will become feasible.

Regarding development of new products, we think that expansion of operations should be considered by placing orders for processing to outside manufacturers with the present technology and equipment fully utilized rather than thinking of entirely different products or fields of

technology. We proposed to introduce not only the products but also their technology using home page and others for that purpose.

Enterprise ID: L013 (Decorative case, advertising panel, etc. printing business)

This enterprise started as a private enterprise in 1995. The proceeds in fiscal 1999 were 13.4 million Yuan and the number of employees is 130 persons. Principal products are printing of decorative cases for tobacco and liquor, and copying of advertising boards, road and railway signs and great pictures (oil paintings). This is a venture business that is rapidly expanding business with vigor. But in the current situation, creation of the system as a business has not yet been able to catch up with the growth. Being a one-man business led by the top, the human resources supporting the top are insufficient, and business management and production control structure are immature. As the systematic business management is needed accompanying expansion of the business, upbringing of human resources for this purpose is the largest issue.

Enterprise ID: L014 (Lamp bulb and fluorescent lamp manufacturing business)

This enterprise was established in 1958. It was converted to a limited company in January 2000 but 60% of the shares are still possessed by the state government. Principal products are ordinary lamp bulbs, fluorescent lamp tubes, halogen and sodium lamp bulbs, special lamp bulbs, etc. The proceeds in fiscal 1999 were about 100 million Yuan and the number of employees is 1,800 persons. Compared to other enterprises in the same trade in China, the quality is high and the top position has been kept for ten years. They sell one third of their products in each of China, Hong Kong/Taiwan and Europe/North/South America. The share in Zhejiang Province is 60% and the share in whole China is around 2%.

The constitutional predisposition of the former state-owned enterprise still remains positively, and reshuffling such as drastic organization reform and personnel relocation is needed to break such constitutional predisposition. It is considered that who worked together for this enterprise for a long time can hardly accomplish such a job. Therefore, it is an idea to ask for help of a foreign management consultant.

Other problems that they have are; surplus personnel, living compensation money to those who are standing by at home and bearing of medical expenses for retired employees. As these problems are big enough to press management and are common to former state-owned enterprises, they cannot be solved by a single enterprise. The only solution is to urge the government and administration to implement reform to solve these problems shared by all the former state-owned enterprises.

The above description is a part of advice given to studied enterprises other than model enterprises at the time of visit study and described on diagnosis cards.

2 Diagnosis and guidance to model enterprises

We selected the following two enterprises as model enterprises out of fourteen visit study enterprises in the field of light industries.

Enterprise ID: L001 (Glass bottle manufacturing business)

This is a medium-scale enterprise that was converted from a state-owned enterprise to a limited liability company. It belongs to the equipment industry as the category of business. The problems they face are a high defective rate and excessive volume of product stock. At the same time, it needs to tackle breaking away from the constitutional predisposition of former state-owned enterprise, which remains because it has not been long since the reform was made.

Enterprise ID: L009 (Ballpoint pen manufacturing business)

This is a limited company of private configuration. Although it is a medium-scale enterprise, it is rather close to small-scale. They handle production of consumable parts through their assembly. They have large issues in production control and the stock control in particular. This is a representative enterprise of the area that gives large influence over the local industry.

We made deliberation with the counterpart in charge of light industries prior to selection of these two enterprises. The counterpart indicated the same enterprises as candidates, and a consent was reached.

(1) Model enterprise ID: L001 (Glass bottle manufacturing business)

Visit to this factory was made seven times in total. The first visit was for visit study for simple diagnosis. Three visits were then made for diagnosis and guidance during Phase 1 field study after this enterprise was selected as a model enterprise. Three more visits were made again for diagnosis and guidance during Phase 2 field study. This enterprise was briefly introduced in Table 7.7.1 "List of enterprises visited and studied", but the current situations and problems of this enterprise are described in further details here as a model enterprise of diagnosis and guidance.

The information that was acquired through total of seven visits is as follows:

1) Overview of the enterprise

a) Structural reform

This enterprise was established as a state-owned enterprise in 1951 and reborn as a limited liability company in June 2000. Only half a year has passed since then, and both of executive officers and employees have not come off the state-owned enterprise consciousness. Eight percent (8%) of the capital stock of 20.5 million Yuan is possessed by the state government, and the rest is held by the executive officers (10%) and employee shareholding system (82%).

b) Products

[1] Glass bottles. About 400 types including beer bottles, cosmetics bottles and medicine

bottles The state government recommends drip infusion bottles made by this enterprise, but the enterprise belongs to the category of late-entered group regarding beer bottles. The proceeds in fiscal 1999 were about 80 million Yuan and the production volume in the last three years was 49,700 tons (1997), 52,300 tons (1998) and 46,900 tons (1999).

[2] Compound color paper, various wrapping paper, and plastic coated paper: With a compound color print factory merged in 1995, these products have been sold since then as products of this enterprise. The proceeds in fiscal 1999 were about 40 million Yuan and these are important products occupying about one third of gross proceeds.

It was determined to limit improvement target products as a model enterprise of this time to [1] Glass bottles. Thus, description is mainly made on glass bottles below.

c) Enterprise organization and number of employees

Fig. 7.7.1 shows enterprises organization chart. Of about 1,200 employees, those who are directly engaged in production are 629 persons who belong to the production division. Of these 629 persons, those who are engaged in the production of compound color paper are only 75 persons (12%), but the proceeds of compound color paper occupies about one third of all as stated earlier, and it appears that the productivity of the compound color paper sector is extremely good.

The enterprise organized a project team this time for improving the enterprise. The team is composed of seven members in total from general manager's office, technology assurance division and market development and sales departments, and is led by vice general manager in charge of production.

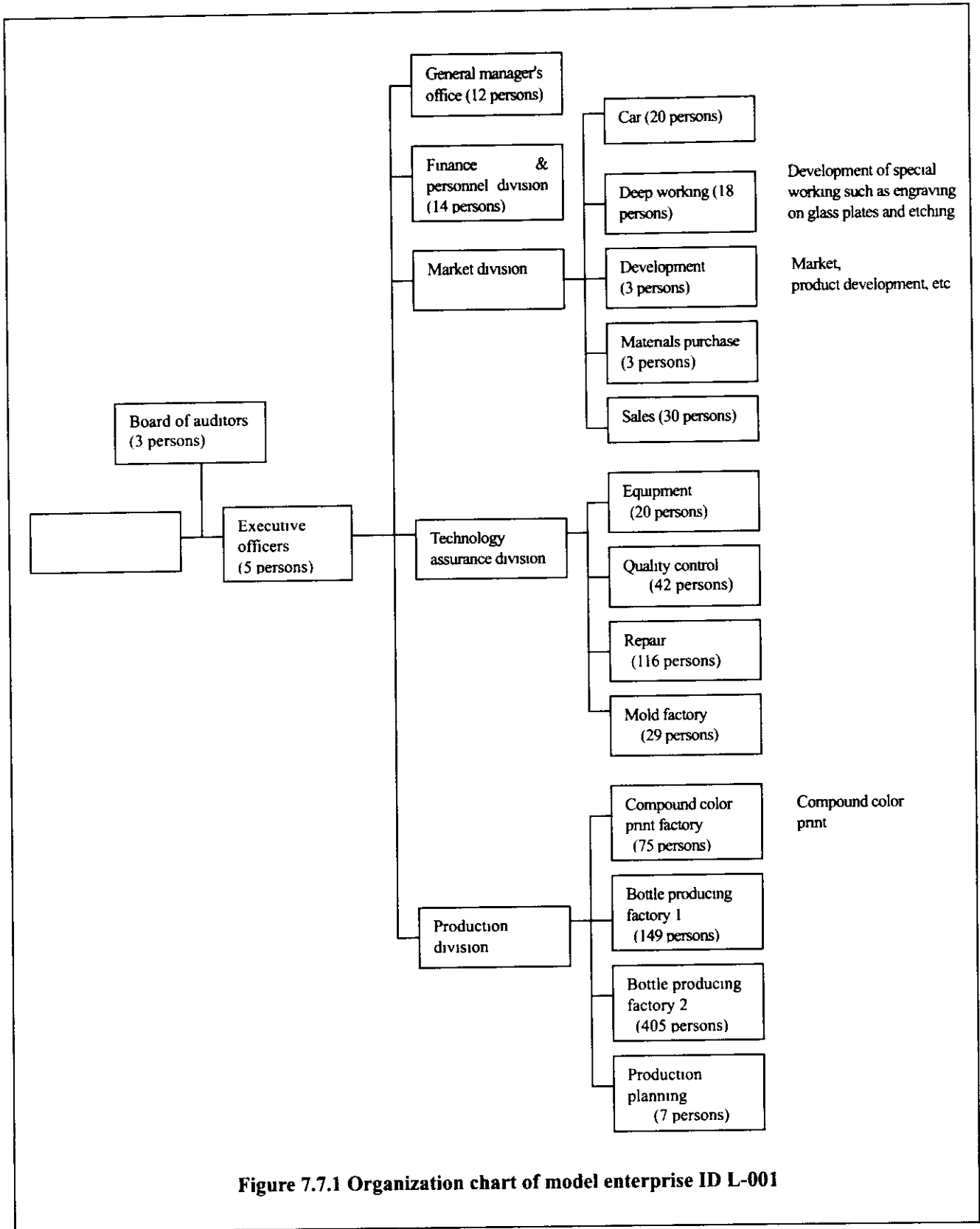


Figure 7.7.1 Organization chart of model enterprise ID L-001

d) Market and sales

Looking at the market of bottles, the enterprise sells 60% of bottles within the province and 40% in other provinces. They are also exporting bottles to a minor extent. The market is of highly competitive and the profit ratio is gradually decreasing. Bottles for medicines, which are products of this enterprise from the beginning, have competitive power, as the state government recommends them. Competitors of bottles for cosmetics are increasing, but they still have competitive power if they continue quality improvement. Beer bottle are late-entered products and they put emphasis for increasing the share in the market. But there are problems in the quality after delivery to customers.

e) Principal problems (Item subject to short-term improvement)

The largest problem raised by the enterprise side during the first visit study was that the defective rate of bottles is very high. The study team, on the other hand, pointed that there was an excessive volume of products in stock and that the method for storage and method for packaging are no good. It was determined to adopt one out of these items as the item subject to short-term improvement, and so diagnosis was implemented with focus on these three points.

2) Information related to problems and narrow-down of subjects of improvement

a) Information related to problems

Problems heard from the enterprise during the first visit study and detail information acquired in relation to problems during the second and subsequent diagnosis and guidance studies are as follows:

[1] The defective rate is as high as 5 to 10% at average. There is a quality variation.

- The defective rate is in infinite variety by the bottle shape, size and type. For example, it is about 1% with small bottles and it may be as high as 40% with large bottles. Furthermore, it may be as high as 40 to 70% with bottles of irregular shapes. Such a high defective rate often occurs during the initial period after a lot change (after replacing the mold).
- Orders of small production lots increased and replacement of the mold is frequently required. This is another causal factor for occurrence of defective bottles. The mold is normally replaced and repaired after every 200,000 bottles. One lot of an order is usually 200,000 to 500,000 bottles, but it may be as small as 10,000 to 50,000 bottles, and in addition, the delivery time is extremely short.
- The types are about 300 by differences in shape and size alone, and there are about 400 types including differences in color. Of these different types, top ten types occupy 80% in quantity, and the total of first and second types occupy 30 to 50% of all.
- The defective rate caused by breakage, etc. during transport is around 1 to 10%.

- The ratio of scrap glass (cullet) to recovered raw materials is 40 to 45% of brown bottles and 30 to 40% of transparent bottles

Almost no troubleshooting for occurrence of defective bottles and no corrective measures for improvement have been taken. But they have an experience of implementation of improvement using the QC technique against defects (cylindricity, verticality) in 500 cc drip liquid bottles in August through November 1998. They conducted education and training programs on QC technique at the occasion of acquisition of ISO 9002 certification in 1998.

