

## FUJITA TECHNO Inc.

Minoru Yamada, the director of Fujita Techno in charge of business management, was exploring how to expand the business overseas while maintaining the high-quality of service and one of the solutions was technology transfer to other countries.

### ■ Origin of Fujita Techno

Fujita Techno was established in 1973 as a company to do the maintenance of equipment of Fujita Engineering, the parent company, which in turn was a company that installed equipment at construction sites. In the business of Fujita Engineering Group, it was also important to maintain the conditions of buildings and factories after they were built by providing the appropriate maintenance at the right interval. In the factories, the quality of parts and products had to be secured and the factories had to be operated without lapse. To achieve these goals, it was critical to keep the environment clean and maintain the machines. By performing maintenance periodically, they could meet with customers often and it in turn led to new businesses. Fujita Engineering Group could also provide the entire processes of construction to maintenance. The service made it difficult for competitors to enter the market. Within the group, Fujita Techno offered the service of inspection, maintenance, technical consulting of industrial machines. Specifics are listed in the Exhibit 1.

### ■ Service and process

Fujita Techno typically meets with customers, produces and sends the estimate based on the meeting to customers and starts the work after getting approvals from the customers. (See Exhibit-2.)

The work starts from the production of work plan, table of workflow, and design of necessary equipment. Necessary parts are ordered to suppliers and the work at the

customers' site begins.

In the customers' site, the equipment manufacturers do the inspection of the necessary tools and then the inspection and maintenance of the equipment installed in the site is performed one by one. When these activities are done, the final floor plan and the report are presented to the customers. The customers verify the actual work and then the invoice of the cost is sent to them.

Sometimes, the customers were in foreign countries and Fujita Techno wanted all of above steps to be performed by their staff in the respective countries. In reality, their local staff could only perform 70% of all activities at the site. Steps such as the production of work plan or final inspection required the presence of experienced Japanese engineers because foreign staff did not have enough capability nor experience.

## ■ The strength of Fujita Techno and the trust of the customers

Fujita Techno claimed that they are "Total Maintenance Company" that can handle overall maintenance, inspection and repair of various air-conditioning systems, industrial electronics equipment such as motor equipment, automatic transfer systems in storage facilities and monitoring systems of building.

They provided 24-hour, 365-day maintenance and support utilizing its proprietary remote-control monitoring system. The experience and know-how of its engineers enabled not just the inspection of the equipment requested by the customers but non-stop operation of entire factories by performing preventive maintenance as needed. As the result, the company was getting additional businesses in the sectors of food, precision machinery, and chemical, where stable operation of factories was critical.

## ■ A customer's request to maintain an overseas factory

The A Company is one of the old customers of Fujita Techno that manufactures precision parts and it asked Fujita Techno to do the maintenance of a factory in Y City in country X.

Fujita Techno planned to initially send its own staff to Y City and to train local staff. Yamada thought that this will be a more difficult task than what this appeared to be.

The A Company was asking Fujita Techno to provide the same level of service in Y City as in Japan. Furthermore, they asked that the cost of the service be in line with the cost in Y City.

Complying with such a request meant that Fujita Techno had to improve the capabilities of their local staff quickly.

## ■ Challenges regarding the quality of service in Y City

Yamada was highly aware of the difficulty of providing thorough and high-quality service only with local staff because past experience taught him some lessons.

Fujita Techno actually hired some employees of South East Asian countries that graduated with engineering degrees from Japanese universities in Niigata and Hokkaido for their local staff.

If an expert of motor equipment goes into a customer's factory abroad and noticed a water leakage somewhere, a Japanese expert would try to apply a temporary fix to the problem even if that work is not within his scope of work. A local expert, however, may not perform such a temporary fix because of his belief that his job is strictly limited to the repair of motor equipment related troubles. This difference comes from the understanding that when the scope of job is clearly stated in documents such as a job description, one does not have to do anything beyond what is written there. There is also the concern that if one performs tasks beyond what is written in a job description, it puts the employment of other person at risk. The thinking is that if a trash is on the floor and if someone picks it and throws it into a waste basket, a cleaning staff will lose his job.

