Chapter 4
The Performance Measurement and Strategic Analysis


Since 2001, Production Planning undertook the coordination of Supply Chain Management activities in XYZ Technology (M) Sdn. Bhd. and the company has enjoyed a lot of achievement. This research will analyze whether the achievement really reflect the good performance by using Stewart (1995) research model. For this purpose, this research will compared the result before and after March 2001.

4.1 a) Plan

Base on the weekly seihan activity that has been carried out by the Seihan Control group, there was a drastic drop in the job order lead-time.

<table>
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<tr>
<th>Before</th>
<th>After</th>
<th>% Improvement</th>
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<tr>
<td>15 Week</td>
<td>7 Week</td>
<td>53</td>
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Figure 4 a: Order Lead-Time Comparison

From the figure 4 a: Order Lead-time comparison, the XYZ Technology (M) Sdn. Bhd. sales company in US receives a big improvement in the order lead-time reduction. Compare before the implementation of the Supply Chain Management in XYZ Technology (M) Sdn. Bhd., there is a 53% lead-time reduction. Now there is only 7-week lead-time from order to receiving the cargo. The shorter order lead-time help sales company to reflect accurate on market condition and avoid holding wrong inventory at wrong
time. The shorten order lead-time indirectly increase customer satisfaction.

4.1 b) Source

Another factor that determined the success or failure of the Supply Chain Management is the sourcing activities. The ability to source cheaper and quality products results in the production of more cost competitive product. Besides the cost related issue, the sourcing activities must gain a strong support from supplier to supply the part in any condition of market or during the introduction of new model.

For the sourcing activities, it is rather difficult to determine the performance base on the financial factor. In view of this, the writer has come out a few criteria to evaluate the sourcing performance in the Supply Chain Management.

<table>
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<th>Criteria</th>
<th>Strategies</th>
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<tr>
<td>a) Information Sharing</td>
<td>&quot;SPRIT&quot; System</td>
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<tr>
<td>b) Involvement</td>
<td>Design, tooling &amp; moulding stages</td>
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<tr>
<td>c) Problem assistant</td>
<td>* Middle man to solve raw material issue</td>
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<td></td>
<td>* Design technical support</td>
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The figure 4b: Sourcing Activities Evaluation, its clearly shown that the sourcing persons in XYZ Technology (M) Sdn. Bhd. has done a good job heavy involve the supplier to the XYZ Technology (M) Sdn. Bhd. activities. The supplier start involve from the proto type until mass production (MP). The involvement of the suppliers from the early stage reflects the supplier's commitment to make the model a success.
Besides the great involvement, the information sharing between suppliers and XYZ Technology (M) Sdn. Bhd. through "SPRIT" system will enhance the total supply chain system. By sharing information, the supplier's will able to make better decisions on their production and delivery conditions. They are also able to reduce the possibility of holding wrong inventory.

Beside involve the suppliers to the XYZ Technology (M) Sdn. Bhd. operation, the sourcing also function as middle person role. The help the supplier to solve the raw material shortage issue by borrowing from other suppliers. They understand, if supplier fails to commit on the delivery, XYZ Technology (M) Sdn. Bhd. would also fails to commit the delivery to their customer. This is why "win-win" always applies in XYZ Technology (M) Sdn. Bhd. sourcing activities.

Last but not least, we should not ignore the ability of the sourcing to bring down the P/O lead-time to 5 working days. Base on the figure 3.4 i: Part P/O Lead-Time Innovation, the sourcing group was able to negotiate from 0% of 5 working day P/O on year 2000 to 83% of 5 working day P/O on year 2001. This is a good improvement on the total supply chain channel. The shortened P/O lead-time will compress the total cycle time in the supply channel and indirectly allow for more sensitivity of Seihan Group to react on market change.

4.1 c) Assemble

From the strategies analysis in the chapter 3, we noticed that assembly or production plays a large role in the total product lead-time reduction and the model change reduction. These 2 factors will determine the total order lead-time.
Before the implementation of the Supply Chain Management, there is no emphasis on the production lead-time. Before 2001, the production needs 6 hours to produce a set of DVD. After the emphasis on the lead-time reduction, the production has come out a “Sapphire Operation” concept. By using the “Sapphire Operation”, production able to reduce the lead-time around 75%: this is a good achievement. This was reflected in the figure 4 c: Production Lead-Time (Sapphire Operation).

As mentioned on Chapter 3, the Cell System was introduced to support the AMEX operation. By introducing the Cell System; the model change lead-time has reduced 56%. The shorten time to change model will increase the flexibility of production to adopt market change.