The report on this improvement indicates, as the procedure, clarification of the purpose, creation of a project team, execution of factor analysis, acquisition of data as well as the effect (numeric values that appear to indicate the effect). However, there is no description regarding the procedure or measures for improvement, which are the most important

- There have been defective products for a long time but the enterprise did not care about it, for the tolerance (5%) of the defective rate specified by the state government (customer at that time) on products was satisfied. However, it became a subject that cannot be ignored after introduction of the market economy, which requires severer standards.
- It is considered that the cause for defects in drip liquid bottles lies in the old equipment, which has been in use for over four years. The defect problem they are currently facing is cracking at mouths of beer bottles. Since such cracking can be hardly recognized by visual inspection, they want to introduce inspection equipment and they are looking for second-hand equipment instead of a new one that is quite expensive.
- Oversight of defects may be as high as 5%.
- Defective products found as a result of inspection at the first factory are directly disposed to the waste yard, and such a habit does not permit to measure the quantity of defective products or check defect types found as a result of inspection. At the second factory, defective products found as a result of inspection are once collected in a handcart before disposal

Besides these problems heard from the factory side, the study team pointed the following two points from such a viewpoint that it is important to increase the commercial value under the market economy, as a result of inspection of the factory.

[2] Problems of excessive volume of products in stock and the method for their storage

- The present volume of stock is about 15 million bottles, which is equivalent to a little less than the approximate volume of yearly production. The production rate is about 50,000 bottles per day (Calculated to be equivalent to the production of 300 days.)
- We were told that the present stock does not represent the normal state because introduction of a new furnace is being planned and it is necessary to secure a stock in preparation for

shipping during the period (about two months) to be needed for installation of the new furnace. But the stock in such a large volume is still abnormal.

- The places of storage are exposed to the open air. A simple building of almost the size of a large-size gymnasium is provided as the place of storage of products. It has a roof and simple enclosure around it. However, there is no passage inside and the space is filled with products. We calculated by foot measurement that this warehouse could hold bottles of about six months production quantity. In this state, it is not possible to conduct inventory taking, proper shipping or even to take bottles out of the warehouse. What is worse, bottles that could not be stored in this building are stacked up in an open yard located by the factory. Some of production date of these bottles is over one year ago. Hemp bags in lower tiers are dirty and partly corroded. Re-packaging would be required when they are sold.

[3] Improvement of packaging method

- Hemp bags, carton (corrugated box board) boxes and bulk packaging are used as materials for transport and packaging. Which one is used depends on the types of bottles. But actually, hemp bags are overwhelmingly used to reduce the packaging cost. It is known that the rate of occurrence of defects during transport is less when carton boxes and bulk packaging are used. But since the cost for such packaging is high, hemp bags are used in almost all cases.
- Also, with the fact that customers are in medicine, beverage and food industries taken into account, we emphasized the importance of packages and package style to add an impression of the high grade to the products at the time of sale.

b) Narrow-down of item subject to short-term improvement

Of three problems described above, since production of bottles is an equipment industry, it is hard to reduce the production with running of the melting furnace suspended. Therefore, it is difficult to reduce the stock of products unless the amount of sales increases, and improvement effect cannot be expected in a short run. In addition, with introduction of a new furnace is planned in the near future, it is necessary to secure a stock in preparation for shipping during the period to be needed for installation of the new furnace, and the present stock does not represent normal state because of this reason. The problem of packaging is a problem of market needs, selling price and cost, and this theme should be taken care of mainly in the field of marketing.

It was determined to adopt reduction of process defective rate, upon deliberation with the factory side, because of these reasons.

Of course it is hard to improve the defective rate in a short period of two to three months, but we thought it would be possible to adopt it as a theme of a short term, if the procedure for solution is determined and a part of such a procedure is to be handled.

It was also determined to adopt reduction of the stock volume and other problems as items subject to medium- and long-term improvement.

3) Defective rate improving plan and trial

The factory vaguely recognizes the fact of the high defective rate but in the current situation, they do not have concrete data as to what kinds of defects of what types of bottles are occurring. Therefore, it was determined to start with study of the realities first of all. That is, to check defects among scrapped bottles that were judged to be defective as a result of inspection, to quantitatively seize defects by bottle type, to find out causes for defects and to take corrective measures.

a) Procedure for improvement

The following procedure is taken to improve the defective rate.

<Short term (up to the end of February, 2001)>

- [1] Collection of data on defects by type
- [2] Seizure of characteristics and analysis of factors
- [3] Re-confirmation of inspection standard and provision of guidance

<Medium and long term (completed between March, 2001 and the year end, 2001)>

- [4] Analysis of correlation with mold, inspector, material composition, melting furnace, cooling furnace, etc.
- [5] Formulation of improving plan
- [6] Experiments
- [7] Start of production

b) Method for implementation of short-term improvement

- [1] To sort and total scrapped products, which were judged to be defective during the final inspection of the process, by cause for defects, using standardized data acquisition form.
- [2] To make analysis based on results of totaling, to examine causes for defects and to take corrective measures.
- [3] To adopt the north-south line of No 4 furnace in the second factory as the object production line, as it is easier to collect defect samples from this line
- [4] To select products of large economical effect such as products of high defective rate and products of large production quantity and products of extremely high defective rate, as the object products, although the production schedule of the factory must be taken into consideration
- [5] It is desirable that experts of inspection identify the defect type

c) Data collection, factor analysis and results of implementation of corrective measures ... See the appended material "Diagnosis Case No 12 Improvement of glass bottle defective rate".

We collected the data eleven times in total during the three-month period beginning in late

November 2000 when Phase 1 field study terminates and terminating in late February 2001 when Phase 2 field study is in progress determined corrective measures against causes, which were clarified with relative ease, and successfully reduced the defective rate by about 7% at average by implementation of these corrective measures.

Details of the method, results, examination, considerations and corrective measures are described in the appended material "Diagnosis Case No. 12 Improvement of glass bottle defective rate". Also, the facts seized through trial of eleven times are as follows:

- [1] As a result of trial of data collection of eleven times, the total defective rate was 19.2%, but it largely varies by bottle type, ranging from 13.1% (lowest) to 30.7% (highest). We were told during the initial study that the defective rate was 5 to 10%, but it turned out that the actual value is considerably high.
- [2] Trial 11 was implemented with the same bottle type about three months after implementation of Trial 1. The defective rate dropped from 18.2% to 9.8%, thus proving achievement of reduction by 8.4%.
- [3] Defects are classified to more than twenty types. In practice, however, there is a large possibility that almost identical defects are counted as defects of different types due to differences in the judgment of inspectors and others.
- [4] Defect types largely vary by bottle type. A defect of the largest defect type is flow, and its percentage is about 17.6% in total, followed by wrinkle (17.5%), unglassy (6.6%), crack (6.1%) and sideways crack (5.2%). These five defect types together occupy 53%, which is more than a half.
- [5] Checking the defects by bottle type, it is apparent that defect types are largely biased to two to three types. With 250A type fluid infusion bottles of Trial 1, for instance, lean bottle and poor material alone occupy 65.6%, which is more than 2/3, of all the defects. Identically with 100B type fluid infusion bottles, wrinkle and crack alone occupy 78.7%. With 100D type bottles, crack and hollow occupy 50%. With 125 longneck square bottles, flow and crack occupy 81.1%. The defective rate can be improved to a considerable extent by conducting troubleshooting with these defects of two to three types on each bottle type and by implementing corrective measures.
- [6] When the south line and north line are observed separately, conspicuous differences are found between them by the bottle type and defect type. In Trial-1, for example, it is clear that defects such as lean bottle, poor material and bent are occurring at higher rates with the south line. Identically with 100D type bottles, defects such as string, wrinkle, bent, sandy surface, crack and flower spot are occurring at higher rates with the south line. Also in Trial 5, apparent differences are observed.
- [7] In many cases, it is not true that the same defect types appear to all bottle types, but they

appear with one to five bottle types. For example, lean bottle and poor material occur to 250A type fluid infusion bottles only, crack occurs to 100B type fluid infusion bottles, 100D type bottles and 500 type flower cut bottle with square ends only; and screw flow and thick seam occur to 500B type fluid infusion bottles only.

[8] On the other hand, defects that occur to many bottle types are string, sandy surface, bent, bubble, flow, etc.

Described above are facts obtained from trial of only eleven times. These alone indicate many new discoveries. In addition, we were able to estimate the causes for many of them, and we established corrective measures and implemented them, although tentatively. We consider that implementation of such corrective measures resulted in a drop of the defective rate by 7% at average as stated earlier.

4) Issues to be coped with in the future (mid-term improvement plan)

It is needless to say that further endeavors are required to improve the defective rate in the future. But in order that this enterprise survives and grows in the global economic environment under the market economy, it is necessary to improve and reform the following points.

a) Data acquisition and processing for improvement

Records of the above data being summarized, investigation of causes, corrective measures, etc are only kept by persons concerned on the recording paper or in their notebooks in the form of memo only and no in such way that enables anyone to understand the contents. Also, although it is a large progress that they learned to conduct sampling inspection during normal production and to record defect types and the defective rate, the inspection record is not kept in the way that could lead to improvement of the defective rate. Therefore, it is necessary to make contrivances for the appropriate record format so that it can be used as control data rather than a mere inspection record of normal production. It is also necessary to create a control chart.

b) Thorough pursuit of key products

Data acquisition of eleven times described above was made on the trial basis only, and real improvement of defective rate should begin from now on. Undiscriminating implementation of data acquisition on products of over 300 types is extremely labor consuming as well as time consuming. Therefore, it would be more effective if key products are determined and their defective rate is reduced to the best possible extent.

In order to decide the key products, we recommend to select products of five to ten types including products of large economical effect (products of large annual production, for example) and products to be focused on as the key strategic products in the future (beer bottles, for example) and also to include the products of extremely high defective rate (over 30%) in the object products, for the honor of the enterprise

It is also necessary to introduce the inspection equipment for detecting fine flaws, which can be hardly detected by visual inspection and which are problems with beer bottles at present.

c) Stabilization of quality

In order to stabilize the quality in a long run, it is necessary to construct a total quality control system for all the processes including designing, composition, weighing and mixing of raw materials, materials of the melting furnace and its structure, melting furnace, work room, structure in fore-hearth and temperature distribution in it, gob form of the feeder, molding machine, molds, structure and temperature control of annealing furnace, inspection, packaging and transport. Here is an example. Appended Chart 6 of appended material "Diagnosis Case No. 12 Improvement of glass bottle defective rate" shows the results of analysis made on the data for about ten months regarding SiO_2 , CaO and Na_2O , which are principal constituents of brown glass bottles of this factory. We can see variation of a considerable extent from it. It is necessary to examine if these values and ranges of variation are within the ranges of planned values and to control these values accordingly. These are constituents of products, but we must execute identical analysis with raw materials so that they are under proper control.

The product quality is stabilized when standards for processes including design standard are created and workers execute works in conformity with these standards. However, it is necessary to keep improving and modifying these standards. Engineers and managers are responsible for these works.

d) Upgrading of bottles

This enterprise wishes for upgrading (lighter and higher strength) of bottles but we were not able to give them any technical advice because none of the study team this time was an expert in glass bottles. It is therefore advisable to invite technical experts from both of inside and outside of the nation, dispatch trainees to advanced enterprises, acquire support from colleges and research institutes and strengthen the research and development structure of the factory.

At any rate, to improve the present defective rate has the top priority before upgrading. We want to emphasize that the current important issue is to avoid losing the support from the customers.

e) Reduction of volume of products in stock

We emphasized the necessity of reduction of products in stock at the beginning of the study and discussed its method. However, it was excluded from the items subject to the short-term improvement because of the reasons described earlier. It remains unchanged at present that reduction and control of products in stock are still large issues this enterprise should cope with.

It should be tackled immediately when recovery of the normal state is achieved upon completion of the melting furnace, which is currently under construction. Accurate production plans for each year, quarter, month and 10-day period should be made so that the products in stock are reduced to the optimum and minimum level and sure-footed inventory management is conducted. The

production control department is responsible for creating the production plans using the information from the sales department as the base.