If a Japanese motor equipment expert finds a water leakage and inquires a local staff about it, the local staff tend to reply that that was not his job. However, Fujita Techno's corporate strategy is to monitor the situation of customers' entire facilities and do whatever specific jobs necessary to secure the stable and non-stop operation of the facilities. What they are trying to provide is "overall operational quality" as seen from the

customer's point of view, which is only possible by understanding the process of production and service of the entire facility. Yamada felt that it was quite difficult for local employees to reach this level of understanding.

Local staff knew very well about how to solve technical problems in the area of their expertise that they learned in the colleges. They did not care much about small lapses on the production floor or situation of a facility that is not in their expertise but was obviously unusual. They did not bother to actively see if there is a change in the pulse of machines or factories. It was not that their knowledge was insufficient. Yamada thought that they just did not yet develop the way to apply what they learned in the colleges into the actual factories in adequately modified way. He thought the difference is also due to different environment in their schools and lifestyle and customs.

Yamada also knew that local employees are rather weak in their desire to prepare against possible troubles that may materialize in the future.

If an alarm goes off in the central control room of a customer's facility, a Japanese staff would try to find out why the alarm went off. If short-circuit occurred, he will try to find out the reason. He will definitely bring a multimeter with him before going to the spot of the trouble. A local staff may not get any tool to find out the cause of the trouble. He may only go to the spot of the trouble, switch on the breaker and get back. He tends not to think much about the cause of the trouble. He will not try to find out the cause even if the same trouble occurs again. Yamada observed such cases often times in the past and knew that what was lacking was not knowledge but training to see beyond short term future and to prepare for what could happen.

Yamada thought that the difference comes from the local staff's activities during the daily life. In his view, local staff did not bother to make small improvements that can be made or to prepare for some predictable problems. These things were something that cannot be acquired from regular lectures. On-the-job training (OJT) was the only way to go.

He thought that, to improve the situation, he needs to repeatedly tell the local staff "In this situation, a Japanese would think like this" and to emphasize the importance of how they cope and how alert they should be in the sites. He also felt that local staff can improve their awareness on risk. They did not think about what can happen without adequate safety precaution and were going to high places without helmets or carelessly walking under

heavy parts carried by cranes simply because they were wearing helmets.

If the local staff could not imagine what can happen and their interest to risk and company as a whole remains low, then teaching them about 5S (Seiri, Seiton, Seisou, Seiketsu, Shitsuke) or KYT (KIKEN YOCHI TRAINING or risk prediction training) will not produce much results.

The local staff's academic capability to calculate something applying formula was at the same level as Japanese staff. The local staff, however, were not much aware that there were other types of skill behind the high quality of Fujita Techno's services.

The issue was not about technology or its definition. The local staff did not have the ability to apply this other type of skill in the site and therefore could not provide the quality expected by customers.

There were some Vietnamese employees in one site near Takasaki, where Fujita Techno's headquarters is located. When they were taught about how to work in the site and how to maintain quality, they were able to understand what was expected and actually do things faster than Japanese employees at times. They graduated from vocational school in Vietnam and came to Japan but had the technical capability that is in par with Japanese and working well to maintain the quality level of Fujita Techno. Because of this example, Yamada thought that the key was not the level of knowledge but how they think and act on a daily basis. The employees from developing countries, because they had stronger desire to succeed, tend to be eager than Japanese when it comes to learning opportunities. Yamada was thinking how to cultivate this kind of attitude among local staff so that the quality of Fujita Techno standard could be provided in overseas sites by them. This could be done if they send experienced Japanese staff and that staff work intensively together with willing local staff. But this increased the total cost and could not satisfy the request of the customers.

The manufacturing company A, a customer, expected the same level of service in overseas sites and sometimes even higher, and how to cope with such expectation was another issue.

