

# Information systems Resources and Products

(14)

## People Resources →

specialists - systems analysts, software developers, operators  
End users - anyone else who uses information systems

## Hardware Resources →

Machines - computers, video monitors, magnetic disk drives, printers, optical scanners.

Media - floppy disks, magnetic tape, optical disks, plastic cards, paper forms.

## Software Resources →

Program - operating system programs, spreadsheet programs, word processing programs, payroll programs.

Procedures - data entry procedures, error correction procedures, paycheck distribution

## Data Resources →

Product descriptions, customer records, employee files, inventory databases.

## Network Resources →

communication media, communications processors, network access and control software.

## Information Products →

management reports and business documents using text and graphics displays, audio responses and paper forms.

## Information System Activities

(15)

- Input → optical scanning of bar coded tags on merchandise.
- Processing → Calculating employee pay, taxes and other payroll deductions.
- Output → Producing reports and displays about sales performance.
- Storage → Maintaining records on customers, employees and products.
- Control → Generating audible signals to indicate proper entry of sales data.

# Supply Chain Management (SCM)

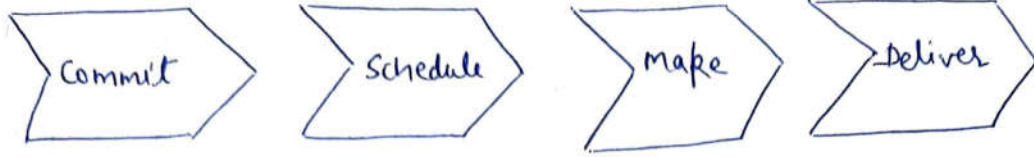
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: The Business Network

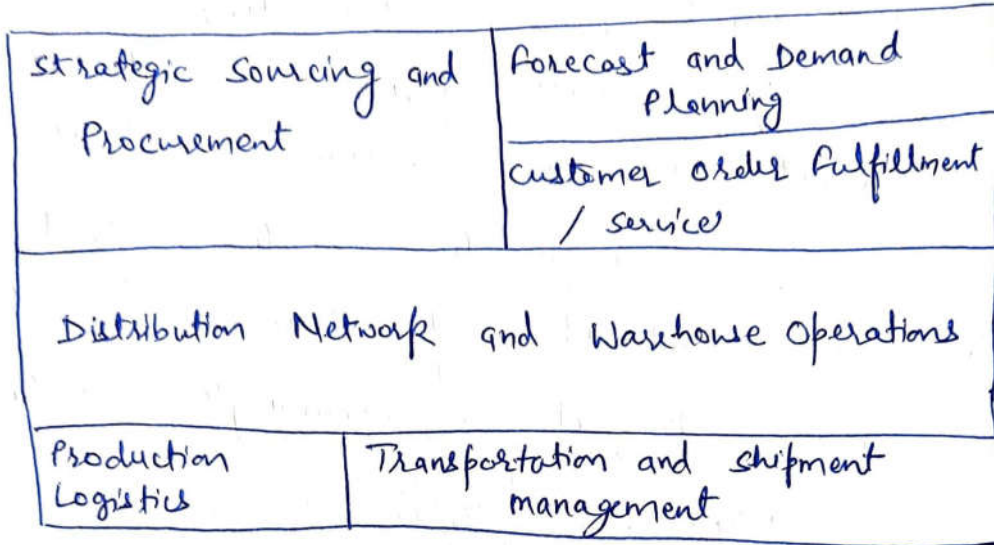
- Supply chain management (SCM) is a cross-functional inter-enterprise system that uses information technology to help support and manage the links between some of a company's key business processes and those of its suppliers, customers and business partners.
- The goal of SCM is to create a fast, efficient, and low cost network of business relationships, or supply chain, to get a company's products from concept to market.
- A successful SCM strategy is based on accurate order processing, just-in-time inventory management, and timely order fulfillment.
  - For example let's suppose a company wants to build and sell a product to other businesses.
- Then it must buy raw materials and a variety of contracted services from other companies.
- The interrelationships with suppliers, customers, distributors and other businesses that are needed to design, build, and sell a product make up the network of business entities, relationships, and processes that is called a supply chain.