The largest duty of the sales department is to accurately acquire production plan information of unspecified customers in addition to fixed customers as early as possible. Furthermore, constant efforts should be made to acquire information such as trend of each industry (beer, cosmetics, medicines, etc.), which is their customer. It is important to construct reliable relationship with customers and get cooperation of customers for the exchange of information and so forth.

f) Reduction of energy consumption

The ratios of fuel expenses and power source expenses to the manufacturing cost of this factory are high compared to factories of the same industry in Japan and modernized factories in China. This is an issue of which solution is demanded from national and global viewpoints of energy conservation and environment preservation, not only from the viewpoint of an enterprise, that is, reduction of manufacturing cost. It is necessary to reduce the energy unit consumption by adopting the thermal control technology.

g) Break-away from former structure

Company-wide movements such as construction of total quality control system will not be successful only by creation of an organization and allocation of personnel. It is necessary to organically tie inter-organizational functions. One of the largest defects of this enterprise is that the organization is compartmentalized and horizontal tie is rare. This is a feature that is common to all of former state-owned enterprises, and is not limited to this enterprise.

For reforming thinking of all employees in addition to executive officers and managerial staff, epoch-making organizational reform and personnel relocation are essential. We recommend, as an idea, to adopt job rotation as the basis of personnel management, except for specialist personnel. Particularly for the human resources, who are to become executive officers in the future, we recommend that they undergo the planned education and training program starting with the time of their entry and that they are rotated from one work venue to another in three to seven year periods. In addition, it is necessary to urge motivation of each one of employees by introducing human resources management technique such as target management.

h) Technology modification plan in fiscal 2001

This model factory brought up 49 items as items of technology modification in 2001, and they had already started to execute some of them. These items are classified into Group A (10 items), Group B (29 items) and Group C (10 items) in correspondence to the importance degree. They include many items related to subjects of improvement stated above such as improvement of product quality and improvement of defective rate. Listed below are examples of these items:

Group A

- Reduction of defective rate of production lines of the first factory by 5 to 10%.

- Development of technology for preventing flaws to drip infusion bottles
- Catching up with and getting ahead of advanced level in the nation in the quality of drip infusion bottles
- Reduction of air leakage from beer bottles to 2/1000 or less
- Achievement of energy saving by modifying No 1 furnace
- Implementation of programs of small-to-medium-sized enterprise promotion project

Group B

- Development of technology for energy conservation
- Study of smoke emission from fuel oil
- Prevention of end-cut mark
- Solving of problems involved in air cooling of molds
- Reduction of skipping of inspection
- Revision to various schemes accompanying structural reform
- Assessment of conforming ratio on the belt
- Establishment of cost control system
- Repletion of company education of engineering employees

Group C

- Increase of re-use ratio of non-conforming bottles in stock
- Improvement of mouths of drip infusion bottles
- Education of management department for wide use of computers
- Increase of computer usage rate for financing affairs
- Construction of new mechanism for marketing

Specific methods for implementing these items are not known, but from their plan, we can feel the sense of crisis and the enthusiasm for overcoming the crisis that this enterprise has.

(2) Model enterprise ID: L009 (Ballpoint pen manufacturing business)

Also with this factory, visit was made seven times in total. The first visit was for visit study for simple diagnosis. Three visits were then made during the Phase 1 field study after this enterprise was selected as a model enterprise. Three more visits were made during the Phase 2 field study. The information that was acquired through these visits is as described below.

1) Current situations of the enterprise

a) Overview of the enterprise

This enterprise was established as a private enterprise six years ago. The general manager was a

teacher of physics and he was also in charge of the in-school enterprise. The present building used to be a sewing factory before and was assigned to this enterprise. The present capital stock is 8.88 million Yuan and the number of shareholders is two. The organization consists of the international trade division, finance division, production office and general manager's office. Substantially, however, its atmosphere is such that the enterprise is one-man company of the general manager. The number of employees was 130 persons in 1999 and 150 persons as of the end of 2000. Among them, engineering college graduates are five to six persons and senior high school graduates are six persons. Thus, the educational background of employees is low as a whole.

b) Products and market

This enterprise produces low- and medium-grade ballpoint pens of about 100 types by the quantity of 40 to 50 million per year, that is, at the rate of 150 thousand per day. Of ballpoint pens of 100 types, the top ten types occupy about 80% in quantity, and the top type occupies its 40%. The proceeds in fiscal 1999 were 11.0 million Yuan and it was 10.6 million Yuan, that is, almost level off. Ninety percent (90%) of products are exported to Indonesia, Spain, U.S.A., etc.

c) Production

The raw materials are imported through an agent in Ningbo City, but raw materials made in the nation (Beijing) are also partly used. The ink cartridges are purchased from a specialized producer located in the same rural district. The cost ratio of raw materials and purchased articles to the total cost is 70 to 75%, and the ratio of personnel expenses is 10 to 15%.

Principal production equipment is plastics injection molding machines, i.e., three 150-ton units, one 100-ton unit, thirteen 30-ton units and two 160-ton units (newly installed). In addition, they have machine tools, electric discharge machines, ultrasonic welding machines, etc. for manufacturing and repairing molds. Molds are designed and manufactured in the company, but sophisticated molds are ordered to outside manufacturers. They use a 2-shift working schedule for the assembly process and inspection process and a 3-shift working schedule for the molding process. The payment at piece rates basis is adopted and the working environment is inferior. The vice general manager of the production office gives instructions for works using a production instruction sheet every morning.

Twenty persons conduct the parts inspection and assembly inspection. The defective rate is around one percent (1%).

d) Expansion plan

The present building has four stories and its total floor space is 3,600 m². Included in the building are raw materials storage, injection molding shop, assembly shop, inspection shop, parts stock storage, meeting room, office, etc. As of November 2000, the amount of injection-molded parts before assembly in stock was abnormally large and occupied nearly one half of the building in an extreme sense. Thus the building space is short, and they are planning to expand the factory

in an open space located adjacent to the company in the near future.

e) Business environment

There are about 350 ballpoint pen factories in this district and the town government throws strength into promotion of ballpoint pen industry as "Town of ballpoint pen manufacturing". Today ballpoint pen industry is an important industry that supports finance of the town together with textile industry. Almost all of these 350 factories were started from household industry some twenty years ago, and their majority are tiny enterprises. This model enterprise is of the top class among them in the scale and is the leader of the industry. We suppose that the propagation effect to the trade would be large if this enterprise implements their improvement plan successfully as a model enterprise

2) Information related to problems and narrow-down of subject to be improved

a) Information related to problems

Problems heard from the enterprise during the first visit study and information related to problems are as follows

- [1] They want to introduce CAD for mold designing to deal with market needs quickly, but no engineer is available. They need capable design engineers and CAD engineers for upgrading products in the future, but it is hard to employ them.
- [2] Human resources for management are short. As the history since the enterprise was established is short and it started from a household industry, there is no personnel capable of implementing modern enterprise management. Today general manager and vice general manager are implementing business management, production control and so forth, and they are based only on the experiences and perception.
- [3] They are not familiar with appropriate method for planned marketing. Today they are making efforts to secure the market by exhibiting their products at trade fairs, etc. using catalogs as the base material.
- [4] The present means of information communication are telephone, fax and E-mail. They recently opened Internet home page, but it is not functioning well.

The problems pointed by the study team after hearing and factory inspection at a later date are as follows.

- [5] The quantity of raw materials, recovered materials and parts in stock is so large that one half of the factory is occupied by these things. In addition, these articles are piled in a jumble and that makes it difficult to bring them in and out. No inventory taking is performed.

Explanation made by the enterprise against this is as follows:

- The present production per day is 100 thousand, and materials of about 700 kg (14 bags

containing 50 kg each) are needed. The stock is not necessarily large.

- The stock of a certain extent is unavoidable because orders vary. It is hard to largely reduce the stock. Although it appears that goods are piled in a jumble, they are sorted out in order.
- Since this building was originally a sewing factory, it is hard to install shelves in view of the strength.
- Two persons are engaged in handling of materials and parts. They come to the factory at 5:00 in the morning and work until 6:00 in the evening. Although we think sort-out of the stock is important, they are too busy to do it.

[6] Statement of manufacturing cost is not created. Financial statements do not necessarily indicate real financial conditions of the enterprise.

[7] The working environment is inferior, particularly at the assembly shop. Workers eat lunch at the shop.

b) Narrow-down of subject to be improved and advice on other subjects

The study team firmly stressed that to reduce the stock (products, goods in process, raw materials) is the largest subject for the enterprise among these problems stated above, and determined to adopt it as the issue subject to short-term improvement.

Regarding problems of marketing, information relevant problems and problems of mold engineers, we took to the enterprise a marketing expert and information expert from the policy team and also took a CAD expert from the CAD application development center of Zhejiang Province, discussed in a meeting attended by persons concerned of the town government. These experts gave advice at this meeting. Details are described in the report of each expert, but the summarized minutes are as follows:

<Marketing>

- To change the management strategy from the former low-grade pen oriented strategy to the strategy to add medium grade pens of higher added values. Furthermore, to develop pens with characters that permit use of stationary selling channels and new products other than ballpoint pens. Since present products involve many manual works, to develop products that make use of this feature is also an idea.
- To implement positive marketing by sales representatives of the enterprise with export destination nations directly observed by them, instead of depending on buyers alone.
- To expand sales channels by keeping close contact with overseas customers through E-mail and others, instead of depending on only trade shows and exhibitions.
- To attach importance to education and training for adding adaptable fighting potential to the newly employed persons who speak English.

<Information>

- Transmission of information and publicity by home page are effective for overseas business. However, E-commerce still involves many problems, and it had better to see how things go.
- It is too early to judge that the result of the home page, that was opened only three months ago, is no good. It had better to see how things go for at least a year.

<Use of CAD for mold designing>

- It is recommended that education and training of CAD technology be implemented as tied with colleges and public institutions, with a private technology center instead of by a single enterprise.
- It is desirable to introduce a 3-dimensional CAD from aspects of design efficiency and quality.
- The amount of initial investment is around 500 thousand Yuan. We proposed to collect funds and fees for education and training from participating enterprises as the funds required for operation.

3) Item subject to short-term improvement (sort-out of the stock and reduction of amount of stock) .. See appended material "Diagnosis Case No. 16".

a) Seizure of present amount of stock

To seize the present amount of stock, the study team, CP and the enterprise jointly implemented simple inventory taking and counted the things in stock. The results are as shown in the following table.

Table 7.7.3 Present amount of stock and target amount of stock (unit: bags)

Kind	Place						Target	Stock reduction (10 thousand Yuan)
		1F	2F	3F	4F	Total		
Stock of completed products		—	—	100	20	120	150	+0.9
Stock of parts		—	1100	670	950	2720	1000	-68.8
Stock of recovered materials		350	—	—	60	410	200	-4.2
Stock of raw materials		350	—	—	433	793	200	-13.0
Total		700	1100	770	1473	4043	1750	-85.1

Note: Stock reduction is what was converted into monetary value, assuming the price of one bagful of goods as 300 Yuan for completed products, 400 Yuan for parts, 200 Yuan for recovered materials and 330 Yuan for raw materials.

Stock of completed products As production is made to orders, the possibility that the products are accumulated as stock is minor. It is scheduled that this amount will be shipped shortly. The amount is less than anticipated. Keeping them in order only becomes the issue.

Stock of parts If it is assumed that one bag contains 50 kg and 700 kg (14 bags) are consumed daily as stated earlier, the amount of stock indicated above is for 190 days. This amount is more than excessive, and it is necessary to sort them out and keep them in order so that they are ready for use.

Stock of recovered materials: Since it six to eight bags are consumed daily, the current amount of stock is for about two months. It is necessary to sort them out and keep them in order for ready use.