The company A was very much reliant on Fujita Techno and requested Fujita Techno to do the maintenance of a factory in Y City in country X. The local staff at the top management of that factory did not have much management skill and the company A

asked Fujita Techno to design mid-term plan of maintenance. It was possible for the Japanese manager of the company A to do the work, but this could upset their local managers because it was to push a Japanese plan to locals. The company A knew that their local managers, unfortunately, did not have the experience to draft a mid-term maintenance plan and asked Fujita Techno to do it for them. The drafting of mid-term maintenance plan was something not included in regular maintenance service of Fujita Techno and required their local staff to do more of other tasks by themselves.

The turnover rate of local staff was high and the experience of engaging in management matters made them even more desirable and accelerated their departure. The company A, too, experienced the departure of local staff that they trained extensively. The local staff knew that working with Japanese was a valuable skill in itself.

Fujita Techno's appeal was in the capability of its staff that was sensitive to the situation in the work site and could apply effective fix in the site. In order to let the customers recognize this strength, Fujita Techno encouraged customers' factories to at least try using Fujita Techno even on a trial basis.

This strength of Fujita Techno was cultivated through experienced Japanese employees' teaching of small things one can do in the site. The process did not include any difficult technology or work method but started from the basics such as how to use tools, how to hold them, the points to apply the tools, etc., repeatedly.

Japanese employees used not to teach the local staff the basics such as why particular tool has certain shape or how to use it. As the result, many local staff could not handle the tools adequately at the work sites.

Such a situation indicated that there is a need to teach both the structure of tools and how to use them as situation requires. It meant that the teaching process may have to extend into private time, which could make it an issue of culture. For example, operation of clean rooms in food factory and precision machines required maintenance of clean environment and the habit of washing hands every time after one goes to restroom. It is also the difference of knowledge and how to use the knowledge. They taught Pi in schools, but local staff were not good in actually using Pi at work.

There were cases in which explanation and guidance of certain operation was made to local staff and they said they understood and could answer some questions about the

procedure. The next day, they go to the work site but could not do the work as expected. They could not make the necessary adjustment of operation that were important in getting things done in the real world. Sometimes, the requirement in the work site was not just to perform standardized work but some irregular work or combination of different works. These works required capability to adjust what was learnt to fit the situation in the real world.

## ■ The thought of the manager in the local operation

Hashiba was Fujita Techno's Japanese person in charge of maintenance for the company A in Y City of country X. He was trying hard to provide the same level of service as in Japan to the company A together with the local staff.

Hashiba was in the current post since the beginning, and his view was that the local staff had some years of experience in the job, but not quite experienced or knowledgeable in the work of maintenance. They only learnt about superficial aspects of the job and could not perform the job at the same level as Fujita Techno people in Japan and did not pay much consideration to quality and detailed issues.

Hashiba thought that for the local staff to get the level of skill expected in Fujita Techno, communication was the biggest factor. When Japanese employees teach in country X, they usually used English but their English was not fluent. They often used some Japanese words and the little English words they knew to go on with the training sessions.

Hashiba thought that, in addition to language, there was an issue of how much they wanted to understand what the others were saying.

In order to improve the quality of work, they had to communicate detailed nuance and delicate adjustment and communicating those details seemed to be the key.

One of Hashiba's concern was the different attitude towards work between the local staff and Japanese. For local staff, the priority was religion first, private life second and work third. There was a fundamental difference with the Japanese, who put lots of value in their work and had strong sense of responsibility.

For example, local staff will not answer telephone calls coming after 5PM, which is their returning home time. Even when there is a trouble in their workplace, they will go home after 5PM.

Fujita Techno wanted to change this priority and paid employees a higher salary based on the rule that when an employer pays certain level of salary, it does not have to pay overtime until 8PM. They set the salary high with the expectation that when there was a trouble, local staff would stay until it is solved.

On the other hand, local staff tended to change job once they find a better paying job. There were also people who tried to get a raise by just saying that they were approached by another company with a higher salary.

