Unit 8: IT in a Supply Chain, LH 3

IT 229: IT Entrepreneurship and Supply Chain Management

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Outline

- The role of IT in a Supply Chain and its network design
- Supply chain IT Framework
- Supply chain Macro process and IT
- Future of IT in supply chain
- Risk Management in IT
- Supply chain IT in Practice

- A well managed supply chain links the suppliers, manufacturers, distributers and customers by a suitable information system for controlling across boarder in order to achieve optimum productivity, overall satisfaction and joyful relation at cheaper cost.

- Quick and effective information system helps manager to understand the ***customer response***, ***their demands***, ***inventory*** in the stock, ***how much to be produced*** and ***where to deliver and when***?

- Here comes the role of internet, which is considered as a cheapest inter-organizational information system, which helps in aligning the interdependent strategies to achieve cooperative rather than competitive role of SCM partners.

Need of IT

- Information technology offers many opportunities for companies to cut cost and improve responsiveness to customer's needs. Some of the positive points of IT enabled services are:

- IT is comparatively less capital intensive.

- It is environmental friendly and clean.

- It is not location specific and can be undertaken from anywhere.

- It does not require expensive infrastructure facilities.

Results of IT solution

- We have observed that the Indian automobile industry is booming and internet is being utilized in automobile industry in a big way. Internet trying to interlink suppliers, manufacturers , wholesalers and retailers to have :

- Better control on inventory at various levels of supply chain.

- Better utilization of manpower.

- It keeping track of inventory

- But it is fact that internet has influenced the whole business strategy whether it is policy or it is physical implementation. Some of the areas where's greater effect felt are given below:
- Communication
- Selection of vendors or partners
- Cost saving
- Reduction of lead times
- Improves product promotional activities

COMMUNICATION

- 24 hours communication throughout the year all over the world. because of internet communication there are saving in manpower, stationary, postage and journey fare.
- Quick exchange of ideas and expertise, customers' feedback collection becomes easier

B) SELECTION OF VENDORS OR PARTNERS

- Suitable vendor selection from many vendors from any part of the world
- Since whole world is connected through internet, it becomes easier to select business partners for the joint ventures

COST SAVING

- Reduce cost of preparing letters and sending letters, saves postage cost
- Achieving order and placing order become less costly

D) REDUCTION OF LEAD TIMES

- Reduce lead time of material supply
- educe retrieval time of documented information

E) IMPROVES PRODUCT PROMOTIONAL ACTIVITIES

- Reduce the expenditure for market expansion and also reduce market mediation
- Improve relation with customer and helps in promotion of products in the form of advertisement

The role of IT in a Supply chain and its network Design

Case Discussion: Walmart and information Technology

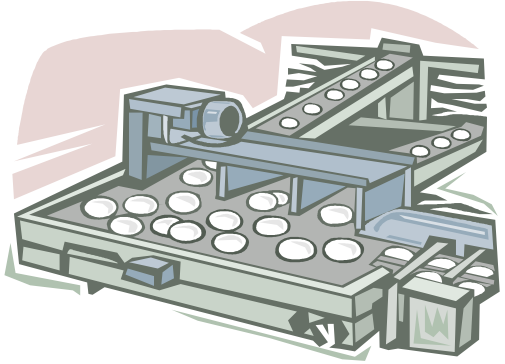
Walmart has been a pioneer not only in capturing information, but also in understanding how to analyze that information to make good supply chain decisions.

Walmart collect information in **real time** on what products are being purchased at each of its store and then sends these data to the manufacturers.

The role of IT in a Supply chain and its network Design

Capture real time data on inventory

Manufacturers use this information to set its production schedules to meet demand on time



Analyze information and base actions on this analysis

The role of IT in a Supply Chain and its Network Design

Information use across supply chain drivers

1. **Facility**

Determining the *location*, *capacity* and schedules of a facility requires information on the trade-offs among efficiency and flexibility, demand, exchange rates, taxes etc.

2. Inventory

Setting optimal inventory policies requires information that includes demand patterns, cost of carrying inventory, cost of stocking out, and cost of ordering.

The role of IT in a Supply chain and its network Design

3. Transportation

Depending on transportation networks, routings, modes, shipments and vendors requires information including costs, customer locations and shipment sizes.