Stock of raw materials: Since about 40 bags are used per day (24 hours, 3 shifts), the current amount of stock is for about 20 days. The delivery time after placement of orders is extremely short. As these raw materials are dependent on market conditions, increase and decrease of the stock within a certain range are considered to be unavoidable

The target figures are determined temporarily by the diagnosis team with above conditions taken into account. It is judged that they are rather reasonable figures. Works in process (parts) and recovered materials (pouring gates used at the time of injection molding) are problematic in view of the volume.

b) Implementation plan

The study team created and brought an implementation plan, but the enterprise side had already autonomously created a draft of implementation plan at the time of the fourth visit study. Since the contents of their plan were at a higher level than those of the plan created by the study team, it was determined to adopt the plan on the enterprise side. Its contents are as follows:

1. To implement total and thorough inventory taking of raw materials through parts, and to create incoming-outgoing ledger for stock of raw materials and parts. The warehouse staff keeps record in this ledger daily and settles the amount of stock at the end of the month. The quantity in the ledger should be matched with the actual quantity.
11. To install shelves of 11 m in two rows first of all.

- Shelf dimensions L11m x W0.6m x H0.9m , materials angle steel.
 - Parts should be put in plastic cases (L0.6m x W0.42m x H0.37m) and these plastic cases should be placed on shelves. 150 plastic cases can be accommodated per row, and 300 plastic cases in two rows.
 - The budget is 20 thousand Yuan.
- 111 The parts, which were found to be un-usable as a result of inventory taking, should be immediately crushed and re-used as recovered materials. Usable things should be used early to reduce the stock. At the same time, raw materials and parts should be placed at separate locations to prevent them from being mixed together.

The above three items are to be completed by the end of December 2000.

c) Results of implementation

During the period of three months from late November 2000 to middle of February 2001, this enterprise created an implementation plan stated above, that is of a level that is on a higher level than what was proposed by the study team. They created shelves by the end of December, purchased sturdy cases made of plastic instead of cartons, and completed storage of parts during the period from early January to the middle of February. Funds of about 60 thousand Yuan were needed for this work. They were able to recover funds of about 500 thousand Yuan by converting dead stock into recovered materials, by producing complete products by adding parts to semi-finished goods, which were in dead stock due to shortage of parts, and by selling thus produced complete products.

They established a system that permits daily seizure of stock of parts by inputting daily incoming and outgoing of parts were input to a personal computer. A full-time computer engineer was employed for this purpose. Comparative photos indicating before implementation and after implementation are shown in the appended material "Diagnosis Case No. 16".

4) Issues to be coped with in the future

a) Examination of optimum volume of stock

It appears at a glance that management of stock of parts was successful. However, it still is in the stage of rearrangement and sort-out. Real management is not yet done. It is necessary to seize the optimum amount of stock and to further reduce the amount of stock. As the method to decide the optimum amount of stock of parts, we discussed the method to apply the fixed quantity ordering method, which is a technique for management of orders for purchased goods, to parts production instructions. In addition, as the method to reduce the number of types of parts, we discussed reduction of the number of types of parts by standardization of parts and by common use of parts.

As products are produced according to orders placed by the customers at present, product types

are over one hundred types and the number of types of parts is also large. It is necessary to reduce the number of types of parts by attempting common use of parts through standardization of parts with products of large quantity production selected as main products based on the results in the past. Furthermore, it is desirable to have such a positive attitude to develop products of their own brand and to positively sell these products to customers.

b) Reduction of stock of raw materials

Management of stock of parts went better than expected as described above. The next step is management of stock of raw materials. Regarding management of stock of parts, control can be achieved by a production order to the injection molding shop in the company. In the case of management of stock of raw materials, however, it is necessary to pay attention to the correlation between the length of time from placement of orders for raw materials to acquisition of raw materials and the delivery time of products to customers.

For customers, who are fixed to a certain extent, it would be possible to seize orders based on results in the past two to three years. Also regarding the delivery time of raw materials, it is considered to be possible to seize it, if market conditions are checked and information is exchanged with agents constantly.

There is no problem with stock of products at this factory at present.

c) Seizure of manufacturing cost and cost reduction

This enterprise is not creating statement of manufacturing cost at present, and it appears that the general manager determines quoted prices making a judgment from results in the past. For a manufacturing business, constant seizure of the manufacturing cost of each product is important, and measures for cost reduction cannot be created unless such manufacturing cost is used as the base. We explained contents of statement of manufacturing cost table and how to create this statement. Also, we explained manufacturing cost indices of small-to-medium-sized enterprises in the same trade of Japan with materials distributed. In addition, we explained the meaning of the simple diagnosis sheets on this factory and made a comparison of indices with small-to-medium-sized plastics parts manufacturers in Japan.

d) Product development and improvement ... See appended material "Diagnosis Case No. 4".

We picked up 40 products of this factory during the Phase 1 field study and brought them back to Japan. We conducted questionnaire survey on these products with monitors, and then discussed about the design, quality, reliability, ease of use, volition to purchase, purchasing layer, ink cartridge conditions, etc. based on the results of the questionnaire survey, as a technique for product development and improvement. It is also helpful to implement the survey of various consumer layers in the nation and to use the results for reference for product development and improvement.

Besides upgrading of products, contrivances such as marking of customer name, upgraded

packaging, conversion to gift goods and establishment of own brands can be made to increase added value and to expand the market, as methods for market development.

Furthermore, the orientation of product development is different depending on the basic management strategy, that is, whether this enterprise intends to keep growing with low and medium grade ballpoint pens or high-grade products are targeted

e) Improvement of quality

Improvement of mold manufacturing technology is essential for enhancing the product quality. Upbringing of skilled polishing workers is necessary particularly in the final mold finishing process

f) Upbringing of human resources and transfer of authorities

The history of the enterprise is short since it was established and young human resources have not yet been brought up, the majority of decisions are made by the general manager and vice general manager. It is necessary urgently to educate human resources to become the backbone, to transfer authorities to them for conduct of systematic business management.

3 Regional industry (ballpoint pens) promotion seminar and ballpoint pen industry in Fenchui district

(1) Holding of seminar

1) Preparatory study

We were requested to hold a seminar in Tonglu prefecture Fenchui district for growth of ballpoint pen industry, which is the regional key industry of Fenchui district, and we held a seminar under cooperation with members of policy group and members of diagnosis group. Prior to holding of a seminar, we conducted a visit study at a number of enterprises besides the model enterprises as well as a questionnaire survey with thirteen enterprises to study problems these enterprises are facing and themes they want to learn at the seminar, and we added the results to the contents of lectures at the seminar. We included the manufacturer of ballpoint pen ink cartridges, which is the only manufacturer of ink cartridges in this region.

2) Results of questionnaire survey

The results of questionnaire survey (13 enterprises) are as follows:

a) Future plans and targets of the enterprise (multiple replies)

- Improvement of quality 13 enterprises
- Improvement of productivity 12 enterprises
- Development of new products 12 enterprises
- Expansion of market and business 10 enterprises

- Equipment investment 8 enterprises
 - Improvement of working environment 8 enterprises
 - Improvement of living and welfare 6 enterprises
- b) Funds and finance
- Cannot find appropriate supplier of loans for working capital and equipment funds .. 4 enterprises
 - Cannot earn profits due to severe market conditions.. 2 enterprises
 - Cannot earn profits due to high prices of parts and materials and high personnel expenses ... 1 enterprise each
 - Don't know the method for seizure of manufacturing cost . . 1 enterprise
- c) Human resources and technology
- Morale of employees is low ... 11 enterprises
 - It is not possible to recruit good human resources . . 8 enterprises
 - No leader for company training or method is not known .. 2 enterprises each
- d) Equipment and working environment
- Don't know the method for computerization of production control ... 5 enterprises
 - Mechanization delayed and productivity is low ... 3 enterprises
 - Poor working environment ... 3 enterprises
- e) Market, sales and distribution
- Cannot create production plan or stock plan due to unstable market ... 8 enterprises
 - High distribution cost prevents reduction of manufacturing cost .. 4 enterprises
 - Don't know the method for stock management ... 4 enterprises
 - Don't know the method for sales or tools ... 3 enterprises
- f) Desired seminar themes
- Development of market ... 12 enterprises
 - Business management .. 9 enterprises
 - Quality control .. 8 enterprises
 - Company education of human resources . . 5 enterprises
 - Process control and stock management ... 2 enterprises each
- 3) Seminar holding date, place, participants, etc.

- Date and hour: February 23, Friday; 09 00 - 15:30
- Place: Invitation hall of Tonglu Prefecture government
- Participants: About 80 executive officers of ballpoint pen enterprises, Hangzhou City's counterparts of this study, executive officers of the prefecture government .. Over 100 participants gathered and the seminar was active.

4) Seminar themes and lecturers

Themes and lecturers were as follows.

1. Current situations of ballpoint pen industry of Japan (member of the study team in charge of light industries)
2. Strategy for small-to-medium-sized enterprises to expand the market and support from local government (member of the study team in charge of marketing)
3. Upbringing of small-to-medium-sized enterprises and roles of local government (member of the study team in charge of management and technological support)
4. Production control with focus on stock management (member of the study team in charge of production control)
5. Case of stock reduction (general manager of a model enterprise)

The general manager of a model enterprise is also the chairman of Prefecture Ballpoint Pen Manufacturers' Association. We requested him to speak his experience regarding method for implementation of stock reduction, expenses incurred and effects.

(2) Ballpoint pen industry in Fenshui district

Many farmers were relieved from agriculture, with which they were bound to land, since reform and they were engaged in industrial production and tertiary industry. The ballpoint pen industry in Tonglu Prefecture made growth from the beginning of 80's to 90' with Fenshui District as the center. Today over 420 households (of which 360 households are located in Fenshui District) are engaged in pen manufacturing business 21 out of them have been converted to limited liability companies. Four companies among them have acquired foreign trade export right. The number of employees in the whole pen manufacturing industry is over 11,000 persons

Production in 1998 through 2000 made steady progress as shown below.

Table 7.7.4 Indices of ballpoint pen industry in Fenshui District

	1998	1999	2000
Gross production amount (10 thousand Yuan)	26500	35200	56000
Gross production amount (10 thousand Yuan)	2700	5100	10000
Tax payment (10 thousand Yuan)	2500	3560	5000

Furthermore, Fenshui District Ballpoint Pen Manufacturers' Association was established in April 1998 as centered by pen manufacturers of Tonglu Prefecture, and this association made contribution to growth of the trade as follows:

- [1] Executed upgrading of the association itself and strengthened the unity of the industry Members of the ruling circle were constituted by selecting one chairman and two vice chairman by election. Discussed the target of growth in the future and exchanged information for improving the product quality and for developing brand products.
- [2] For change of information, interchange was made with China Pen Manufacturers' Association, Shanghai Pen Manufacturers' Research Center and pen manufacturing industry of Wenzhou Prefecture, and thus elevated recognition of Tonglu Prefecture.
- [3] Positively participated in Guangzhou Spring/Autumn Trade Fair, Xihu Fair, Lonzhou Trade Fair, Yiwu Small Products Expo, Hong Kong Stationary Trade Promoting Fair and so forth, which are held every year.
- [4] Constructed ballpoint pen industrial complex and ballpoint pen Fenshui market under cooperation and support of the prefecture government Furthermore, established Fenshui Ballpoint Pen Manufacturing Technology Development Center under the cooperation of Zhejiang University.

The land for the industrial complex was created in November 2000. The land area is 300 mu (1 mu = 660 m²) and entry of 31 enterprises has already been determined. Twenty out of them are ballpoint pen manufacturing enterprises. It is scheduled that Fenshui market construction work will start in April 2001 and will be completed on October The land area is about 6,600 m² and the building area is 14,000 m² A comprehensive merchandise shop and a ballpoint pen dedicated shop (5,000 m²) will be included.

It is intended that Technology Development Center will lay emphasis in product development with focus on mold processing technology, CAD technology in particular.