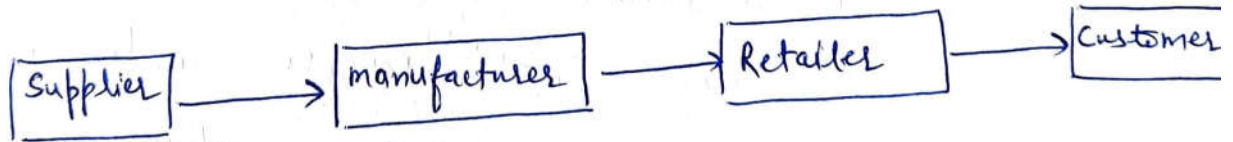
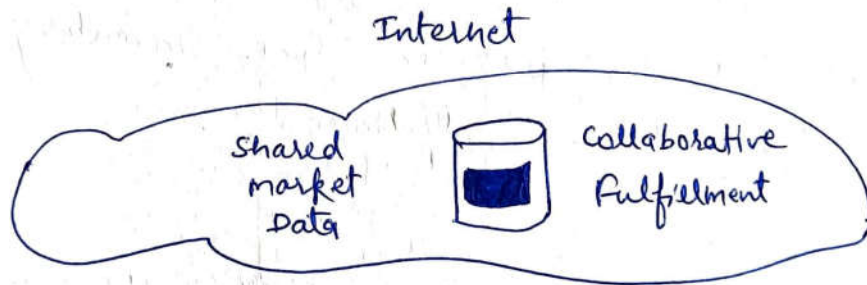
Supply chain  
Life Cycle



SCM  
Functional  
Processes



SCM  
Integrated  
Solution



Supply chain management software and Internet technologies can help companies reengineer and integrate the functional SCM processes that support the supply chain life cycle.

• Figure illustrates the basic business processes in supply chain life cycle and the functional scm processes that support them.

• It also emphasizes how many companies today are reengineering their supply chain processes, aided by Internet technologies and supply chain management software.

→ For example, the demands of today's competitive business environment are pushing manufacturers to use their intranets, extranets and e-commerce web portals to help them reengineer their relationships with their suppliers, distributors and retailers.

• The object is to significantly reduce costs, increase efficiency and improve their supply chain cycle times.

• scm software can also help to improve interenterprise coordination among supply chain process players.