4. Sourcing

Information on *product margins, prices, quality, delivery lead times* and so on, are all important in making sourcing decisions

5. Pricing and revenue management

To set pricing policies, information is needed on *demand*, *volume* and *various customer segments' willingness to pay* and on many supply issues, such as the product margin, lead time, and availability

Supply chain IT Framework

- Enterprise software collects transaction data, analyze these data to make decisions both within an enterprise and across a data to make decisions.

- IT framework includes hardware, implementation services, and support are all crucial to making IT effective.

- There are three main drivers of the evolution taking place in enterprise software are the three major groups of supply chain processes that we call supply chain macro processes.

- The successful categories of software will be those that focus on the macro processes.

The Supply chain Macro Processes

- The emergence of supply chain management has broadened the scope across which companies make decisions.
- This scope has expanded from trying to optimize performance across the division, to the enterprise and now to the entire supply chain.
- From an enterprise's perspective, all processes within its supply chain can be categorized into three main areas;
  - Processes focused downstream
  - Processes focused internally
  - Processes focused upstream

Macro supply chain Processes

1. **Customer relationship management (CRM)**

Processes that focus on downstream interaction between the enterprise and its customers

2. **Internal supply chain management (ISCM)**

Processes that focus on internal operations within the enterprise.

3. **Supplier relationship Management (SRM)**

Processes that focus on upstream interaction between the enterprise and its suppliers.

Macro supply chain Processes

Transaction management foundation (TMF)

- The fourth important building block is TMF. It provides the foundation on which the macro processes rest.
- It includes basic ERP systems and its components, such as financials and human resources, infrastructure software and integration software.
- TMF software is necessary for the three main macro processes to function and to communicate with each other.

Macro process in a Supply Chain

Supplier Relationship Management (SRM)	Internal Supply Chain Management (ISCM)	Customer Relationship Management (CRM)

Transaction Management Foundation (TMF)

Components of Macro Processes

1. Customer Relationship Management (CRM)

- Objective of CRM macro processes is to generate customer demand and facilitate tracking of orders.

- Weakness in CRM results in demand being lost and poor customer experience as orders are not processed and executed effectively.

Customer Relationship Management (CRM)

- The key Processes under CRM are as follows;

1.Marketing

Marketing decision for Target customers, pricing, market segmentation and customer profitability etc.

2. Sell Process

Sell process includes providing the sales force the information it needs to make a sale and then execute the actual sales. Sales process requires, variety of options and features, functionality etc.

Good IT systems support sales force automation, configuration, and personalization to improve the sell process

Customer Relationship Management (CRM)

3. Order Management

It is important to track customer order as they flow through enterprise to plan and execute order fulfillment.

Order management process ties together demand from the customer with supply from the enterprise.

Good IT systems enable visibility of orders across the various stages that an order flows through before reaching the customer

Customer Relationship Management (CRM)

4. Call/ Service Center

A call/ service center is a primary point of contact between a company and its customers.

It helps customers place an orders, suggests products, solves problems, and provide information on order status.

CRM SOFTWARE

- SAP
- Oracle
- Salesforce.com
- Microsoft
- Amdocs

Internal Supply Chain Management (ISCM)

- ISCM macro process aims to fulfill demand that is generated by CRM processes.
- There need to be a strong integration between ISCM and CRM micro processes.
- When forecasting demand, interaction with CRM is essential, as the CRM applications are touching the customer and have the most data and insight on customer behavior.

- Top ISCM vendors are SAP, Oracle, JDA, Ariba and Mahattan Associates

Internal Supply Chain Management (ISCM)

ISCM includes all processes involved in planning for and fulfilling a customer order. The various processes included in ISCM are as follow;

1. Strategic Planning

- This process focus on network design; location, capacity planning of facilities

2. Demand Planning

- This consist of demand forecasting, and analyzing the impact on demand of demand management tools (such as pricing, promotions)

3. Supply planning

- It produces an optimal plan to meet the demand forecasted in demand planning and resource made available by strategic planning. Factory planning, inventory planning capabilities are typically are provided by supply planning software

4. Fulfillment

- The fulfillment process links each other to a specific supply source and means of transportation. and warehousing management
- The software applications that typically fall into the fulfillment segment are transportation and warehousing management applications

5. Field Service

- Finally, after delivering the product, it eventually must be serviced.
- Services process focus on setting inventory level of spare parts as well as scheduling service calls

Supplier Relationship Management (SRM)

SRM includes those processes focused on the interaction between the enterprise and suppliers that are upstream in the supply chain.