## ■ Gunma Prefecture Takasaki Technical Center

Fujita Techno had a Technical Center near their headquarters in Takasaki City, Gunma Prefecture. The Center had equipment for technical training inside and they trained their employees there.

Hashiba thought that he could send the overseas local staff to this Center to let them get the basic training. This in turn will make it possible to provide the quality service of Fujita Techno in the customers' sites outside of Japan.

In the overseas sites, they could not provide training of equipment by manufacturers in Japan. Therefore, local staff could not learn how the machines work or basic structure of machines and could not do even a simple job sometimes when they go a customer' site. In Fujita Techno's Technical Center, they could provide the same training provided by equipment manufacturers. When overseas staff come to the Center, they could see the actual machines and get explanation about what they were expected to do in a more comprehensive way.

It was important to show the overseas staff the detail so that they could make the connection between what they learned on paper and how the machines worked in the real world. In the Technical Center, they could also show the overseas staff how they worked with each other in the sites in Japan so that they could actually experience what the

Japanese instructors wanted to teach them back in their home country.

In most of the customers' sites outside of Japan, the customers did understand that the logistics conditions and some business practices were different and were somewhat flexible on the timing of maintenance. On the quality front, however, they expected Fujita Techno to provide the same level of quality as in Japan and no compromise was accepted.

Outside of Japan, some of the materials used for maintenance were different from specifications in Japan. Therefore, issues deriving from such differences were tolerated but they had strong expectation that Fujita Techno will enable 100% continuous and stable operation of the facility in the end.

The customers of Fujita Techno were suppliers to global companies such as Apple and Intel and the customers' facilities had to comply with the auditing standard of those global companies. Fujita Techno's maintenance and inspection also had to be similarly stringent as the result. For example, the room temperature had to be kept within pre-determined range and equipment had to be operated in the designated way. The required level of service was made possible with Fujita Techno's meticulous maintenance that aimed for continuous and stable operation of the site. The customers were aware of the difference and that was why they trusted Fujita Techno.

The customers dealt with global companies and had to comply with their maintenance standard and they needed the high-quality maintenance service of Fujita Techno. Hashiba was starting to think that the maintenance cost of Fujita Techno, which was higher than competitors', will be accepted by the customers as the need of "global standard" service increases.

## ■ Securing the quality in the overseas sites

Yamada was also thinking what measures they could take towards the future to maintain the quality of Fujita Techno's maintenance abroad.

Fujita Techno's maintenance quality was based on technical training provided on top of the basic education in Japan. It was clear that if they give only the technical training without the basic education to local staff, the same level of service cannot be expected. If

the training of local staff had to start from the basic education, it would require long time and their cost will increase because additional staff had to be sent from Japan. Should he start from the Japanese style basic education and add technical training, or, like some other companies are doing, utilize tools of basic education such as Kumon, or focus on language and communication to improve the communication between local staff and Japanese expert to transfer know-how about the small detail?