4.1 d) Delivery

The improvement delivery performance will directly affect the customer’s satisfaction towards the company. The writer will take the delivery lead-time and inventory reduction performance to evaluate the Supply Chain Management performance of XYZ Technology (M) Sdn, Bhd. in customer satisfaction issue.
Refer to the figure 4e: Delivery Lead-Time (SEL), it is shown that there was 57% cycle time compression in delivery compared to before the implementation of the Supply Chain Management in XYZ Technology (M) Sdn. Bhd. The 57% improvement of the lead-time is due to the effective strategies that been carried out in Supply Chain Management such as weekly seihan and AMEX operation. Besides that, the strong commitment from each party involved in this supply chain also played a key factor.

Beside the positive effect to the customer, the Supply Chain Management indirectly provided a positive effect to XYZ Technology (M) Sdn. Bhd., especially in the inventory.

From the figure 4f: Inventory turnover, the inventory turnover for raw material achieve 71% reduction. This large reduction is due to the strong commitment from the supplier.
On the downstream operation, customers have also gain and benefit from the Supply Chain Management. Their inventory reduces around 22% compared to before the implementation. The reduction of inventory will reduce their capital to tie up with unproductive activity.

From the 4 aspects of performance, the writer notice that implementation of the Supply Chain Management has given the XYZ Technology (M) Sdn. Bhd. a positive impact. It provides a vital few impact into financial and non-financial such as total cycle time reduction and strategies alliance with supplier.

4.2 Competitive Analysis

In order to analyze the business strategy level of the competitiveness for XYZ Technology (M) Sdn. Bhd. in Supply Chain Management, this research has using Porter’s 5 Forces Model and Value Chain Analysis.

Using the “Porter’s 5 Forces” model in figure 4.2, this research project paper will analyze the Supply Chain Management in 2 forces that is bargaining power of suppliers and bargaining power of buyers. The reason only 2 forces been analyze is due to the natural of Supply Chain Management itself is looking at the relation of suppliers and buyers.
4.2 a) Bargaining Power of Suppliers

The strategic alliance that been implemented by a lot of Japanese companies become an issue of some researcher. They believe strategic alliance will cause the company fall into single sourcing then indirectly will weaken the company negotiations power which will effect the pricing and quantity of delivery. They believe company should remain arm-length relationship with the suppliers. The company should protect their prerogatives against suppliers so that their negotiations power will increase. There should be a clear border between suppliers and purchasers. They believe purchase price should go through lower price of quotation.

No doubt that arm-length relationship of sourcing will stronger the negotiations power of purchasers, but on the other hand it might incur red tape in the procurement operation. It takes longer time to complete the purchase flow. Production takes longer time to launch a new model. Suppliers are not going to entertain any delivery changing. Finally, both party will loss and the relationship would not last longer.

In XYZ Technology (M) Sdn. Bhd. procurement direction, they believe on long-term relationship. From the chapter 3, it has shown a strong involvement of suppliers in the XYZ Technology (M) Sdn. Bhd. daily operation, such as tooling and moulding, supplier optimization, “SPRIT” system and ASAP warehouse. In the return, suppliers are supporting 5 working days lead-time of part purchase order from XYZ Technology (M) Sdn. Bhd. All of this activities was carried out with the mutual understand that the survival of each company was depending on each other.
XYZ Technology (M) Sdn. Bhd. able to create of culture of trustworthiness in the bargaining power with suppliers. This culture is very helpful to support the total Supply Chain Management

4.2 b) Bargaining Power of Buyers
In order to increase customer’s satisfaction, there is a need to shorten the delivery lead-time. Knowing the importance of delivery lead-time, XYZ Technology (M) Sdn. Bhd. has place great emphasis on the downstream operation.

The main activity of the downstream operation was focusing on the order cycle time compression. XYZ Technology (M) Sdn. Bhd. believes by compressing the order cycle time will increase the accuracy of the customer’s forecast, which finally will reflect the actual market demand. Accuracy of forecast will reduce the customer risk in holding the wrong inventory. From the chapter 3, it has shown that XYZ Technology (M) Sdn. Bhd. was focusing on the order cycle time compression such as weekly seihan, AMEX system and direct shipment (CDS and CIP). Capability and flexibility of XYZ Technology (M) Sdn. Bhd. in the downstream compression will increase the customer’s satisfaction and confident toward them.