7.8 Consulting Guidance on Marketing

7.8.1 Enterprise ID M-002

(Machinery and electronic industry: Metal bearing manufacturing)

(1) Requests of consulting guidance from the enterprise at the primary local survey

The enterprise asked for consulting guidance on the following matters:

- ① The enterprise has unpaid accounts receivable incurred during its government-owned period.
- ② To compete with private businesses, the enterprise has a policy to produce high value-added bearings for motor car use.
- ③ The enterprise has constantly some troubles between the production and sales departments. Lack of positive action in the production department often causes delivery delay. This problem is common among government-owned companies. Poor incomes may partly inhibit positive actions of labors in production shops.
- ④ The enterprise has now problems on the performance measuring method and reward for salespeople.
- ⑤ Counterfeit products with the enterprise's brand are distributed in the market. Many of those products are components for farm machinery used in China and Southeast Asia. As a countermeasure against large damage caused by the counterfeit products, the enterprise has a plan to retrieve the market by price-down.

(2) Contents of the consulting guidance

- ① Giving advice on importance of customers' credit management to avoid incurring new unpaid accounts receivable, we taught the method to set customers' credit exposure limits and explained with emphasis on necessity to observe the customers' business situation after the setting.
- ② We explained the importance of improving product quality, differentiating products, and price-competitiveness through cost reduction as the fundamental methods to avoid price-competition resulting from excessive competition.
- ③ For changing the business climate since the age of a government-owned company, we proposed innovating the organization, expanding the market-facing sales department, and positioning it so as to be competitive with the production department.
- ④ As for the performance measuring method and reward for salespeople, we presented some examples of the incentive measures in Japan with results management applied: a person with excellent merit gets more-than-normal bonuses twice a year according to the degree of his final result; his basic pay amount is annually raised more than normal; and his promotion in rank becomes faster than others. Percentage pay is seldom applied to company staff in Japan.
- ⑤ We explained that eliminating counterfeit products is difficult and differentiating products through improving their quality is effective.

(3) Expected results

- ① To avoid incurring new unpaid accounts receivable by setting the customers' credit exposure limits and improving the customer management
- ② To configure such organization that the sales department, as the representative of the market and customers, can make the production department cooperate by expanding the sales department and improving its position through innovation of the organization.
- ③ To establish rules of incentive methods for the salespeople.
- ④ To take measures against price-competition and counterfeit products by improving the product quality.

(4) Results of the consulting guidance ascertained at the secondary local survey

① Problem on unpaid accounts receivable

Based on our previous guidance, the enterprise is working toward a solution to this problem. For example, the enterprise has been starting to relieve the problem by taking measures to receive 50% of product charge payment or a guaranty on delivery. However, quick improvement is undesirable, because the problem contains social factors and must be solved taking customer-side situations in consideration.

② Relation between the sales and production departments

The enterprise has just started to review how to cooperate with the two departments on the quality problem.

③ Improving the product quality as a countermeasure against price-competition and counterfeit products

There are too many competitor manufacturers around the enterprise, and this causes the problems on excessive competition and counterfeit products. The enterprise has a policy to solve the problem by improving the product quality.

(5) Summary of the consulting guidance

The enterprise has been just privatized from a government-owned company. It has excellent managing executives but is now proceeding step-by-step toward a fully privatized enterprise with various problems holding, since the climate of the previous government-owned company cannot be changed so soon.

As for the consulting guidance on the primary survey, the enterprise answered that the guidance based on experiences in Japan greatly enlightened it and practically workable improvement was proceeding at that time. But, the enterprise could not report, it said, on the concrete results, because getting results within a short period (two months) was not easy and the approach for evaluating degrees of the results was not yet established.

Certainly, the four major problems we presented are equal to the fundamental serious problems which businesses in China are holding at present under the transient socialism market economy. The problems contain social factors and cannot possibly be solved through the consulting guidance.

for one enterprise. Therefore, for these problems, there may be only the way to review different countermeasures depending on each business situation.

7.8.2 Enterprise ID M-007

(Machinery and electronic industry: Elevated workbench manufacturing)

(1) Requests of consulting guidance from the enterprise at the primary local survey

The enterprise asked for consulting guidance on the following items:

- ① Market demand forecasting method.
- ② Effective measures to increase a market share.
- ③ Effective method for advertisement and publicity.
- ④ Effective method for utilization of a homepage.
- ⑤ Method for establishing and utilizing agencies.

(2) Contents of the consulting guidance

- ① The enterprise had been maintaining an inquiry record notebook since its establishment for four years. Classifying the content data into the categories of contract reaching, contract missing, and inquiry allows obtaining greatly valuable documentation as property of the enterprise. We suggested to prepare documentation relative to production quantity and sales amount and usage in the industry world as the secondary data for supplementing the above data. Moreover, we advised to reinforce the primary data by obtaining statistical information on the concerned products in China, Japan, and U.S. (There is no statistic about the concerned products in China.)
- ② Based on our instruction documentation, we cited Anzoff's market cultivating strategy and Porter's competition strategy in lecturing the ways to increase a market share in response to the enterprise's situation. Namely, we explained the following: the sales actions with emphasis on important markets should be developed by analyzing the above document ① and determining target markets, the enterprise should continuously put more of its energies into reducing cost, since two major competitive factors are low-price and high quality (differentiating products); it is especially important to enhance much more the advantage of the enterprise's patented products.
- ③ Assuming to save advertisement and publicity cost, we advised to insert advertisement continuously into trade journals even once a half-year after determining target markets by data analysis, for instance. We explained that continuous advertisement of the products with high appraisal but low publicity at that time might lead, in future, to a brand name with high publicity and appraisal.
- ④ The enterprise is now using a free homepage on a common web. As for the case, it is effective to open a homepage on the web site influential to the business world concerned (for example hotel business) after determining a target market. We explained that adopting the following

ways leads to a more effective homepage: configuring the homepage so as to allow customer readers to automatically link to more detailed information including product specifications, preparing functions to answer for the readers' simple questions and to allow the readers to contact the enterprise (This article is based on the suggestions of our information staff.)

- ⑤ We explained the necessity and functions of an agency using documentation. As the enterprise had not still established its agency, we suggested the use of existing agency networks relative to the target market and the adoption of experts who know well the business world concerned. And we explained that it is effective to establish local offices in target areas, and that adopting persons from the areas planned to establish problems to be solved for invigorating SMEs and they shall manage the local offices in future are suitable ways for wide markets in China.

(3) Expected results

- ① To determine the target markets and forecast the demand by sorting and analyzing inside documentation.
- ② To continuously insert effective advertisement into trade journals for increasing the sales and market shares.
- ③ To grasp, follow, and increase potential customers by improving the homepage.
- ④ To plan a fundamental market strategy including trial adoption of agencies, studies on establishment of own local offices, and associated talented people training.

(4) Results of the consulting guidance recognized at the secondary local survey (①, ②, ③, ④)

The enterprise had put together all of the problems, mentioned as expected results of the consulting guidance at the primary local survey, into a marketing strategy and submitted it to us as a result (Refer to "Consulting Guidance Cases" No 17.) The action items from the marketing strategies in 2001 are summarized in a table and it contains management concept, management aims, marketing targets (qualitative, quantitative), 4P, marketing organization, and practice tactics

In the strategies, demand forecasting and determination of the target markets are supposed to be implemented by sorting inside documentation in (3) ① As for advertisement in ②, inserting media, periods, and expense budgets are decided As for reviewing the homepage in ③, the updating cycle of its contents and the renewal time of the web site including offered information are regulated. And, adoption of agencies and establishment of the local offices in ④ have been carried out soon and now are used as the practical strategy.

(5) Summary of the consulting guidance

When we met some of the enterprise's executives on our primary local survey, immediate problems on its management were raised in specified and organized form They understood the contents of our consulting guidance on the problems honestly and quickly, and their attitude was active and receptive to our suggestions Decision of this marketing strategy is a result of the

consultation.

From the enterprise's example, it can be understood that if there is a management climate where executives are together struggling, as managers, to solve management problems, strategies can be easily organized with only a few theoretical lectures and documentation offered. Therefore, this case is one basis to be supposed that if the minor business supervising division of Hangzhou municipality continuously and steadily carries out enlightening and offering information to minor businesses, successful results can be surely expected.

7.8.3 Enterprise ID M-013

(Machinery and electronic industry: Decelerator manufacturing)

(1) Requests of consulting guidance from the enterprise at the primary local survey

The enterprise asked for consulting guidance on the following items:

- ① Sales actions of the enterprise are mostly depending on agency networks but many problems occur owing to greed for near-future profits. Occasionally, it sells products directly to customers. How to keep a balance between these two sales routes is a problem.
- ② The enterprise is aiming to get a market share of about 30%. Market forecasting is very difficult. It hopes to know the way to decide the sales plan for the latter period.
- ③ The enterprise has three target markets: machinery and electric appliance market (55%), university and laboratory market (25%), and direct sales market (20%). How to search ideal agencies is a problem.
- ④ How to control customers (agencies) and to configure a community of interest are problems.
- ⑤ How to make the salespeople work actively and to strive for improvement of the whole sales department.
- ⑥ The enterprise hopes to know the way to evaluate the salespeople.
- ⑦ The system to respond quickly to complaints from customers is not established. What to do?
- ⑧ The enterprise is worrying about the price policy for agencies throughout the country and especially price-competition with small cut-price enterprises.
- ⑨ The way to advertise effectively.
- ⑩ The enterprise cannot understand the concept of cost-effectiveness in after-sale service.
- ⑪ The problem on inventory in agencies, the way to respond to hasty orders, and the problem on partial-charge of expense.
- ⑫ The enterprise is now exporting 10% of its products. What to do in future?
- ⑬ There are various problems (contradictions) occurring among the sales department, the first-class (primary) agencies, and the special agencies. How to deal with?

(2) Contents of the consulting guidance

- ① The target markets are determined by areas, industries, and customers based on past business results. These are carried out with particular emphasis on analyzing inside documentation (for three to four years), and based on the results, the sales plans for next year are created in partnership with agencies.
- ② The following measures support agencies: sales rebate, money rebate, and quantitative rebate. In addition, it is also effective to take further incentive measures regarding fidelity, improved share, and increase of the sales quantity.
- ③ The sales person in a manufacturer should be treated persistently as a staff member who is working in an organization and provided with fixed salary plus premium pay rather than with percentage pay. It is necessary to reconsider adoption of salespeople with percentage pay provided up to now. And, a rule for premium pay of the salespeople should be established.
- ④ The iron rule in market competition is to be more price-competitive by reducing cost without decreasing quality. The enterprise should not compete with low-grade goods from the point of its business policy.
- ⑤ Developing direct sales routes to manufacturer consumers should be left to agencies for the present. After the sales department will have grown in power in future, the enterprise should cultivate large manufacturer customers.
- ⑥ The sales organization should be immediately reviewed.
- ⑦ General manager should not leave unpaid accounts receivable as a problem in the sales department and rather should be responsible for determining credit exposure limit settings of agencies (first-class agencies).
- ⑧ The price policy should be decided after sufficient survey of market prices through agencies. The present price policy to keep the enterprise's profits appears to contain a one-sided price system considering too much of the manufacturer's standpoint only. Reviewing it including the rebate policy may be required.
- ⑨ After-sales service should be fundamentally carried out by agencies. However, the enterprise should take charge of technical training for agencies' employees.
- ⑩ Inserting advertisement into customers' trade journals may be effective.
- ⑪ It may be better for the present to commission export work to export firms and to operate on one's own after the talented people will have grown in future. It may be also effective to put a target on foreign-affiliated firms in China.

(3) Expected results

- ① To put agency networks in good condition.
- ② To improve the sales department's organization and to establish rules for managing the salespeople.
- ③ To review the price policy.

④ To consider sales to a foreign-affiliated (Sanzı) company.

(4) Results of the consulting guidance ascertained at the secondary local survey

① Improvement of agency networks

For improving the agencies, the enterprise had created with many efforts an agency member manual, which contained the procedures for specifying agencies and associated contracts, including a unified agency-store image manual and other manuals for agency actions. Opening the detailed contents to the public was refused, but hierarchical agency systems for primary and secondary agencies had been adopted. Preparing such manuals is very important, and this is a great result of our guidance.