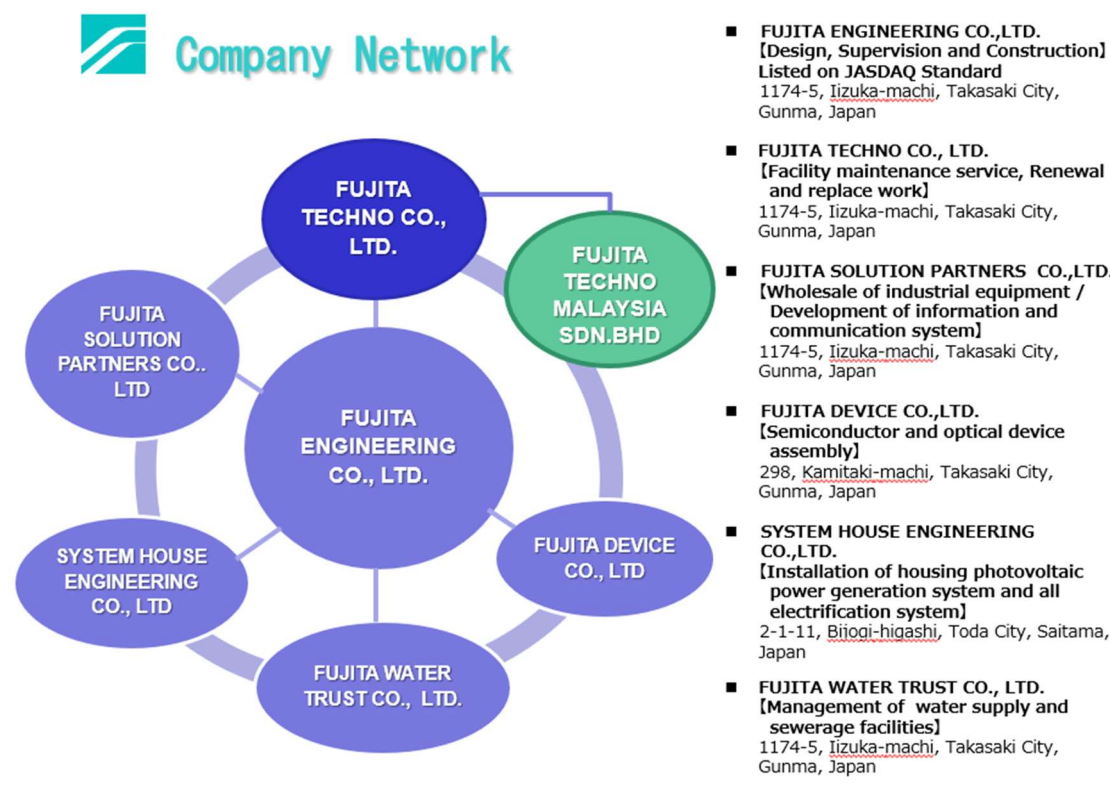
In the end, the choices to improve the practical capability of local staff were either to start from the Japanese style basic education and give training, which would take a long time, or teach language and communication skill to selected fast-learning local staff and transfer the critical skill to those chosen ones from experienced Japanese staff.

The former will require long time and the effect will be gradual but they could create a pool of people with the basic education and by further providing them technical training, company-wide improvement of technological level can be expected in 5 years. The latter approach of selecting fast-learning staff and teaching them not just Japanese but Japanese custom and their way of thinking so that they can communicate with Japanese at a higher level looked to result in faster improvement. The danger of this approach was that those staff, equipped with higher skill, will move away to other companies offering higher salaries.

Japanese staff also need to learn local language to spontaneously conduct daily conversation with local staff and to make them more willing to learn what the Japanese want to communicate. This was not something Fujita Techno taught to their Japanese engineers in the past and was not an easy thing to do.

Yamada was wondering if he should go for the long-term plan of starting with the basic education and create a pool of local staff capable of delivering Fujita Techno quality or go for the short-term plan of teaching the Japan-quality technology and quality to fast-learning staff and let them do the training of other local staff or to go for other plan.

Exhibit 1



 **Company Outline**

|                       |                                                       |
|-----------------------|-------------------------------------------------------|
| ■ Company name        | FUJITA TECHNO X Country.                              |
| ■ Company No.         | -----                                                 |
| ■ Established         | 7 <sup>th</sup> <u>February</u> , 2018                |
| ■ Capital             | 1 million -----<br>(as of <u>31th</u> December, 2018) |
| ■ Shareholder         | FUJITA TECHNO CO., LTD. (100%)                        |
| ■ Managing director   | Minoru Yamada                                         |
| ■ Number of employees | 7 (as of 1st <u>October</u> , 2019)                   |



## Description of Business

Our description of business is as follows:

- **Maintenance service, repair, modification, diagnosis and proposal for energy-saving measures of equipment and facilities**
  - HVAC systems
  - Plumbing and sanitation systems
  - Electric equipment
  - Industrial equipment
- **Renewal and replacement work of equipment and facilities**
  - Machine and equipment installation
  - Plumbing work
  - Electrical work
  - Fire fighting equipment work
- **Facility management service**