Significant improvement in supply chain performance can be achieved if SRM processes are well integrated with appropriate CRM and ISCM processes.

Supplier Relationship Management (SRM)

SRM processes are

1. **Design collaboration**
   - This software aims to improve the design of the products through collaboration between manufacturers and suppliers

2. **Source**
   - Sourcing software assists in the qualifications of suppliers and helps in supplier selection, contract mgmt., and supplier evaluation
   - Successful software in this area helps analyze supplier performance and manage contracts

3. **Negotiate**
   - Design and execution of auction

4. **Buy**
   - This software executes the creation, management and approval of purchase order. …. Automates the procurement process, and helps decrease processing cost and time

5. **Supply collaboration**
   - Once an agreement for supply is established between enterprise and a supplier, supply chain performance can be improved by collaborating on forecasts, prodn plan, and inventory level.
   - Good software should be able to facilitate collaborative forecasting and planning in sc

Transaction Management Foundation (TMF)

The TMF is the historical home of the largest enterprise software players

In 1990, SAP continued as the market leader, but other powerful ERP players included Oracle, peoplesoft, JD Edwards and Baan. Eventually, however, ERP sales slowed and today, of the former five, only SAP and Oracle exist as independent entities.

Transaction Management Foundation

The real value of the transition management foundation can only be extracted if decision making within the supply chain is improved.

Clear focus is required on integration across the macro processes along with developing good functionality in one or more macro processes will continue to occupy a position of strength.

The Macro Processes and their Processes

SRM	ISCM	CRM
Design Collaboration	Strategic Planning	Market
Source	Demand Forecasting	Sell
Negotiate	Supply Planning	Order Management
Buy	Fulfillment	Call Center
Supply collaboration	Field Service	

TMF

The Future of IT in the Supply Chain

- Three SCM micro processes will continue to drive the evolution of enterprise software.

- Firms targeting a macro processes, the ability to integrate across macro processes, and the strength of their ecosystems as the keys to success.

New dimension of competition

Microsoft has certainly noticed the growth and size of the enterprise software market and has begun to make a significant effort in this space.

Microsoft's Dynamics application provides software solutions in all areas of supply chain management. The company initially targeted primarily small companies but lately has started to compete directly with SAP and Oracle by targeting larger firms.

New Dimension of Competition

Cloud Computing

SAAS (Software as a service) will play an important role in supply chain software.

Salesforce.com has used this model effectively.

Reduced maintenance expense is likely to be a major driver for customers to go for the software as a service model in supply chain software.

Risk Management in IT

The larger the change in the IT system, the greater is the risk of a negative impact on operations.

The major risk in IT can be divided into two broad categories

1. Risk involved with installing new IT system

2. Operation risk

Risk Management in IT

1. Risk involved with installing new IT system

A firm is forced to transition from old processes it used in its operations to the new processes in its IT system.

New IT system require employees to operate according to new processes:

1. Difficult to train and learn new system
2. Top management is often not actively involved in transition
3. There is technical hurdles to overcome in getting new IT system operational

Risk Management in IT

2. Operational Risk

The more a firm relies on IT to make decisions and execute processes, the higher is the risk that any sore of IT problem, ranging from software glitches to power outage to viruses, can completely shutdown firm's operation.

Firm settles into a pattern of always doing same process that way.

Risk Handling while adding New IT

With regards to implementing IT systems, there are three ideas to keep in mind;

1. Install new IT in an incremental approach. This allows a firm to limit the damage if things go wrong as well as pinpoint problem areas during installation process.

2. Parallel conversion process if preferred to direct conversion

3. Implement only the level of complexity that one needs.

Operational Risk Handling

Following are some of the strategies to consider the operational risk handling;

1. Ensure data backup systems
2. Systems running in parallel
3. Security software products
4. Select system that have the flexibility to change

Supply Chain IT in practice

- Managers need to keep in mind several general ideas when they are making a decision regarding Supply Chain IT

1. Select an IT system that addresses the company's key success factors
2. Take incremental steps and measure value
3. Align the level of sophistication with the need for sophistication
4. Use IT systems to support decision making, not to make decisions
5. Think about future

THANK YOU