



## Supply Chain to Extended Enterprises

- traditional supply chain thinking was based on the notion that lower price adds value
- price is important but value is created by emphasizing more on innovation and information; price has become secondary
- notion of the extended enterprise takes SCM to the next level and focuses on those factors and characteristics that link supply

## Need for Improvements in Supply Chain -1

- Traditional procurement activities between buyer-seller gave way to materials management, where suppliers and buyers entered into mutual agreement and:
  - buyer and seller began to better appreciate the importance of a more coordinated approach in dealing with each other
  - longer term contracts existed among supply chain members, and some integration was achieved between purchasing and the other support functions (e.g., logistics)
  - key objective was to improve the efficient flow of goods from supplier to buyer
  - Price, quality, and delivery were the buyer's major response to competitive pressures
- these linkages became stronger during strategic sourcing but control was still a primary driver, and the buying firm was motivated mainly by its own needs
- The current age of supply chain management (SCM) represents a step towards building strategic relationships with key suppliers
  - leverage is now based on competence, and buyers look for suppliers who have critical skills/capabilities that bring value to the marketplace
- Despite these gains, procurement performance metrics still were internally focused and only rarely showed a consideration for other members of the supply chain

## Need for Improvements in Supply Chain -2

- *low-cost strategy* drives suppliers to continuously lower prices either through:
  - economies of scale or
  - business processes that remove waste, inefficiencies, and/or redundancy from the system
- the burden for cost reduction would fall proportionately on the supply base, and the related performance metrics would be driven by cost-related factors
- despite efficiencies are achieved; focus on costs might lead to behaviors that are destructive in the long term
  - example: if suppliers are constantly under pressure to reduce costs, innovation is likely to get compromised

## Need for Improvements in Supply Chain - 3

- the costs associated with weak coordination and cooperation in the supply chain are quite profound
- According to a Georgia Tech study in 2001, supply chain glitches torpedo shareholder value;
  - the total shareholder value loss associated with a glitch can be as high as 25%
  - during the period from 1989 to 1998, 861 glitches were reported
  - the average change in a firm's stock value was around \$120 million
- A study by Bain & Company showed that companies employing sophisticated supply chain methods enjoyed 12 times greater profit than companies with unsophisticated methods
- According to Boston-based AMR Research, the average total return of companies in AMR's "Supply Chain Top 25" in 2007 was 17.89%, compared with returns of 6.43% for the Dow Jones Industrial Average and 3.53% for companies in Standard & Poor's 500 Index

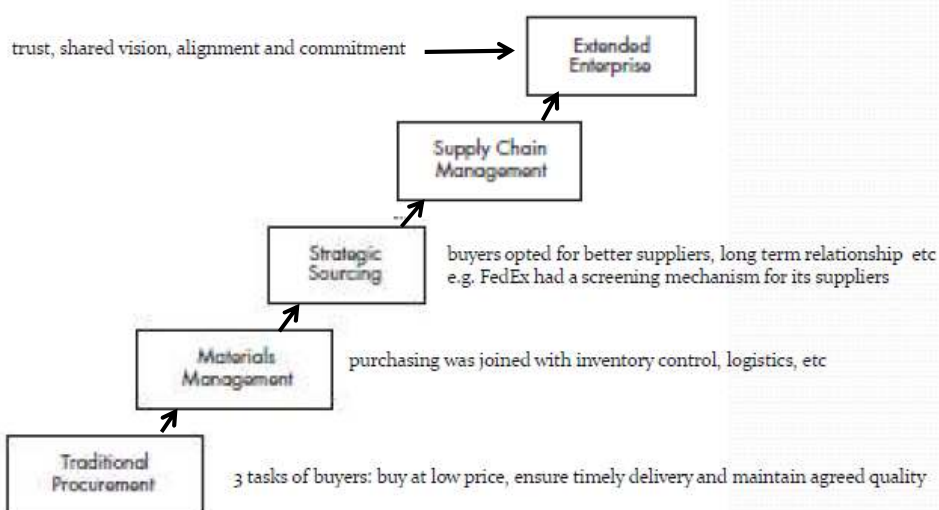
## Extended Enterprises: Introduction

- implies the collaborative relationships among supply chain members
- extension of supply chain
- buyers and sellers work toward a shared vision—gaining a competitive advantage and achieving greater end use customer satisfaction, relative to other supply chains
- managed to optimize efficiency in workflow and maximize knowledge / information flow among partners