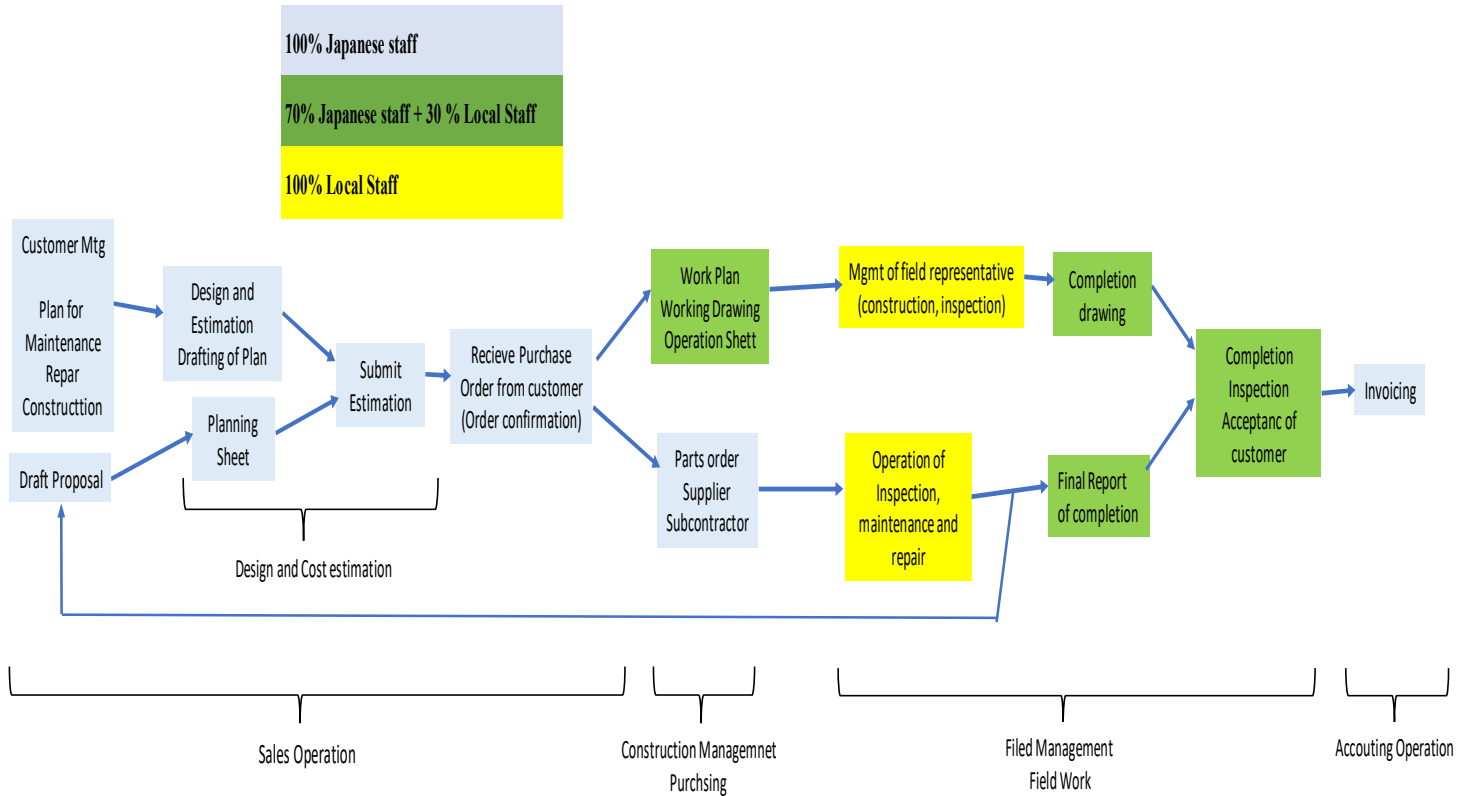
## Main Handling Equipment

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| <ul style="list-style-type: none"><li>■ <b>AIR-CONDITIONING EQUIPMENT</b><ul style="list-style-type: none"><li>• Air handling units</li><li>• Total heat exchangers</li><li>• Packaged air-conditioners</li><li>• Spot air-conditioners</li><li>• Room air-conditioners</li><li>• Fan coil units</li><li>• Panel heaters</li><li>• Warm air heaters / Fan heaters</li><li>• Humidifiers / Dehumidifiers</li><li>• Filter units / Ventilators</li><li>• Air curtains</li></ul></li><li>■ <b>HEAT SOURCE EQUIPMENT</b><ul style="list-style-type: none"><li>• Absorption type hot and chilled water generators</li><li>• Cooling tower systems</li><li>• Chiller units</li><li>• Warm water boilers / Steam boilers</li><li>• Cogeneration systems</li></ul></li></ul> | <ul style="list-style-type: none"><li>■ <b>INDUSTRIAL ELECTRICAL MACHINE</b><ul style="list-style-type: none"><li>• Hoist cranes</li><li>• Motors</li><li>• Electric