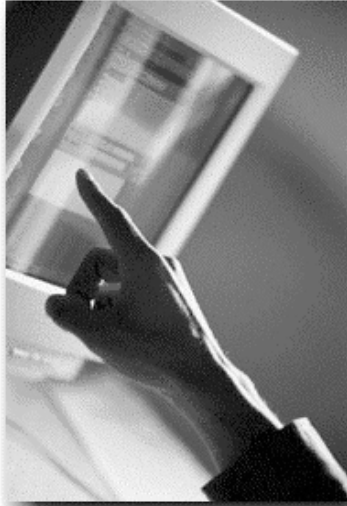




E-Business Strategy

Supply Chain Management

- “the premier application of e-business”

Outline

- Key Underlying Business Principles of SCM
- SCM in E-Business
- Bullwhip Effect and Collaborative Commerce
- GM as an example

Defining the Supply Chain

- *Supply chain*: The flow of materials, information, money, and services from raw material suppliers through factories and warehouses to the end customers
- A supply chain is the network of activities that deliver a product/service to the customer
 - Sourcing of: raw materials, assembly, warehousing, order entry, distribution, delivery

Supply Chains & SCM

- Supply Chain Management (SCM) is the business function that coordinates all of the network links in the supply chain.
- Coordinates movement of goods through supply chain from suppliers to manufacturers to distributors to final customers (+ the sourcing of 'non-sellables' -- goods and services required for business operations, not sold on to final customers)

Goal of SC and SCM

Goal: match demand with supply

- Reduce operational costs, transfer the saved cost to add value to customers, increasing profitability / competitiveness.
- Increase efficiency and effectiveness of 'throughput' and management (control, monitoring, problem-solving) of business processes.

Key Activities for each component of SCM

Upstream Supply Chain

- Transactions between an organisation and its suppliers and intermediaries; logistics
- activities of a manufacturing company with its suppliers

Internal Supply Chain

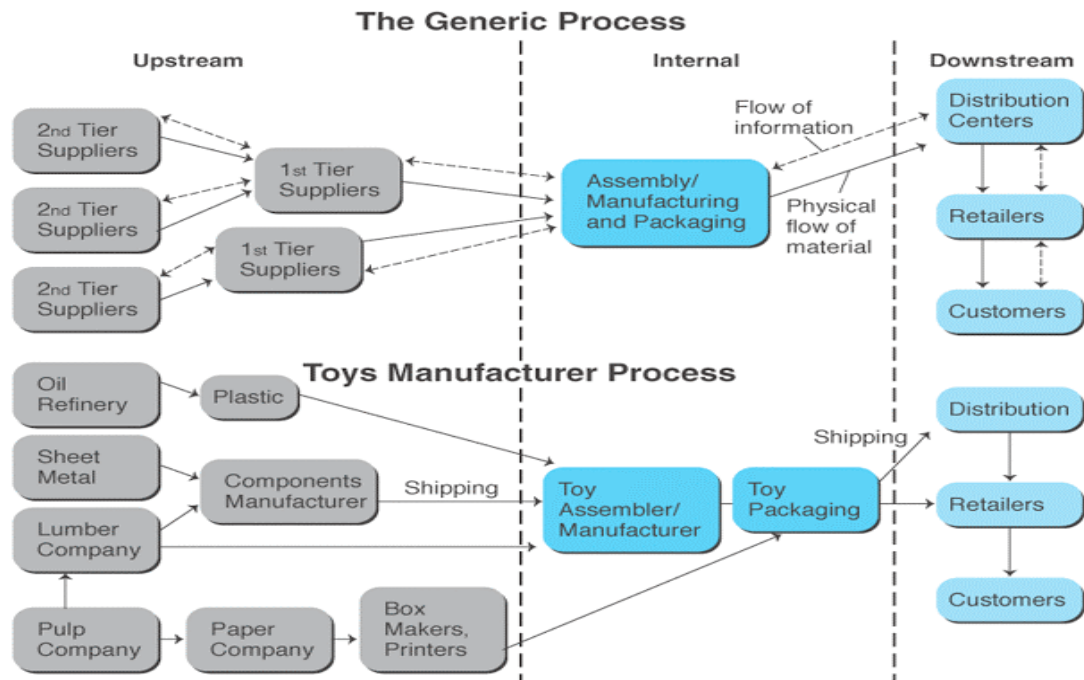
- Internal collaboration for processing, purchasing, planning, quality assuring, shipping.
- in-house processes for transforming the inputs from the suppliers into the outputs

Downstream Supply Chain

- Transactions between an organisation and its customers and intermediaries
- activities involved in delivering the products to the final customers

Supply Chain

Exhibit 8.1 A Simple Supply Chain



Turban (2004), Prentice Hall

Evolution of SCM

- Till 1970s, logistics mainly focused on movement of finished goods
 - Stock control, warehousing, distribution treated as separate activities
- 1970s on: introduction of JIT and MRP
 - MRP (materials requirements planning / manufacturing resource planning) integrates the various operational IS to maintain optimum level of all resources

Evolution of SCM

- JIT (Just In Time) manufacturing aims as far as possible to eliminate inventory.
- MRP systems facilitate this by integrating the information systems that handle:
 - Customer orders
 - Production scheduling
 - Supplier orders
 - Transportation
 - Storage

Push or Pull?