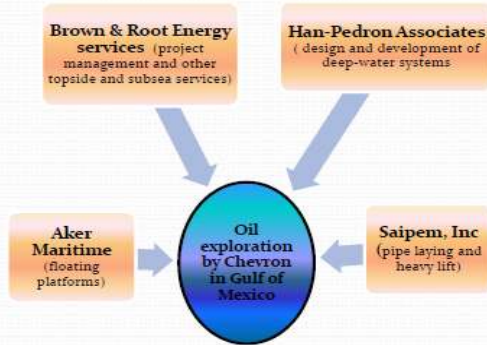
- For example, in 1970, a consortium of four of Europe's aerospace companies joined hands to create *Airbus*;
  - France's Aerospatiale,
  - Britain's Aerospace,
  - Spain's CASA, and
  - Germany's Daimler Aerospace
- each would build sections of planes that would be assembled, marketed, and certified in Toulouse through a separate management company owned by the four partners
- these partners realized that alone they had neither the skills nor the resources to compete effectively against Boeing, Douglas, or Lockheed

## From Traditional Methods to Extended Enterprises



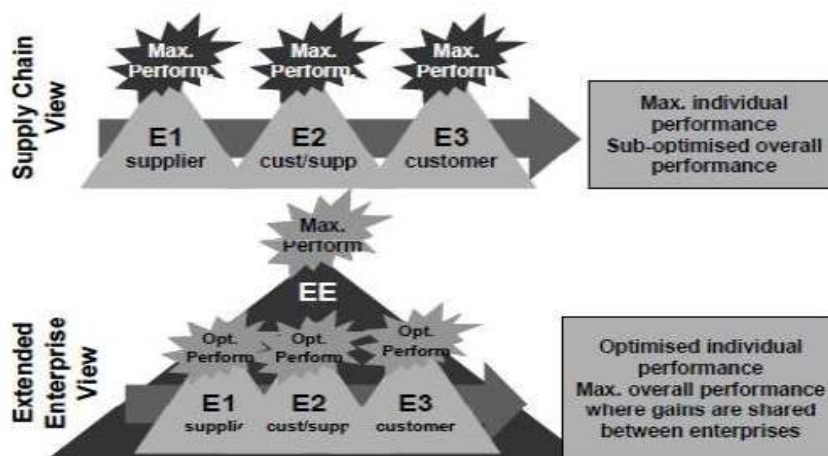
## Need for Extended Enterprises: Oil Industry

- oil exploring companies are dependent on other firms for complete solution for their deep water drilling challenges
- Exxon Mobil in 2000 had revenues of \$210 bn
- adding the revenues of partnering firms (explore, drill and extract), made total revenues of the enterprise close to \$1 trillion



risk and reward sharing alliance with partners gave Chevron the strength to rely on the expertise of its allies

## Supply Chain vs Extended Enterprises



<https://dspace.lib.cranfield.ac.uk/bitstream/1836/2505/1/Measuring%20Managing%20Performance%20Extended%20Enterprise%20%202005.pdf>

## Comparison of Supply Chain and Extended Enterprises

BUSINESS FACTOR	SUPPLY CHAINS/ VALUE CHAINS	EXTENDED ENTERPRISE
Environment	More stable and static	Dynamic and changing
Focus	Tends to be industry-centric	Finds partners who bring part of the business solution
Value-creation approach	Leverages own competencies, more self-sustaining	Leverages the competencies of all members
Relationship type	A teaming approach with some aspects of partnerlike behavior	Strong collaborative behavior with very solid partnering behavior
Infrastructure thrust	Cost-driven	Value-driven
Profit focus	Increasing own profit is the default	Increasing profits system-wide
Knowledge	Shared carefully but tends to look internally	Shared widely over the system
Orientation	Tends to emphasize workflows, etc.	Emphasizes also knowledge and learning