After analysis the 2 forces by using Porter’s 5 forces, it has shown that XYZ Technology (M) Sdn. Bhd try to balance up the negations power of suppliers by emphasis on trustworthiness and win-win concept. In the buyers bargaining power, it tries to balance up by increase the customer satisfaction and confidant. Both of these strategies play an important role to balance up between negative and positive forces.
4.3 Value Chain Analysis

The Value Creating Frame Work will analyze the value added activities that has carried out by XYZ Technology (M) Sdn. Bhd. to support the implementation of Supply Chain Management. Refer to Figure 4.3: “Value Creation Frame Work”, the Value Creating Frame Work will divide into 9 sections to analyze the value creation activities. The section such as below:

4.3 a) Inbound Logistics

In order to smooth the total material flow operation, the XYZ Technology (M) Sdn. Bhd. has place very strong emphasize in the inbound logistic. XYZ Technology (M) Sdn. Bhd. has implemented the JIT operation to reduce the inventory holding and increase the efficiency of material handling. Beside the "SPIRIT" system has able to support procurement and suppliers make accurate part delivery, which finally reduce the part purchase lead-time.

In summarize, the effectiveness of upstream lead-time reduction in Supply Chain Management has clearly reflected in the inbound logistics operation.

4.3 b) Operations

The production of XYZ Technology (M) Sdn. Bhd. also has shown a good innovation in the total production lead-time reduction by introduce the "Sapphire Operation". After implement the "Sapphire Operation", production cycle time has reduced 75%.

The strong operation is the pillar of the total Supply Chain Management operation. The ability of the XYZ Technology (M) Sdn. Bhd. to strengthen the operation created a strong value added to Supply Chain Management to over come the issue of market fluctuation.
4.3 c) Outbound Logistics

In the total supply channel, outbound logistics or distribution channel play an important role to determent the success or failure. Knowing the important of the outbound logistics, XYZ Technology (M) has concentrated to increase the efficiency of the distribution channel by enhancing the downstream operation in supply chain.

XYZ Technology (M) has implemented the “Direct Shipment” and “AMEX” System to reduce the delivery lead-time. This activity has been carried out with the objective to increase customer confident and satisfaction toward XYZ Technology (M) Sdn. Bhd.

4.3 d) Marketing & Sale

Although XYZ Technology (M) Sdn. Bhd. do not have marketing and sales department, but this function has been carried by Seihan Group.

In order to achieve customer’s satisfaction, Seihan Group has place a great emphasis on the job order cycle time compression. Through weekly seihan, AMEX system and direct shipmen, the job order cycle time has been compress by 53%. The success of the time compression in the job order wills increase XYZ Technology (M) Sdn. Bhd. value in the customer point of view and indirectly creates customer satisfaction.

4.3 e) Services

In order to achieve an excellent value for customer, XYZ Technology (M) has strongly emphasis for their quality products. Produce a quality product to customer is always their motto and their core competency. To ensure this core competency, XYZ
Technology (M) Sdn. Bhd. is very sensitive and close monitor from the market feedback.

4.3 f) Procurement
Commitment from the suppliers places a great value to the Supply Chain Management. In order to strengthen suppliers commitment toward XYZ Technology (M) Sdn. Bhd., procurement has implemented strategic alliance with suppliers such as investment in tooling and moulding, Supplier Optimization, ASAP warehouse and system linkages in "SPRIT".

By involving suppliers in the XYZ Technology (M) Sdn. Bhd. operation, suppliers' will committed toward XYZ Technology (M) Sdn. Bhd. total operation. These make XYZ Technology (M) Sdn. Bhd. able to adapt to any market fluctuation.

4.3 g) Technology Development
Win-win situation is a need for the strategy alliance. Together with suppliers, XYZ Technology (M) Sdn. Bhd. has put in a great effort to develop a technology. These technology development activities can be shown through the investment of tooling and moulding for each model. By having this technology development, both parties are enjoying the benefit of the strategy alliance effort.

4.3 h) Human Resource Management
The production has emphasis on the human resource development by train a lot of multi-skills operators. This multi-skills operator was use in the cell system to reduce the model change lead-time. It was a positive value creation to the total Supply Chain Management.
4.3 i) Firm Infrastructure

With the strong IT infrastructure, XYZ Technology (M) Sdn. Bhd. able to implemented the “sprit” system to all the suppliers. The “SPRIT” system is one of the ways of information sharing which is important for Supply Chain Management to carry out smoothly.

By using the Porter’s 5 Forces and Value Creation Framework, this research project paper has clearly shown the XYZ Technology (M) Sdn. Bhd. has using the integration of low cost and differentiation in their business level strategies for the Supply Chain Management activities.