- Push is more Supply-driven
 - Push model enables mass production for all potential customers (based on anticipated market).
- Pull is more Demand-driven
 - Pull model enables customization to each individual customer (based on actual demand).

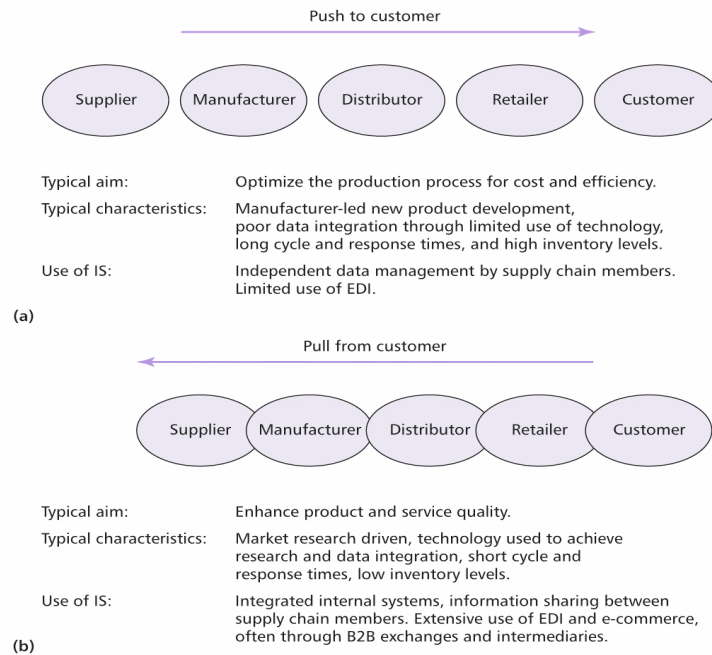


Figure 6.3 Push and pull approaches to supply chain management

Evolution of SCM

- From 1990s on, ERP software (eg SAP) enabled overall SCM
- These systems integrate the business and also interface with suppliers' systems
- They also change Supply chain emphasis:
 - From manufacturer-led 'push'
 - to customer-led 'pull'.

E-Supply Chain Management

E-supply chain: SC in E-Business

- E-supply chain: A supply chain that is managed electronically, usually with Web-based technologies.
- Integration of internal SC processes (stock control, inventory, logistics, distribution) with external e-procurement, ordering and payment systems.

