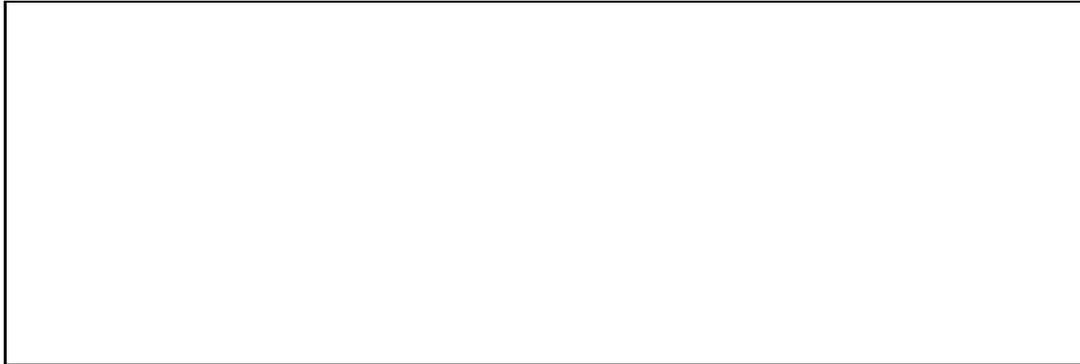


## **Role of Vendor Management System – An Analytical study**

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### **1. Introduction**

Vendor-management is a family business models in which the buyer of a product (business) provides certain information to a vendor (supply chain) supplier of that product and the supplier takes full responsibility for maintaining an agreed inventory of the material, usually at the buyer's consumption location (usually a store). A third-party logistics provider can also be involved to make sure that the buyer has the required level of inventory by adjusting the demand and supply gaps. It can understand that in-order to ensure that a vision is met the design idea needs to transformed into a real product along with communication and other collaterals. For this to happen we work closely with the client to source and evaluate the key vendors and technologies. We help map out the production schedules and manage the production phase to ensure streamlined production & manufacturing. It is also useful to manage Production that

oversees the process to ensure Quality and time-bound end results.

### **2. Objectives of the Study**

The supplier performance has a significant effect on the competitiveness in implementation of vendor management system and entire supply chain. Considering, the importance of supplier performance as a part of Just-In-Time implementation, the Just-In-Time will not be successful if no good cooperation from supplier in term of quality and business point of view. This paper deals with how to implement the vendor management system and to evaluate the vendor and select the vendor based on different parameters.

### **3. Scope:**

- \* Vendor Scorecard System applies to a select **best** suppliers
  - \* Zero defect.
  - \* To assess the supplier.
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\* Save time.

\* To improve the supply chain.

#### 4. Issues in Vendor Management

: The vendor management system is for supporting the good quality of material, delivery on time, good service and cooperation, reasonable price, strong and close relationship to continuous improve, etc.

The Manufacturing system is included internal manufacturing management system, quality management system, preventive maintenance, production scheduling and planning, capacity planning, supporting tools such as SPC, etc. All activities are conducted to achieve the customer satisfaction.

: The customer requirement will be effect to the manufacturing system and vendor management system. The customer satisfaction is treated as the most important key success for company and customer feedback is important for company improving. In this research, we studied on the Vendor Management System (VMS), and propose the model for the full improvement system other than selection and evaluation process, we also included the maintaining process for supplier development that are proposed phase by phase.

): As the Vendor Management System (VMS) is the one of key success to Quality Manufacturing Excellence, several knowledge had been discovered to support and control to get the closer relationship from suppliers or vendor and manufacturer. Supply chain management is one of several ideas that try to point out the important of supplier – manufacturing – customer relationship.

The Vendor Management System (VMS) is proposed for selecting, measuring, analyzing, developing and maintaining the supplier's performance.. Several firms try to development their supplier, some firms did evaluate the supplier performance such as measure incoming quality material by lot accept/ reject, some firms did select the supplier by AHP model or benchmarking, but none have fully developed the supplier as proposed VMS model. The followings are the fully system of supplier development that it is call Vendor Management System (VMS).