power generators</li></ul></li><li>■ <b>AIR AND WATER SUPPLY EQUIPMENT</b><ul style="list-style-type: none"><li>• Air compressors</li><li>• Air dryers</li><li>• Air tanks</li><li>• Oil cleaners</li><li>• Drain treatment equipment</li><li>• Number control systems</li></ul></li><li>■ <b>EXHAUST TREATMENT APPARATUS</b><ul style="list-style-type: none"><li>• Scrubber</li></ul></li><li>■ <b>REFRIGERATION/FREEZING FACILITY</b><ul style="list-style-type: none"><li>• Refrigerators for business use</li></ul></li><li>■ <b>AUTOMATIC CONTROLLER</b></li><li>■ <b>FIREFIGHTING EQUIPMENT, etc.</b></li></ul> |
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*(Data from Fujita Techno Inc. and modified by author)*

Exhibit 2

Business Process in X Country

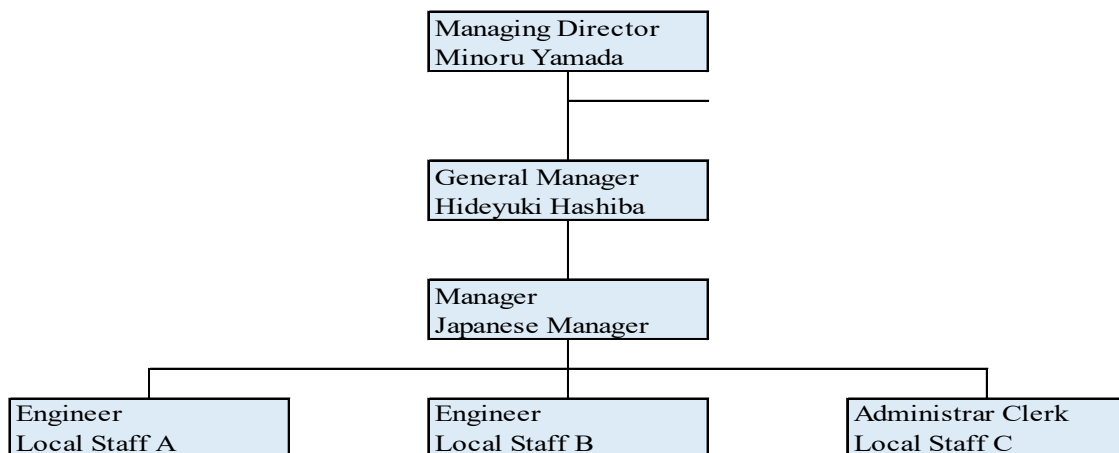


(Data from Fujita Techno Inc. and modified by author)

Exhibit 3

**FTX**

FUJITA TECHNO X Country Ltd



(Data from Fujita Techno Inc. and modified by author)

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