② Management of the sales department and salespeople

The enterprise had reformed the system and organization of the sales department. As a result, parts of the salespeople who did not follow the company policy were dismissed. There was difficulty for employees to understand the new business policy. But the enterprise had decidedly implemented the following as the emphasized measures, which seemed to have employees satisfied: improvement of the salespeople's treatment and system, strict implementation of the new marketing strategy as an intensive measure, and sufficient assurance of income for the salespeople. And as for the salespeople's training, it was decided to exhaustively give wide and fine guidance.

③ Market competition including price policy

The enterprise is facing to fierce competition as before. Especially, most of management matters such as products, price, and an agency system are imitated and so the enterprise is in a very difficult situation. How to compete under such situation is a very severe problem and measures against the problem are now under consideration.

(5) Contents of additional consulting guidance

① We explained the following, giving guidance on a human resource strategy of the salespeople (adoption, training, sales power, and all): importance of premeditated training, hierarchical training from new employee training to executive training, distinguished training by social experience, and on-the-job training (OJT).

② For competition with competitors, we gave individual guidance on the following strategies, which were asked for additional consultation: new product development strategy, price strategy, competition strategy, agency strategy, and customer strategy.

③ Before the above individual guidance, a post-graduated master, the representative of counterparts, explained the common theory of SWOT analysis (SWOT analysis - printed in the collection of practical cases). Then we analyzed advantage and weakness of the enterprise's fundamental management environment (internal and external environment) based on its definite

condition. We explained that various strategic measures given in ② were studied based on typical strategy substitution ideas from the various resulting conclusions

(6) Summary of the consulting guidance

The enterprise's manager is a very excellent person of high managing power who established the enterprise in his youth and developed it here so far. The enterprise is basically owned and operated by family members, so seems to have constraints in terms of talented people. Therefore, major problems for developing the enterprise more are supposed to be organization as a company and talented people training. The manager placed importance on this consulting guidance, took time from his busy schedule to respond eagerly to it for himself, and yielded sufficient results of the guidance.

The enterprise has now become a target of other competitors, since it is achieving favorable performance. Thus, they are imitating from the products to the management system, and this makes the enterprise feel difficulties. For the manager, this time may appear to be a big turning point for further development of the enterprise. This consulting guidance was an opportunity to deliberate on strategies of from marketing to basic management, and continuing more of consideration after this on development strategy, especially product strategy, of the enterprise is supposed to be important.

7.8.4 Enterprise ID F-003 (Food processing industry: Milk producing)

(1) Requests of consulting guidance from the enterprise at the primary local survey

The enterprise asked for consulting guidance on the following items:

- ① The enterprise is considering modifying the present organization in a more appropriate form, since the enterprise is dealing with many kinds of product classes and covering wide sales areas.
- ② The enterprise is worrying about a performance evaluation method and incentive measures for the salespeople.
- ③ The enterprise is worrying about problems on price of agencies, retail shops, and convenience stores from the viewpoint of customer management and especially price policy. Competition with imported goods, a foreign-affiliated (Three capitals) manufacturing company, and manufacturers in neighboring municipalities including Shanghai is also a severe problem. Due to starting from a government-owned company, the enterprise has been holding many other problems including a personal problem.

(2) Contents of the consulting guidance

- ① As for sales organization, there are matrix organization approaches by merchandise and region for determining optimum assignment of the salespeople. We proposed the method to take charge by merchandise only in high-shared Hangzhou municipality (occupying about 50% of the share of milk) and the suburbs, and plural goods by region in low-shared areas.

② The enterprise is implementing home delivery of milk in the municipality and has very high strategic advantage. We suggested to separate the above section as a strategic division, and to make this independent home delivery division work on penetration of the brand name using sticking-to-homeland and deep-cultivation operations. Then we explained that this would lead to a possibility to win in competition with local competitor manufacturers and competitors in other areas including Shanghai.

We suggested that it might be effective to distribute the enterprise's products free in athletic meets or children's events as a sticking-to-homeland operation or a way to approach children especially

③ As for the treatment of the salespeople, it may be inappropriate to make the incentive measures for the salespeople too much outstanding, taking into consideration the business climate started from a government-owned company and the balance with the production or general management staff. We proposed adjustment of the evaluation with applying results management and taking into account their areas and goods in charge, and an incentive measure based on results management with disclosing the evaluation system.

④ Since price systems relate to complex circumstances of this place, we explained difficulty of price control by introducing the present situation of consumer prices in Japan, such as price difference by brand, price difference by kind even in the same brand, and bargain price setting by super markets

⑤ As a brand image is very important for foods, we explained the importance of positive consideration for changing the design and colors to renovate the brand image, keeping great value on the brand since the government-owned age

⑥ We suggested expanding the kinds of product classes relative to the major products for a synergistic effect, since the product kinds were not so many. And we recommended adding a new kind of biscuit made from milk to the product line-up, as the biscuit producing then had little relation to milk.

(3) Expected results

① To renew the sales organization

② To prepare a performance evaluation system and incentive regulation for the salespeople.

③ To aim for improvement of the share by implementing the stick-to-homeland operation in Hangzhou and the suburbs markets with emphasis on home delivery.

④ To improve the brand image through distributing milk free in athletics meets of elementary schools in Hangzhou, the target market.

⑤ To expand the product kinds

⑥ To revise the brand design.

(4) Results of the consulting guidance ascertained at the secondary local survey

- ① Renewal of the sales organization (①) and improvement of the share by implementing the stick-to-homeland operation with emphasis on home delivery (③)

The sales organization had been renewed. The previous three-department system changed to the five-department system. Especially, The department taking charge of an important market Hangzhou municipality was divided into the milk home delivery department, the trading department (charging super markets), and the direct sales department. The system featuring strategically home delivery is producing an effect, but new difficult problems to solve further are occurring.

- ② Preparation of the performance evaluation system and incentive rules for the salespeople

On the renewal of the sales department, a young key man was promoted to head of the department. The rejuvenation of managing executives is necessary as a company, but there are some objections in a part, and the enterprise is operating solving difficult problems. The problem on personal evaluation was pointed out on the primary survey. So the enterprise's executives are attaching importance to the problem on talented people resources and preparing new rules by commissioning to a consultant. It is under consideration that the salespeople are evaluated mostly based on the sales, collection amount, and ratio of returned unsold goods.

- ③ Expansion of product kinds

The enterprise has invested a large sum of fund for developing products. Products relative to yogurt and high dense milk are planned as future developing goods. On the other hand, the enterprise has built a product laboratory for developing products with obtaining the support of the municipality and thinks it effective for future product development.

- ④ Sales promotion through free distribution of products for improving the brand image

The enterprise is developing new products and struggling to do every other effort for increasing sales to schools in future. (refer to the collection of practical cases for the competition strategy of the enterprise)

(5) Contents of additional consulting guidance

The enterprise is in fierce share-competition with major manufacturers in Hangzhou and Shanghai. So many problems to solve were remained and additional consulting was necessary. So, we analyzed (SWOT analysis – printed in the collection of practical cases) advantage and weakness of the enterprise's fundamental management environment (external and internal environment) with counterparts (a post-graduated master, who is the representative of an associate professor, and two college students). Then, we explained the method to decide adoptable typical strategy substitution ideas resulting from the above analysis as various conclusions. For reference purpose, we referred to, at the same time, concrete strategy substitution ideas, which the enterprise should adopt. Since share-competition with competitor manufacturers is the most important problem especially in this enterprise, we explained how to decide the competition strategy.

Later, we explained on the items asked for additional guidance.

(6) Summary of the consulting guidance

The enterprise has just privatized from a government-owned one. But, the executive classes are realizing severity of the privatization and are struggling to change the business climate of the government-owned company. As the products face directly to consumers, there are many difficult problems adding to fierce competition.

After the primary survey, the enterprise pursued rapid innovation, such that the enterprise reformed the sales department immediately and adopted a personnel consultant. There may be many objections in the company against sudden innovation, since the privatized enterprise from a government-owned one holds difficult problems on the business climate. But, we felt from this case the importance of speed and decision for innovation.

7. 8. 5 Enterprise ID F-011 (Food processing industry: Bamboo shoot processing)

(1) Requests of consulting guidance from the enterprise at the primary local survey

The enterprise asked for consulting guidance on the following items

- ① The enterprise is supplying processed semi-manufactured products, as material of products for Japan, to Japanese-owned Sanzi company here in this place. But in order to expand the sales, the enterprise is considering exporting the goods directly to Japanese markets and hopes to seek guidance about the way to do.
- ② The enterprise is now applying for trademark right of the products to the Government of China and will be licensed soon. The enterprise is planning to develop high added-value products and hopes to seek guidance.

(2) Contents of the consulting guidance

- ① Expanding export for Japan is a subject that everyone is thinking and considering. But, the sales of the semi-manufactured products for the Japanese-owned company, which are now the base of the enterprise's total sales, occupy a too much important position within the enterprise. Therefore, the enterprise should consider new sales for Japan after conferring with this most important customer, the Japanese-owned company.

But, even if the Japanese-owned company has agreed, it is not easy to search new sales routes in Japan. Japanese major customers, who need the products, may have already established companies (Private company) in China, or secured purchase routes, and a few customers suppose to need new manufacturers in China.

Since there is a possibility that only small customers are found basically, new sales routes should be developed taking well the above effect into account. If increase of the sales to Japan is desired, it may be the most steady and safe policy for the stable management of the enterprise to put effort into increasing the supply amount for the present Japanese-owned company. Consid-

ering where the present management base exists and standing on the base, the future development strategy should be configured.

- ② We heard the enterprise was applying for own brand (trade mark right) to the Government at the time and would be licensed soon. So it is better to produce the products for consumers printed in brochures

Namely, having two divisions, the semi-manufactured product division for manufacturers and the new final product division for consumers, will make the management basis more stable. We gave guidance on the development of new products for consumers as follows: at first, configure core concept, such as aims for food culture or health, by realizing consumers' tastes through sufficient market research and understanding enough the product concept (Cotlar's doctrine) as the basis of product development; after this, develop products taking into consideration quality, brand naming, product differentiation, packaging, and product assurance.

(3) Expected results

- ① To decide a new management strategy (marketing strategy).
- ② To develop new products for consumers based on market research.

(4) Results of the consulting guidance ascertained at the secondary local survey

- ① To decide new management strategy (marketing strategy).

The enterprise is a Japan-China joint-venture company. The new management strategy appeared to have been decided for further development of product export to Japan, but the contents were not disclosed. But, the manager appeared to have been highly confident about progression of the business, since he reviewed the basic management strategy after the primary consulting guidance.

- ② To develop new products for consumers based on market research.

With national registration of the trade mark right completed, the enterprise was planning the development and sales of new products, but realized once again the importance of market research through the consulting guidance, and carried out a research on the new products to be sold. As the result, the enterprise determined to start the sales of new products for consumers after some period with consideration given to the present circumstances.

(5) Summary of the consulting guidance

The enterprise was established as a Japan-China jointed company and the development has been very favorable despite its short history. The major reason of the smooth progressing is that most of the products are supplied to related Japanese-owned company and so the sales are steady.

However, to aim the enterprise's further development, the variety of products and sales routes and the diversification of markets are required. The manager was considering various methods for that but holding many conflicting problems.

After receiving the consulting guidance that these problems come from the fundamental

management strategy, the manager appears to have once again recognized and progressed the strategy and decided new strategy for the business development. And, as for the products with constraints or problems for progressing within the enterprise, he noticed it possible to select the method (management strategy) to solve those constraints or problems by establishing a new company to shift such products.

This case clearly shows that the consulting guidance on marketing is in close relation to the fundamental management strategy.