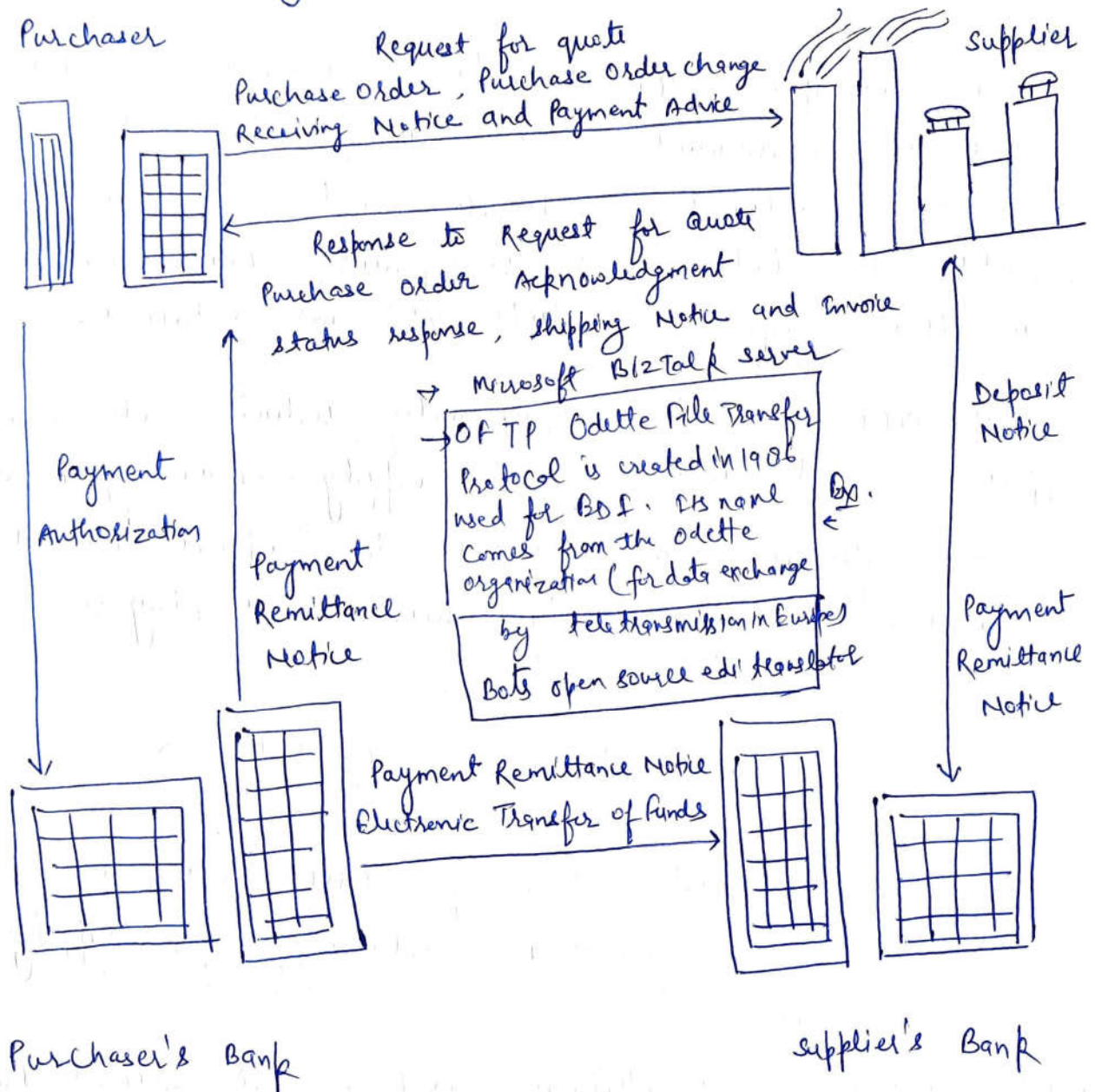
## Electronic Data Interchange (EDI) →

• Electronic data interchange (EDI) was one of the earliest uses of information technology for supply chain management.

• EDI involves the electronic exchange of business transaction documents over the Internet and other networks between supply chain trading partners (organizations and their customers and suppliers).



- Data representing a variety of business transaction documents (such as purchase orders, invoices, requests for quotations and shipping notices) are automatically exchanged between computers using standard document message formats.
- Typically, EDI software is used to convert a company's own document formats into standardized EDI formats as specified by various industry and international protocols.