#### 5. Supplier qualification phases

##### A. Supplier Qualification (SQ):

The supplier qualification phase will be included the selection of supplier in case the new supplier, the firms must have the system to select the appropriate supplier to deal business. The appropriate supplier is the supplier who has the

##### a). Information Interchange

- Specification defining the product requirements: By firm
- Specification defining what quality-related activities are expected of the : By Firm
- Constrain of material production from provided

##### b). Specification: By supplier

- Inventory plan, delivery plan and scheduling

##### C). Assessment of Supplier

- On capability to meet quality requirements and to qualify the supplier's design through the evaluation of product samples
  - On Quality System or supplier survey that can be done by visiting supplier site
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or questionnaire Mailed - On manufacturing process such as the process capability analysis to see how consistency of supplier's production

**d). Quotation Process** - Provide the quotation as the required time: By supplier

**e). First Submission Sample Process**

- Provide the first sample submission as required specification: By supplier

**f). Selection of Supplier**

- Collect the supplier data as above items  
- Select the supplier by using the firm's techniques such as benchmarking, scoring, etc.

**B. Supplier Performance Measurement (SPM)**

After the selecting process of qualified supplier, the business dealing now is started. The suppliers who are the partnership of the company must be measured. The incoming quality control/assurance is the most important role of this phase. The major purpose of this phase is to know the performance of supplier in term of mass production, shipment, delivery, price, etc other than the quality system as first qualification phase. In this report, we proposed 2 aspects of measurement.

**I. Quantitative Aspect or Product**

**Aspect:** The product aspect is included all criteria concerned to product lot by lot submission such as

(a) Incoming performance is the lot by lot performance as time to time acceptance.

(b) The first sample submission performance is the first time that the company accept the product from supplier and inspect after provide them the requirement and specification. In the other way, if the first submission is

always fail and resubmit several times, the company should revise those supplier capability again. Also the resubmission process cause the delay submission time of company to customer that also caused the delay to the entire chain.

(c) Cost of poor quality, the poor product quality can cause the higher cost to customer such as the sorting cost of poor quality product. The cost of poor quality also included the defective finished goods in case the poor quality of product were used, the late delivery to customer due to the poor quality of material, etc. All this cost, the company should consider in rating the performance of supplier.

(d) The Delivery Performance is one of the most important of measuring the supplier performance as of the late delivery can cause the late submission to all entire supply chain.

**II. Qualitative Aspect**

1.The time response of request for quotation

2.The time response in term of solving problem

3. Organization/ Technology and Quality system measuring The expectation time response or target date can be set by the company.

**C. Supplier Analysis for Improvement (SAI)**

The supplier analysis phase can be done after the company measured the supplier performance in 2 aspects as proposed in Phase II, the analysis of supplier will be looking into the rating result from measurement that may be conducted every quarter, biannual, annual, etc. The company should analyze the weakness of vendor or what the company would like them to improve in both quantitative and qualitative measurements.

**D. Implementation for Supplier**

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### **Development and Improvement (IDI)**

The development process is the process that the Vendor Management Team will implement the analysis result from C to vendor system. The VMT should communicate to vendor what is their status of performance, what is the weakness or need improvement item. The detail should be in objective evidence that they can understand and perform the comment easily.

The key success of this Phase is the Vendor Management Team (VMT) should set the target and objective of supplier improvement action and rate of improvement. The setting target should be realistic and commitment between the company and supplier.

### **E. Maintaining the Supplier Performance (MP)**

The maintaining phase will be implemented when the supplier performance is achieved the Satisfied Level (SL). This Satisfied Level should be set up by the Company Goal of Supplier Performance, all the expectations should be communicated to vendor and the vendor should acknowledge themselves to reach this Satisfied Level.

Even the vendor reached the Phase E Maintaining stage, it doesn't mean that the Vendor Management Team (VMT) will stop taking action. All the measurement process should be done to know whether all quality performance is really maintained and the periodical review is still necessary to perform. The closely working between company and suppliers is the one of key success to achieve the good supply chain performance.