7.8.6 Enterprise ID T-005 (Spinning industry: Flat knitting machine manufacturing)

(1) Requests of consulting guidance from the enterprise at the primary local survey

The enterprise asked for consulting guidance on the following items:

- ① The enterprise is in price-competition with many other manufacturers due to excessive competition, since the products need few advanced techniques in manufacturing. Among them, the enterprise is behind with new product development and so has a low market share (about 5%) and less competitiveness and desires to know the ways to forecast market and demand for management planning.
- ② The enterprise has a problem on unpaid accounts receivable and the outstanding amount of an agency in Shanghai reaches 400 thousand won. There often occur problems on unpaid receivable in remote markets where no other choice but to commission agencies (sole trader) exists.
- ③ The quality of the products is poor and many complaints are brought into. The delivered products need adjusting before the operation and this brings about a low reputation.
- ④ It is difficult to take sales actions, as the product type is only a single.
- ⑤ It is difficult to grasp information on customers' needs.

(2) Contents of the consulting guidance

- ① It is necessary to sort and analyze information about the old and new customers in the sales department. This is very important thing for preventing customers from being derived by other competitor manufacturers and for being repurchased the products. This data is valuable property for the enterprise. And, the documentation resulted from analysis of the above original data is referred to as the primary documentation and is also very valuable. This documentation should be attached importance in both of the sales and production departments.
- ② For advantage of competition in markets, researching the production capacity, sales amount, strong models, customer's industries, sales region, and sales performance of competitor manufacturers is necessary. Using these data together with the secondary data including documentation from the industry groups, it is necessary to forecast market demand and to make the management plan. It is also required to review monthly the plan in the sales meeting.

- ③ As a measure against excessive competition, there is the way to increase competitiveness by improving the product quality and reducing cost and price
- ④ For preventing new unpaid trade receivables from incurring, there are three example ways available after classifying credit-worthiness of agencies. (a) cash transaction and payment at ordering points, (b) cash payment on delivery, (c) cash payment after delivery at one month later. As for this, it is necessary to consider the way suitable for the enterprise taking into account specialty of the products and the business world.
It is also necessary in the enterprise to prepare a rule for setting agencies' credit exposure limits and to make the sales department keep the rule.
- ⑤ As for development of new products, the development department should make the new product development plan by taking into account market needs and counterpart trends and by accommodating opinions of the sales department, and finally should decide it at the executive meeting.
- ⑥ The sales organization can divide by customer and region. And, branch offices should be established in important markets
- ⑦ If the interest and recognition to the markets are not in agreement between the sales and production departments, the enterprise's performance will be unfavorable.
- ⑧ The products should be shipped in such a status that customers are able to use immediately after unpacking. This is the problem the production department should attack soon.

(3) Expected results

- ① To improve the position of the sales department and to innovate the sales organization
- ② For creating the sales plan, to predict the market through sorting and analyzing internal documentation.
- ③ To review and reform the agency network
- ④ To prepare a credit exposure management rule for customers and to manage it.

(4) Results of the consulting guidance ascertained at the secondary local survey

- ① Completion of questionnaire sheets for grasping customer opinions

Preparation of questionnaire sheets had been completed. The sheets are used for researching customers' opinion or evaluation about the enterprise's products. The sales and production departments hold information on the quality, price, and after-sales service of the products in common, and use the information for improving the products to meet customers' requirement and developing new products.

- ② Coordination of the sales department

The enterprise coordinated the number of the salespeople and the charging areas, taking into account the sales organization after the privatization. And, the evaluation method of the salespeople was changed so as to take consideration on collection merit of accounts receivable.

- ③ Others

Other matters have not been concretely carried out, since just now the enterprise is very busy

with final arrangement for the privatization.

(5) Contents of additional consulting guidance

The enterprise asked us for additional consulting guidance, since decision of a new marketing strategy would be required when the privatization was decided late in April. So, we analyzed (SWOT analysis- refer to the collection of practical cases in consulting guidance) advantage and weakness of the enterprise's fundamental management environment (external and internal environment) with counterparts (a post-graduated master, who is the representative of an associate professor, and two college students). And, based on this management analysis method, we explained the method to decide adoptable typical strategy substitution ideas resulting from the above analysis as various conclusions. For reference purpose, we referred to, at the same time, concrete strategy substitution ideas, which the enterprise should adopt.

We proposed to decide the marketing strategy for after privatization using the above method. And concretely, we explained and advised what products (specification, quality, and price) to be made and what customers to aim in future by comparing the quality and price of the products with those of competitor manufacturers.

(6) Summary of the consulting guidance

The enterprise is still government-owned now and final conclusion on the privatizing will be decided later in April. Business habits of a government-owned company still remain deeply in the employees. But, the executives have already reformed awareness for the privatization and been making desperate efforts to prepare for it.

Nevertheless, the enterprise has a low market share, since the present products (knitting machine), designated intentionally as a mission in the age of a government-owned company, are not so competitive. After the privatization, it is urgent necessity to review the products and to decide a measure to improve the competitiveness. Privatizing a government-owned company is not so easy as seen from the outside, since there exist many complicated problems including the business climate, unpaid receivables taken over, and retired persons' welfare. And, the consulting guidance is hard with many differences from private businesses

7 8.7 Enterprise ID T-007

(Spinning industry: Cotton thread spinning)

(1) Requests of consulting guidance from the enterprise at the primary local survey

The enterprise asked for consulting guidance on the following matters.

- ① The enterprise intends to improve and enhance the sales department at the sales of the new products, and for this, requires talented people capable of marketing control, thus hopes to hear what to do

- ② The enterprise hopes to learn the experiments and methods in Japan for cultivating new demand through after-sales service.
- ③ The enterprise asks for explanation about the export strategy and international practices as it hopes to export new products.
- ④ The enterprise hopes to hear the whole of marketing.

(2) Contents of the consulting guidance

- ① We explained about organization of the sales department based on documentation. We also explained importance of consistent marketing activities as an organization, though cultivating customers by top sales before will be still important in future. As for talented people, we stated with emphasis on the necessity for adoption and training of persons taking the future export strategy into account.
- ② Going to the customers only responding to their call on occurring problems is not after-sales service. Visiting regularly the customers, asking their evaluation about the product quality, hearing information they obtain, and using it for marketing actions should be actively carried out rather

We explained that this brings about large merit not only to the customers but also to the enterprise own.
- ③ We recommended to work toward export from a familiar place first, as export is a future problem for the enterprise. We suggested, for example, possibility to obtain information on foreign needs or inquiries by visiting foreign trading firms or textile companies in Shanghai. And, we also suggested adoption of a specialist who grasps export routes as an agent, since direct export is difficult. Anyway, for preparing future export, it is necessary to adopt English-capable persons and train them to implement export operations.
- ④ Based on documents, we explained and gave guide on market strategy to General manager and Vice general manager.

(3) Expected results

- ① To establish the sales department now not existing
- ② To decide a marketing strategy.
- ③ To start preparation and consideration about export, and to adopt and train talented people.

(4) Results of the consulting guidance ascertained at the secondary local survey

- ① New establishment of the sales department

After the consulting guidance, the enterprise established the sales department in the organization. The numbers of sales staff are seven or eight. The enterprise increased employees in existing local offices of consumer areas and expanded operations for cultivating new customers. Further, a new local office was opened at one place in an exporting port and two persons were arranged there.

② Decision of marketing strategy

The enterprise is putting emphasis on the markets in a major large demand area, Jiangsu Province, based on introduction of new facilities and development of products. General manager and other key staff are associated with the sales actions direct to major customers. The above matters are almost the same as that we heard at the previous consulting, and the policy, including the marketing policy, is consistent, but decision of the marketing strategy organized in a strategy form had not been completed.

③ Beginning preparation and consideration of export

The enterprise applied for export license to Economy Committee and expected about 300 ton of export amount this year. General manager has been in Shenzhen of Guangdong Province to research kinds of exported product classes, and based on the results, intends to develop exportable products. The enterprise plans to cultivate Southeast market where is no export regulation, and hopes to get about 30% of export ratio in future

(5) Summary of the consulting guidance

The founder such as General manager and his family controls the enterprise. The management has been smoothly developing with advanced facilities introducing actively. But, the organized operation as a company, namely business management, still includes old-fashioned aspects.

As for marketing, large improvement effects are obtained during short period by the consulting guidance. Taking the opportunity of the consulting guidance, he immediately executed the matters, on which he had held critical mind as a manager. His decision and executive ability is worthy of respect. For further development of the enterprise, it is preferable for him to put emphasis on modernization and organization of the business management from now in cooperation with both of the senior and middle nice executives

7.8.8 Enterprise ID L-001 (Light industry: Bottle manufacturing)

(1) Requests of consulting guidance from the enterprise at the primary local survey

The enterprise asked for consulting guidance on the following matters:

- ① As price-competition is fierce in the market, it is necessary to enhance competitiveness in the market by reducing cost with assumption of the quality assurance and by increasing the market share
- ② Since there are a few routes to international markets, the enterprise's export amount is only 1% of the sales. The enterprise hopes to cultivate international markets and increase the export ratio.
- ③ As collection of accounts receivable is delayed, the enterprise holds 40 million won of accounts receivable, and volume of inventories reaches 10 million won. If the problems on technique and quality are solved and the product quality is assured, it becomes possible for the enterprise to cultivate the market, become competitive in the market, and increase the market share.

(2) Contents of the consulting guidance

All of the above-mentioned contents were previously described logically in a print and the enterprise appeared to have already known the whole of what to do. At first, from the enterprise's attitude, it appeared utterly unnecessary to seek our guidance. Therefore, the consulting guidance for the enterprise was not given, and only guidance on knowledge of marketing based on prepared documents was given.

Sales-responsible vice president and a sales charging person said the reason as follows.

Since the product quality was poor, the enterprise was not in such a situation that marketing is put in practice; namely, the salespeople were driven by complaints and it was almost impossible to take sales actions; the amount outstanding of accounts receivable had incurred from being one-sidedly subtracted half price (in case of much) by customers, because of quality complaints, anyway, until the problems on quality were solved, no mention could be made of marketing.

Thus, we could make no mention of concrete matters.

We have visited the enterprise once at the visit survey and this was the second visit. Within the conversation with production-responsible Vice General manager in the morning, we heard part of the situation of the enterprise and following quality problem was supposed to be a large problem. But, head of the production department said that the sales department stopped the production line to change the die, and produced the ordered product giving priority to it, thus keeping stability of the production line was impossible, and this caused the quality problem.

The reason why they gave priority to the ordered product even with sacrificing stability of the production line was, they answered, to give higher priority to the market within the market economy age. We came to hear the reason of the above poor quality, which we could not understand if they did not understand the market economy or if they were making an excuse for delay of solving production problems.

On the other hand, in the meeting with the sales department persons, we proposed to think some ways to cooperate with the production department and to contribute to improvement of the quality. But, they had a stubborn opinion that it is utterly useless to consider anything due to the poor quality

Head of the sales department said that he could take mention of positive matters only after the quality would have been improved. And, he did not enter into our proposal with nothing of a cooperative posture for improvement.

(3) Problems

In this case, the sectionalism between the production and sales departments is supposed to be a large inhibit factor, since the enterprise still remains most of the government-owned company constitution. Therefore, we would like to give once more the consulting guidance including the factory manager, top of the company, after checking the effects of the consulting guidance on production management at the secondary local survey.

But, until then, we hope to ask for follow-up of this case to the C/P of China, and if possible, to let the enterprise's problem be solved by the consulting guidance of the C/P. For this purpose, we will tell to the C/P this time the guidance items for making a start on solving the problems. As for this case, we will review the data presented from the enterprise once more after we have returned to Japan, and prepare for the consulting guidance in February.

(4) Results of the consulting guidance ascertained at the secondary local survey

We visited the enterprise at the primary survey. Since the enterprise had already studied within the company the points and improvement measures of the marketing problem, it was not necessary to seek our consulting guidance on marketing. On the day to visit, a sudden important meeting cancelled our visit, and after all, the secondary visit survey could not be conducted.

(5) Summary of the consulting guidance

The documents on marketing offered at the previous survey and the primary survey stages were very excellent. And the enterprise was a superior factory capable of self-diagnosis on marketing. Therefore, as the marketing department is asserting, we expect that when the production department has succeeded in improving itself, the marketing department will contribute to development of the factory showing its accumulated power.