Example of EDI activities

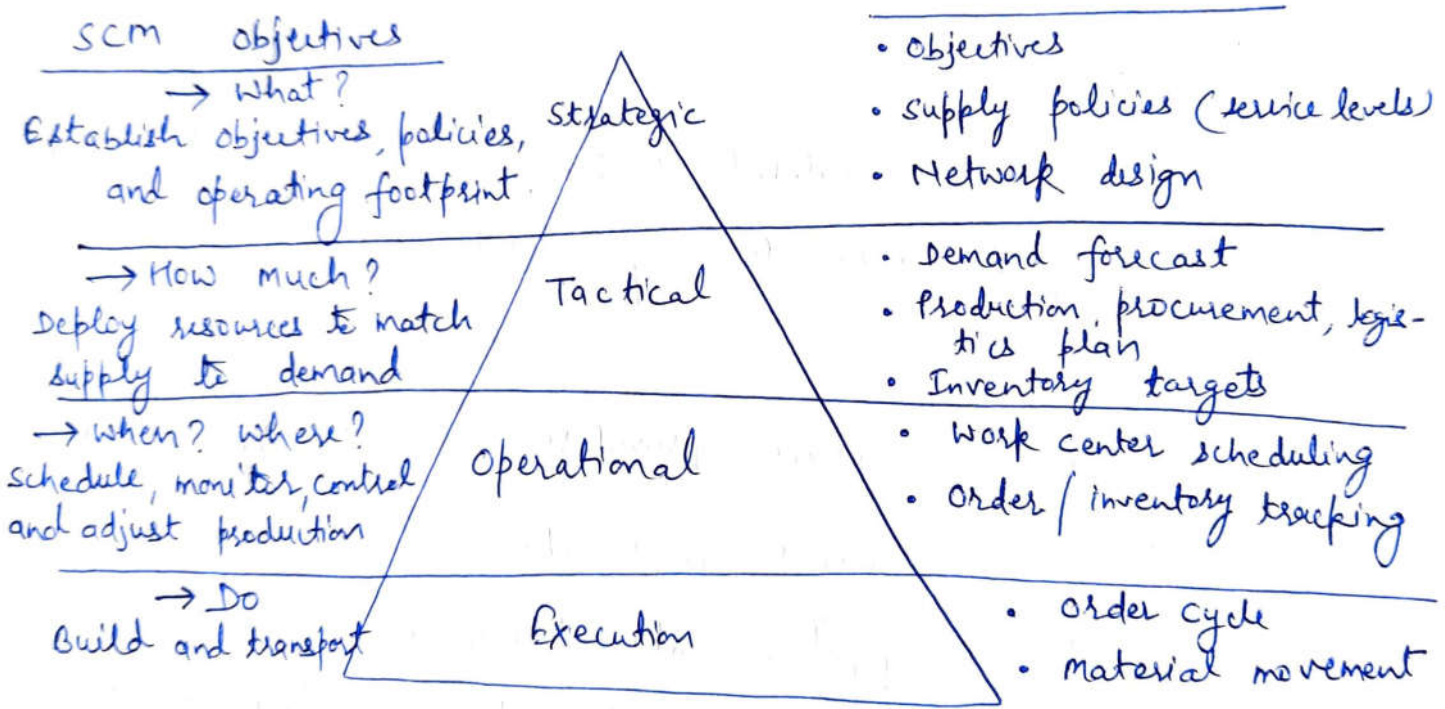
customers  
operations

- Thus EDI is an example of the almost complete automation of an e-commerce supply chain process.
- And EDI over the internet, using secure virtual private networks is a growing B2B e-commerce application.
- Formatted transaction data are transmitted over network links directly between computers, without paper documents or human intervention.
- Besides direct network links between the computers of trading partners, third party services are widely used.
- Companies like GE Global Exchange Service and Computer Associates offer a variety of EDI services for relatively high fees.
- But many EDI service providers now offer secure, lower cost EDI services over the internet.
- EDI is still a popular data transmission format among major trading partners, primarily to automate repetitive transactions, though it is slowly being replaced by XML based web services.
- EDI automatically tracks inventory changes, triggers orders, invoices and other documents related to transactions.



- And schedules and confirms delivery and payment.
- By digitally integrating the supply chain, EDI streamlines processes, save time, and increases accuracy.
- And by using internet technologies, lower cost internet based EDI services are now available to smaller businesses.

The Role of SCM →



The objectives and outcomes of supply chain management are accomplished for a business with the help of interenterprise SCM information systems.



- (16)
- The role of information technology in SCM is to (22) support these objectives with enterprise information systems that produce many of the outcomes a business needs to effectively manage its supply chain.
- That's why many companies today are installing SCM software and developing Web-based SCM information systems.
  - Until recently, SCM software products have typically been developed for either supply chain planning or execution applications.
  - SCM planning software supports a variety of applications for supply and demand forecasting.
  - SCM execution software supports applications like order management, logistics management and warehouse management.

However, big ERP vendors like Oracle and SAP are ~~to~~ now offering web-enabled software suites of e-business applications that include SCM modules.

# Benefits of SCM

Collab  
Ma.

## SCM Functions

### Planning

Supply chain design

Collaborative demand  
and supply planning

## SCM Outcomes

- optimize network of suppliers, plants, and distribution centers
- Develop an accurate forecast of customer demand by sharing demand
- Supply forecasts instantaneously across multiple tiers.
- Internet - enable collaborative scenarios, such as collaborative planning, forecasting, and replenishment (CPFR), and vendor managed inventory

## Execution

materials management

- share accurate inventory and procurement order information
- Ensure materials required for production are available in the right place at the right time
- Reduce raw material spending, procurement costs, safety stocks, and raw material and finished good inventory

Collaborative  
Manufacturing

- optimize plans and schedules while considering resource, material and dependency constraints

Collaborative  
fulfillment

- commit to delivery dates in real time
- fulfil orders from all channels on time with order management, transportation planning, and vehicle scheduling
- support the entire logistics process, including picking, packing, shipping and delivery in foreign countries