## **6. Implementation steps of the**

### **Vendor Management System (VMS) to Supplier**

The supply chain management is still new management strategy in implementation to The organization, even we knew that this theory is not new in the world. In implementation to suppliers, the company must spend time to communicate, educate, well - train the suppliers to have the same understanding and commitment of the implementation. The planning steps in implementation of each company are different, but one thing there must be the same is the vendor partnership must be ready to provide the cooperation and get involves. Because the supply chain management is the commitment and cooperation between supplier and company to change their system starting from the stock keeping, foresee planning, cost reduction, etc that in long term the benefit will occurred to both company and suppliers. As we know that the company cannot achieve all supply chain programs if the supplier still has a quality problems, delivery problem, etc. The material and delivery problem caused the difficult to forecast anything starting from launch the production till commit the delivery schedule to customer.

The company will never know which incoming lot will be rejected or create the problem during production or if the delivery performance of the supplier is not consistently, some are on time or some are missed how can company commit to the customer. These are all the obstacles to develop the supply chain management in company.

## **7. Analysis of Data and Interpretation:**

### **A. Delivery Scoring (On Time To Request)**

OTTR is the percentage of parts that are received on the requested date, or no delivered on time to the requested date more than five working days early, is on the Purchase Order. A shipment considered to be "ON TIME".

**Table-1: Delivery Scoring**

Points	On Time To Request	TPD (In days)*
15	OTTR is 100% to 98%	0
10	OTTR is < 98% to 95%	1
8	OTTR is < 95% to 90%	2
6	OTTR is < 90% to 80%	3
4	OTTR is < 80% to 70%	4
2	OTTR is < 70% to 60%	5
0	OTTR is < 60%	6

\* Time Period delay from the date of request  
 Source: Primary data

**B. Lead Time Scoring (LT)**

Lead Time is the agreed to number of days the Supplier will require to deliver product to customer when a purchase order is received. The supplier's agreed-to lead time for each item is entered into customer and can only be changed upon agreement between the Supplier and customer. The lead time score is based on the average time for all items received in that month. This score is not affected by the actual delivery dates.

**Table-2: Lead Time Scoring**

Points	Lead Time Record (LT)
15	LT is 5 days or less
10	LT is 6 to 10 days
8	LT is 11 to 15 days
4	LT is 16 to 20 days
2	LT is 21 to 25 days
0	LT is 26 days or more

Source: Primary data

**C. Quality Scoring ( Parts Per Million)**

Parts Per Million measures product quality through the number of defective parts per each million units.

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**Table-3: Quality Scoring**

Points	Parts Per Million (PPM)
15	PPM is 0 to 100
10	PPM is 101 to 500
6	PPM is 501 to 1000
4	PPM is 1001 to 5000
2	PPM is 5001 to 10000
0	PPM is greater than 10000

Source: Primary data

**D. Payment Term Scoring**

Suppliers that meet or exceed customers expected Payment Terms will receive 20 points. Suppliers that fail to meet the expected Payment Terms will receive 0 points.

**E. Supplier Performance Levels:**

Each supplier is ranked based upon their on-going performance.

**Illustrative example for the above process:**

**For the above parameters we can assume three companies A,B,C and**

**evaluate which vendor is best.**

**1. Delivery scoring:**

**A-** Supply the material after 1 day from the required date

**B-** Supply the material after 3 day from the required date

**C-** Supply the material after 2 day from the required date

**2. Lead Time Scoring:**

**A-** Delivers the material within 5 days

**B-** Delivers the material within 14 days

**C-** Delivers the material within 19 days

**3. Quality scoring method:**

**No of Units Rejected X 1,000,000**  
**Total no of Units Received**

Total no of units received: 20000

A- No of units rejected = 40      **PPM :2000**

B- No of units rejected = 10      **PPM: 500**

C- No of units rejected = 25      **PPM: 1250**

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Table:4: Quality Scoring of vendor

Parameter	A	B	C
Delivery Scoring	10	6	4
Lead Time Scoring	15	8	4
Quality Scoring	4	10	4
Total Scoring	29	24	12

The data shows that vendor A is best and it is observed that some companies can give preference to any one of the above parameter and they choose the vendor.

### 8. Conclusions:

From the above analysis, supplier who is performing well from the other suppliers can select. We can improve the quality of the supplier and can maintain the good relationship between the suppliers. It is necessary for vendor to acknowledge about the activities in vendor management system and criteria of measurement their performance. The supplier should achieve the preferred level, So that the vendor achieves zero defects. So from the vendor management system we can easily select the vendor based on the above parameters.

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