7.8.9 Enterprise ID L-009 (Light industry: Ball-point pen manufacturing)

(1) Requests of consulting guidance from the enterprise at the primary local survey

The enterprise asked for consulting guidance on the following items:

- ① Marketing is poor and systematic actions are not taken
- ② About 90% of the sales are for export. Within it, direct export is 40% and export through export traders is about 50%. Exhibition expense for a main negotiation place, Hangzhou Trade Convention is high and becomes a heavy burden for the enterprise. But to achieve foreign new customers including existing ones, displaying the products is essential and the enterprise continues positively to exhibit more of them.
- ③ The enterprise keeps export and import licenses, as is funded by Hong Kong capital for export of products and import of materials
- ④ As a home route, the enterprise is commissioning sales, with the consignment method (depositing goods and paid if they sold), to a wholesale dealer in Yiniaocommodity market, the largest stationery wholesale market in China.
- ⑤ The enterprise exhibits the products in National Stationery and Educational goods Fair held in spring and autumn
- ⑥ The enterprise has opened a homepage recently and is considering the utilization.

⑦ The enterprise has a brand name but is retaining low brand-name recognition. As most of manufacturers in this town have no brand, it is difficult to advance in international markets.

(2) Contents of the consulting guidance

- ① It is necessary to shift from the present management strategy focusing to low grade goods to the new strategy aiming for low-class plus high value-added middle grade goods.
- ② It may be necessary to attempt variety of the products and to develop the products (novel) with characters added.
- ③ The unit price of the present product is too low (about five yen a piece) and the added value is not completely recognized. On the contrary, with a weapon of low wages, producing the products with taking many hands can rather show advantage. We suggested the development of new products from this viewpoint.
- ④ It is necessary to see the circumstance of countries importing ballpoint pens. Whenever and whatever following to buyers, there is forever no way out of the dependant situation. For this, it is necessary for the salespeople to travel abroad for business.
- ⑤ The enterprise's production techniques of dies are insufficient, we heard, but subcontracting only production of dies is possible, but it is also necessary to consider subcontracting the manufacture of the products themselves.
- ⑥ The enterprise has now a homepage but is not using it so much. We advised to utilize it for attracting publicity and obtaining inquiry, as possible. (accompanied by an information charging member in our policy team)

(3) Expected results

- ① To develop new products with even a little higher added value.
- ② To develop novel products, except ballpoint pens, that can put on the present sales route network of stationery.
- ③ Without depending on the trade convention, to operate daily business or to take sales actions of the newly developed products keeping more close relation to customers abroad with e-mail.
- ④ To train the two newly adopted English-speaking persons for immediate sales power.

(4) Results of the consulting guidance ascertained at the secondary local survey

① Development of new products with higher added-value

The enterprise is developing new products based on the specifications required from buyers, including original new products. But, basically most of the new products are required from buyers, which directly lead to the sales. The problem is that competitor imitates the new products developed with so much of effort soon and the effort is not rewarded.

Improvement of added value is step-by-step achieved by accumulating small efforts and ideas, and so patient effort is required. In this aspect, the enterprise's effort appears to produce good results.

② Daily business or sales without depending on the trade convention

As for this matter, the enterprise has been taking efforts from before, and is continuing the sales actions, though sufficient performance cannot be expected owing to a few persons in charge (three members system). The utilization of e-mail has been also improved than before and it has come to be used for achieving new customers.

③ Training of newly adopted persons

Now, these two persons have been already working as power of the sales division. One person is practically active in the forefront as a salesperson (charging export). Another one first learned the homepage taking charge of the computer, but now he is in charge of the contact service and cultivation of the new prospective customers accessing to the homepage.

(5) Summary of the consulting guidance

The enterprise is a leading company of the ballpoint pen business group in this region and a top manufacturer here even in the product level and management level. But, the enterprise is having difficulty in terms of talented people, one of restraints in small businesses. Practically, as adopting excellent people is difficult, the daughter of General manager is working as the manager of the sales department. She is very excellent, and calmly grasping, analyzing, and responding to the enterprise's situation. If the salespeople are increased more, increase of the sales is prospective.

In this industrial gathering zone, building a technical center has started. At the same time, building new factories has also started in the industrial park. If these movements lead to increase of bulk of total infrastructure, including talented people in the gathered ball-point pen industries, and if excellent people contribute to improving the product quality or take actions in sales or marketing fields, it will not be a dream the day when this town becomes the ball-point pen castle of the world, the future plan of this town

7. 8. 10 Enterprise ID T-006 (Spinning industry: Electric wire manufacturing)

(1) Requests of consulting guidance from the enterprise at the primary local survey

(The enterprise was not a model company, but consulting guidance on management and finance was given at its request.)

The enterprise asked for consulting guidance on the following items:

- ① The enterprise wishes to seek guidance on the financial problems at a turning point from a small business to a large company, for instance what to do about finance circulating and budget systems. At present, the enterprise is implementing decision and prediction of the management plan, market forecasting, and finance analysis, and making the profit plan analyzing market trends. (The above matters are explained by word of mouth only and no document is offered)
- ② The enterprise wishes to listen about the budget, closing accounts, and financial plan in the company at a turning point from a small business to a large company.

(2) Contents of the consulting guidance

- ① At first, it is fundamental whether the management system is established, and whether relation among the production, sales, and finance divisions, and charge of the executives are clear
- ② It is a problem that various finance information as reference of management is not fully prepared in documentation. Namely, the responsibility system as a financial department is not established.
- ③ The total amount of unpaid accounts receivable has been over the total amount owed from banks. It is an abnormal situation that the capital stock is appropriating the shortage. Measures to collect these unpaid accounts receivable should be taken immediately. (We did not hear about the accounts payable debt balance corresponding the unpaid amounts receivable.)
- ④ In our question about the source of the fund for the new investment plan in such circumstance, we heard the enterprise intended to supply it from the profits. Investment fund should be supplied from long-term fund. So we explained importance of deciding a sure investment fund plan.
- ⑤ The sales prediction in the investment plan is based on accumulation of the salespeople's prediction.

And, consideration from general aspects at the meeting held to decide the investment is not taken. The plan may ought to be decided, from the viewpoint of the manager, by taking into consideration the internal environment such as sales prediction, the sales cash flow, and the investment profit ratio, and the external environment such as market demand forecasting, macro economic trends, and the WTO affiliation problem.

- ⑥ As for summarization of financial aspect, it is necessary to establish such system that provides the manager with documentation clear to understand the enterprise's financial situation by learning from a certified public accountant the accounting system based on the accounting law, and by preparing immediately systematized inside financial rules.
- ⑦ As for business management, the present situation of the enterprise is not yet sufficient in management and finance aspects even as a small business. Therefore, before jumping to a large company, there is still necessity to reconfigure the present management system basically in management, production, and sales aspects.
- ⑧ The enterprise's present position in the industry group is the first, we heard, but it is necessary to confirm or decide the enterprise's management strategy with the WTO affiliation before. For this, it is necessary to review calmly the external and internal environment of the management and to reconfirm the enterprise's position and advantage in competition.

(3) Expected results

- ① To review the management strategy.
- ② To reconfigure the finance system
- ③ To improve financial documentation and to offer financial information to the manager.

- ④ To reconsider the facility investment planning now and to verify fundamental data as the investment basis.

(4) Results of the consulting guidance ascertained at the secondary local survey

At the primary survey, we gave some of consulting guidance, and taking this opportunity, improvement in every aspect of the business management was implemented and successful results had been achieved in the following matters.

① Management plan

The enterprise modified and supplemented the budget of 2001 in February. Namely, the plan was decided by considering market subdivision and different needs of customers each based on market survey.

② Financial plan

Based on this management plan, the enterprise decided the financial plan and target of 2001. These are made on the basis of profits, sales, and a collection target of accounts receivable.

③ Sales plan

Requirement for the sales department based on the above plan clarified the work of salespeople. Applying this, a customer charging system was established, which determined charge of the salespeople. And, it was decided, making a change to the method from last year, that income of the salespeople was determined taking the sales merits into consideration.

④ Review of monthly plan

The next month's plan is made referring to the previous months' actual results of the production and sales. And, after setting a certain criterion for a management status (profit and loss) the management is controlled based on this criterion. Such method was adopted. This depends on that the sales in subdivided markets make it easy to control and regulate a management target (profit).

⑤ Production control

After the sales department had come to offer information about the demand and price requirement from customers to the production department, more steady production control came to be possible than ever before, since the production amount could be expected.

⑥ Problem on unpaid accounts receivable

Favorable results were achieved in collection aspect of unpaid accounts receivable.

(5) Contents of additional consulting guidance

The evaluation standard for the salespeople's merit evaluation, such as sales and collection amount of accounts receivable, was relatively clear and we were asked a question about evaluation of the staff in indirect divisions. As for this, we suggested a self-return system using results management, in which the staff member decides his own target within the department target and evaluates actual results of his operation for his target at the end of the year under confirmation of

his superior.

(6) Summary of the consulting guidance

At the primary survey, the manager in charge of finance (Vice general manager) had been just adopted and it is supposed that enough communication had not yet established among the top executives interviewed then. In such time, consulting guidance of the primary survey was timely conducted, and we guess the management was sufficiently reviewed among the executives taking this opportunity. With the efforts into reviewing, successful results were steadily achieved. The enterprise's managing executives are excellent, including the top with experience of studying abroad in Japan, Vice general manager who learned the Japanese business management at Business Management Center in Tianjin and went to Japan for training, and another Vice general manager who charged finance in a Japanese-owned company.

They knew well the contents of our consulting guidance as knowledge. But, this is an excellent example, as an effect of this consultation, that only giving opportunity toward improvement brings about significant effects after all. Several years before in China, the government-owned companies extremely beared of outsiders (especially Japanese) to be known the in-house circumstances, and was in such a situation that consultation was utterly out of the question. And now, this privatized enterprise placed in market competition of the socialism market economy in China actively is representing own business management and its problems by itself, and hoping to receive suggestion and guidance for improvement. We were filled with astonishment at this great change.

(Appendix) Documentation for consulting guidance on marketing

We made to order the following documentation at local spot, relating to knowledge of marketing strategy and containing mostly illustration, and used for consulting guidance and offered to counterparts for reference.

Knowledge of marketing strategy

- 1) Transition chart of marketing concept Eiji Mitsue, "Illustration: Marketing" Kohyoh-shoboh Publishing
Reference list of marketing concept new and old: Edited by Li Heyuan, et al, "Marketing theory", China book publishing
- 2) Marketing system: Edited by Li Heyuan, et al, "Marketing theory", China book publishing
- 3) Marketing strategy (4P): Li Heyuan, et al, "Marketing theory", China book publishing
- 4) Market subdivision: Li Heyuan, et al, "Marketing theory", China book publishing
- 5) Cotler's product concept: Li Heyuan, et al, "Marketing theory", China book publishing
Relation diagram between product development activity and product's growth rate: (no reference literature) Brand function and components Li Heyuan, et al, "Marketing theory", China book publishing
- 6) Product lifecycle and introducing strategy: Li Heyuan, et al, "Marketing theory", China book publishing
- 7) Marketing organization diagram. Li Heyuan, et al, "Marketing theory", China book publishing
- 8) Marketing information system: Li Heyuan, et al, "Marketing theory", China book publishing
- 9) Export route chart: Li Heyuan, et al, "Marketing theory", China book publishing

Knowledge of marketing

Position analysis, ABC management, 4P and 4C. (no reference literature)

- 11) Knowledge on marketing strategy
Boston Consultant's product portfolio, Anzoff's product growth strategy, Porter's competition strategy (no reference literature)
- 12) Theoretical structure of competition market strategy
Marketing strategy by market position: Mitsuteru Shimaguchi, "Modern marketing", Yuh-hikaku Publishing
- 13) Marketing strategy
Decision process of marketing strategy Mitsuteru Shimaguchi, "Modern marketing", Yuh-hikaku Publishing
Process of marketing strategy Li Heyuan, et al, "Marketing theory", China book publishing