Supply chain event  
management

- monitor every stage of the supply chain process, from price quotation to the moment the customer receives the product, and receive alerts when problems arise

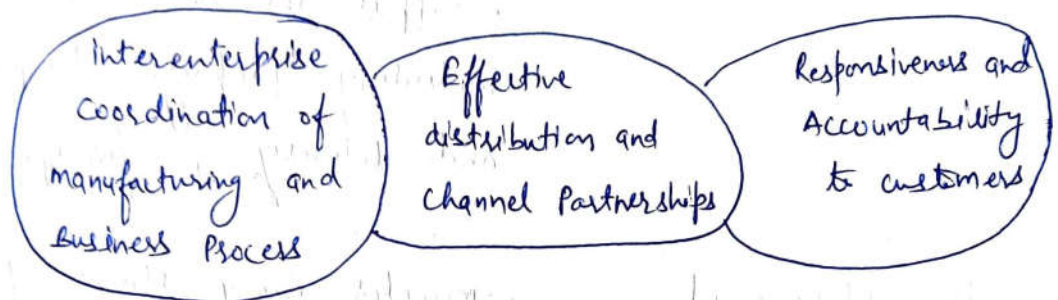
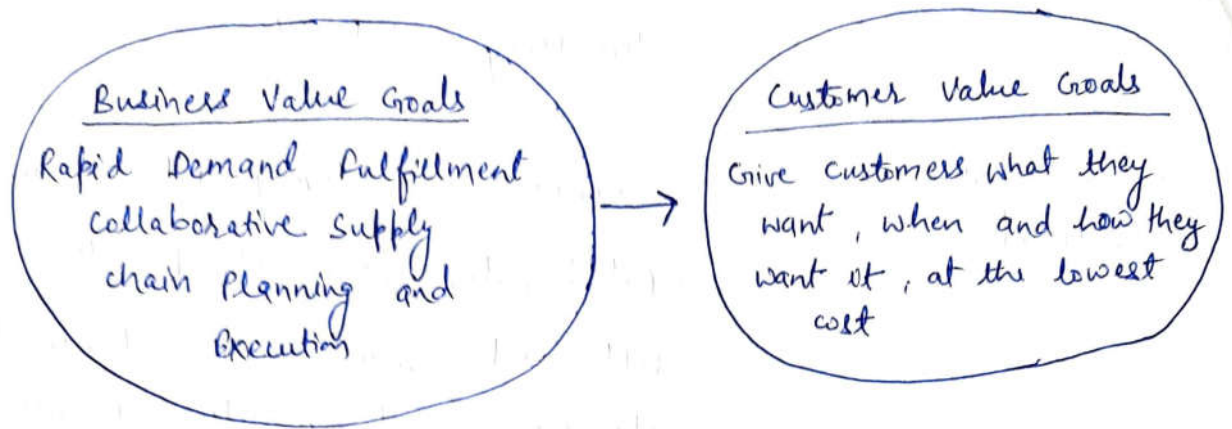
Supply chain performance  
management

Report key measurements in the supply chain, such as filling rates, order cycle times, and capacity utilization

The supply chain management functions and potential benefits offered by the SCM module in the mySAP e-business software suite.



# Challenges of SCM



## Objectives of Supply Chain Management

- Achieving the goals and objectives of supply chain management is a major challenge for many companies today.
- Reasons of above problems or challenge are —
  - A lack of proper demand planning knowledge, tools, and guidelines is a major source of SCM failure.
  - Inaccurate or overoptimistic demand forecasts will cause major production, inventory and other business problems, no matter how efficient the rest of the supply chain mgmt process is constructed.

- Inaccurate a production, inventory, and other business data provided by a company's other information systems are a frequent cause of SCM problems.
- And lack of adequate collaboration among marketing, production, and inventory management departments within a company and with suppliers, distributors and others will sabotage my SCM system.
- Even the SCM software tools themselves are considered to be immature, incomplete and hard to implement by many companies who are installing SCM systems.

### Trends in SCM

- The trends in the use of supply chain management have ~~to~~ three possible stages in a company's implementation of SCM systems.

#### SCM stage 1 -

- A company ~~can~~ concentrates on making improvements to its internal supply chain processes and its external processes and relationships with suppliers and customers.
- Its e-commerce website and those of some of its trading partners provide access to online catalogs and useful supply chain information, while supporting limited online transactions.



