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VALUE STREAM MAPPING (VSM) ON SUPPLY CHAIN MANAGEMENT (SCM)

Value Stream Mapping (VSM) on Supply Chain Management (SCM)

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Abstract – Our paper wishes to present a strategy used to create an image about the informational and material flows of products and services. VSM is an analytical method.VSM adds value compared with the non-value added, and is addressing to all employees, to the management, suppliers and customers. In current scenario, many organizations are using this method because it identifies the key attributes from the production process, analyze them and provide some potential solutions for a better process.

Keywords: Value Stream Mapping, Lean manufacturing, waste, sustainability

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INTRODUCTION

Value stream mapping (VSM) is a diagnostic technique that originated from lean manufacturing principles. Its purpose is to identify value-adding and non-value-adding activities in the value stream. The main objective of value stream mapping is to identify processes that do not provide value, so that they could be streamlined and find areas of waste that could be eliminated. As society moves beyond lean manufacturing to sustainable manufacturing, however, the need for a more advanced tool has become more pressing. Efforts have been made to build upon VSM and develop a mapping tool that captures the sustainability of a manufacturing system.

Sustainability – Sustainability is meeting the needs of present without compromising the ability of future generation to meet their own needs. Value Stream Mapping builds upon traditional value stream mapping to find additional sustainability aspects of the product flow, such as financial, environmental, and community sustainability for supply chain network system.

Processes that are involve in supply chain management system of a product and do not provide value is called waste. Value stream maps document for the current state of the value stream as well as the future state and identify or define any gaps between the two.

Wastes - Reducing these wastes will save space/time/energy by:

• Cutting out activities that don't add value.

• Focus on the customers' needs.

• Make everyone's job simpler.

• Remove the stress and frustration of the 'day-job'.

• Contribute to continuous improvement for the business.

General example of a value stream map
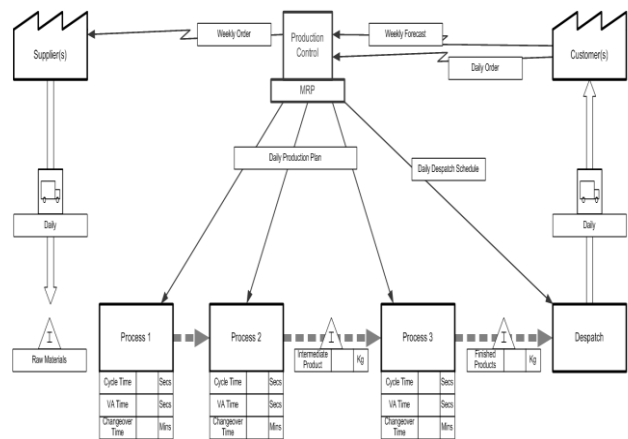
Value stream mapping can be applied within companies but is most effective when applied in the supply chain.

Steps to draw Value Stream Map

1. Make a record of customer, supplier and production control.

2. Record customer requirements on daily and monthly basis.

3. Calculate daily and/or monthly production.

4. Draw inbound and outbound shipping icons.

5. Add communication direction and its methods.

7. Find process attributes.

7. Add inventory locations and levels in days of demand and graph at bottom.

8. Add push, pull and FIFO icons.

9. Calculate and add working hours.

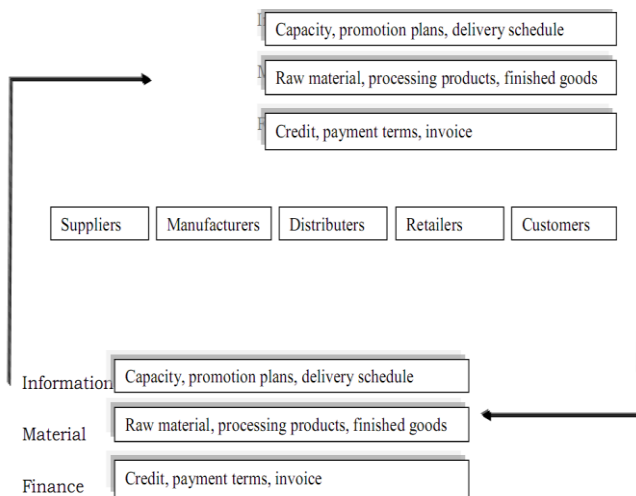**Key attributes of VALUE STREAM MAP in Supply management-**

Material flow - An approach to identify the flow of production of a product like flow of raw materials, description of its process the movement of the products.

Communication flow - In a company, Communication represents any kind of informational flow between all the elements involved into the process. Communications must have place at all levels of the organization, starting from operators heading to superiors and so on.

Time line-The main objective of time line is measure the process lead time and its cycle time.

Process lead time shows the total elapsed time from the moment raw material are received to the time the finished good are sent to the customer.

Total cycle time - shows the total amount of work from each process steps

| Capacity, promotion plans, delivery schedule |
| Raw material, processing products, finished goods |
| Credit, payment terms, invoice |

| Suppliers | Manufacturers | Distributers | Retailers | Customers |

Information | Capacity, promotion plans, delivery schedule |
Material | Raw material, processing products, finished goods |
Finance | Credit, payment terms, invoice |

Methodology- To analyze process sustainability with a Sus-VSM, a concise set of metrics must be determined for each area of sustainability (i.e. financial, environmental, and community).

Financial Metrics-

- Internal controls

- Return on investment

- Asset management

- Resource development

Environmental Metrics-

- Decrease use of all resources (i.e., energy, water and materials)

- Decrease emission generation and pollution

- Decrease waste and rest material from production

- Adjoin value to byproducts

Community Metrics-

- Comprehensiveness

- Fairness/Justice

- Assortment

- Opportunity

- Service

CONCLUSIONS

This paper obtainable research to expand a method of adapting standard Sustainable VSM to be used on the supply chain management and capture performance for the three aspects of sustainability: financial, environmental, and community.

Value stream mapping is widely used in organizations to find out the processes that do not play an important role to provide value, so that they could be updated and find areas of waste that could be eliminated.

Metrics such as raw material and water usage, energy consumption, were all taken from standard Sustainable -VSM directly.

However, other metrics, such as product defect, diversity ratios, injury rate, and worker training strength were all added to provide a complete sustainability picture of the supply chain.

-References-

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