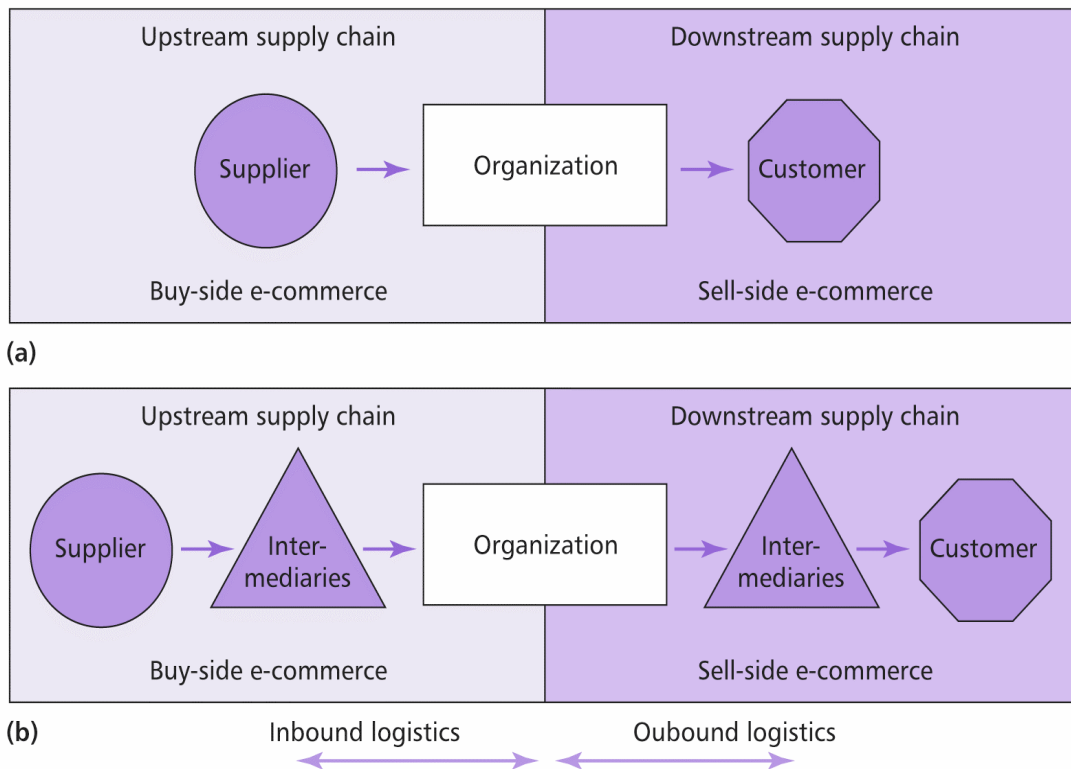


Figure 6.1 Members of the supply chain (a) simplified view (b) including intermediaries

Key Activities of SCM in E-Business

Upstream Supply Chain

- buy-side e-commerce (B2B with E-procurement)
- Collaboration with Suppliers
- Managing relationship with suppliers (SRM)

Internal Supply Chain

- Internally – B2E and ERP
- Processing, purchasing, planning, quality, shipping.....

Downstream Supply Chain

- Sell-side e-commerce (B2C/B2B)
- Collaboration with Distributors and/or retailer by SCM
- Further extended to manage customers relationship with (CRM)

Main goals of SCM in E-business

- **Business: Achieve the Goal of Business:**
 - Reduce operational costs
 - Add value to customers
 - Maintain business relationships (suppliers, intermediaries, partners)
- **Technology: System Integration of Buy-side E-commerce with Sell-side E-commerce from upstream to downstream; integration with internal IS (Finance, HR, Accounting, Administration, Operations).**

Summary

	Supply Side	Company	Customer Side
Transactions	E-procurement	B2B	Online Trading
Major Activities Operations Management	SCM (Purchasing, Sourcing, acquisition and Logistics, demand planning and forecasting)	(MRP = Manufacturing Resource Planning, DRP= Distribution Requirements Planning), Order Fulfillment, ERP	Source Of Supply, Sell, Call centre, Distribution & intermediaries Demand & Supply planning & forecasting
Relationship Management	SRM for Partnership	Internal Relationship Management	CRM Customization & partnership
Collaboration	Design & Supply Collaboration	Product Design & Development	Order Management

Enabling Technologies in the Supply Chain

- System Integration:
 - Enterprise Application Integration (EAI)
 - The need for IT systems to communicate **within** an organization led to the evolution of **enterprise application integration (EAI)**.
 - EAI is the process of creating an integrated infrastructure for linking disparate systems, applications, and data sources across the corporate enterprise.
 - EAI enables to share seamlessly and exchange data between ERP, CRM, SCM, databases, data warehouses, and other important internal systems within the company
 - Portal Integration (PI, the Corporate Portal)

Enabling Technologies in the Supply Chain

- B2B Exchange Standards:
 - Electronic Data interchange –EDI
 - Enables the computer-to-computer exchange between two organizations of standard transactions.
 - XML-based B2B exchange (XML-based Web Services Infrastructure)
 - the latest technology that enables EAI (= Enterprise Application Integration) and EPI (= Electronic Process Integration)
 - Improve EDI by adoption of common (web-based) standards for data formats and for intra- and extra-networking.

Enabling Technologies in the Supply Chain

- **Software Systems in SC:**
 - Supply Chain Management software (SCM).
 - Supplier Relationship Management software (SRM).
 - Outsourced by ASP (application service provider), such as SAP / Peoplesoft + Oracle / SSA + Baan.
 - Or developed by company's own internal IT department.
 - MRP (manufacturing) / DRP (distribution) software for planning resource scheduling and allocation.
 - Directory services (e.g. LDAP = "lightweight directory access service") and SOS (= "source of supply") software for local and global sharing of sourcing data and contact details.

Summary

- SCM and the emergence of compatible EDI and EFT systems for upstream supply chain management formed the earliest development of e-commercial activity.
- Logistics and distribution system (JIT, MRP, DRP) developments enabled a shift from 'push' to 'pull' systems for SCM -- tailoring supply to customer demand.
- EAI and PI ("portal integration") enabled internal IS / ICT strategies to be co-ordinated with suppliers, intermediaries and business partners.
- Most important technological / social development has been standardisation of data formats (e.g. XML) + common network protocols (e.g. TCP/IP).