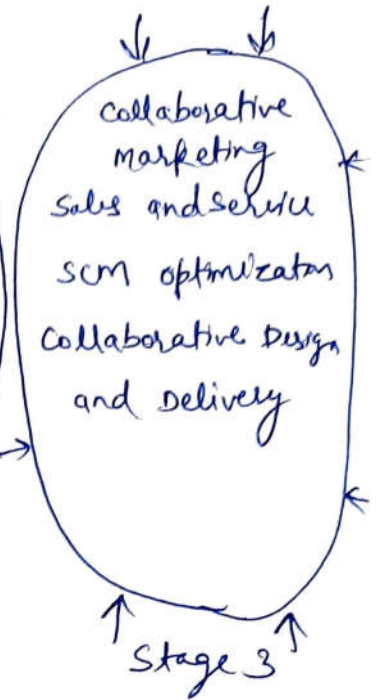
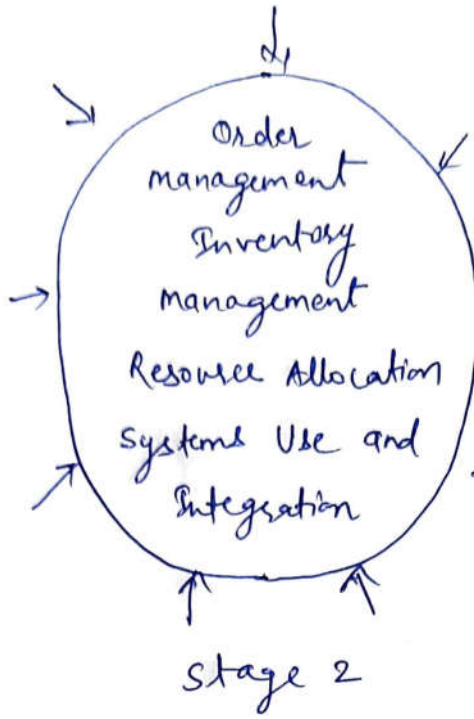
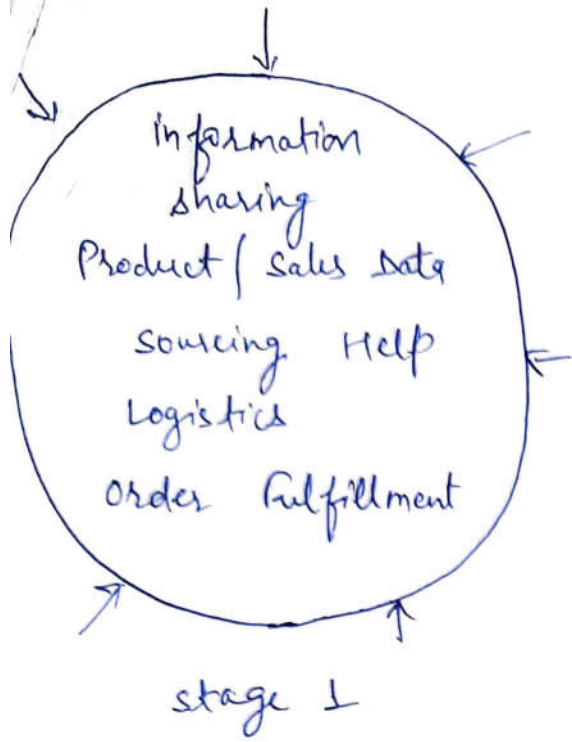
## SCM stage 2 -

- Company accomplishes substantial supply chain management applications by using selected SCM software program internally as well as externally via intranet and extranet links among suppliers, distributors, customers and other trading partners.
- Also concentrates on expanding the business network of web enabled SCM - capable trading partners in their supply chain to increase its operational efficiency and effectiveness in meeting their strategic business objectives.

## SCM stage 3 -

- Company begins to develop and implement cutting-edge collaborative supply chain management applications using advanced SCM software, full service extranet links, and private and public e-commerce exchanges.
- For example collaborative marketing sales and service applications with trading partners, including customer and partner relationship management of their supply chains in order to meet their strategic customer value and business value goals.





stages in the use of SCM