## Extended Enterprise: Chrysler

- Chrysler used many tools, including an extranet, common design tools (Dassault's CATIA) and processes, and supply chain mapping from raw materials to end users
- Suppliers were required to map their own supply chains which were used to find improvements in processes and material flow to cut costs
- suppliers helped Chrysler to redesign systems so they were cheaper overall, without having to cut parts costs), cycle time, and technological innovation
- involved appropriate people with the design of vehicles in the early and mid 1990s, this included service mechanics and assembly line workers as well as suppliers
- cost savings from working more closely with suppliers is using Motorola's carrier (which carries supplier materials from Chicago to Texas) on the return trip, cutting inbound cycle time by 25% and cutting costs by 24%
- sharing of different brake divisions' warranty data, led to substantial reductions in cost by resolving quality problems and resource sharing



## Developing Extended Enterprise Thinking

- to examine the characteristics and factors that distinguish the extended enterprise from other supply-chain relationships
  - strategic intent drives extended enterprise thinking
    - a firm focusing solely on a low-cost strategy makes very different demands on its supply base than a firm that competes through differentiation
    - in a differentiation strategy, cost is a concern but the focus is on bringing value to end-use customers through innovation, value-adding capabilities, and/or an intimate understanding of customer requirements, processes etc
    - criteria established for selecting the set of suppliers can include measures that capture characteristics other than price

***Strategic intent is the process of linking business goals with an understanding of the key relationships, skills, and competencies that are essential to future success***

## Example: Strategic Intention by Ford

- Ford's goals:
  - improve productivity and continue to develop processes that lead to faster cycle times, shorter lead times to move to a make-to-order manufacturing process
- Ford took an equity stake in Executive Manufacturing Technologies (EMT) that provided software for tracking real-time shop floor production
  - Ford recognized that it could not achieve its objectives by relying on internally generated capabilities because its core skills are not in ERP related software
  - it acknowledged that these skills were important enough to take a partial ownership stake in the firm
- partial ownership brings the skills and capabilities offered by EMT closer to Ford's goal

### 3 C's for Extended Enterprises: *Connectivity*

- extent to which members of the extended enterprise are linked and the nature of the bonds that unite them for a common purpose
- communications and information exchange should meet the following principles:
  - Customer feedback should be shared systemwide, and a formal mechanism should exist.
  - Demand forecasts should be shared with suppliers, as should information about product development/obsolescence
  - Quality issues dealing with products and processes should be shared in real time with all the supply chain members
  - Visibility is essential throughout the system and should be accomplished in real time
- *As an example of these principals, Cisco monitors quality (defect rates) at the source and shares customer feedback with these same suppliers*
- ability to monitor at the source also enables better performance metrics and criteria for partner selection

### 3 C's for Extended Enterprises: *Community*

- firms with a set of compatible goals and objectives willingly work together to achieve a common vision or set of objectives
- Many companies hold supplier council meetings where information is shared and expectations around performance are developed
- suppliers have the decision making power and are treated with respect
- determines how members will relate to each other when problems and/or crises arise



### 3 C's for Extended Enterprises: *Collaboration*

- at core is a set of principles, processes, and structures that foster collaboration among the supply chain members
- occurs when firms share compatible goals and work jointly to achieve results that each could not achieve easily alone
  - Aerospace/defense suppliers often engage in collaborative product commerce where engineering data are shared in real time. These data are generated from CAD, ERP, and other planning systems, and they span the life cycle of the project.

### Characteristics of Extended Enterprises

#### focus of IT

- finding ways of transparent flow of knowledge and information between participating firms

#### decentralization and participation

- processes and structure of supply chain is such that each participant has the right to say about the value creation for end user

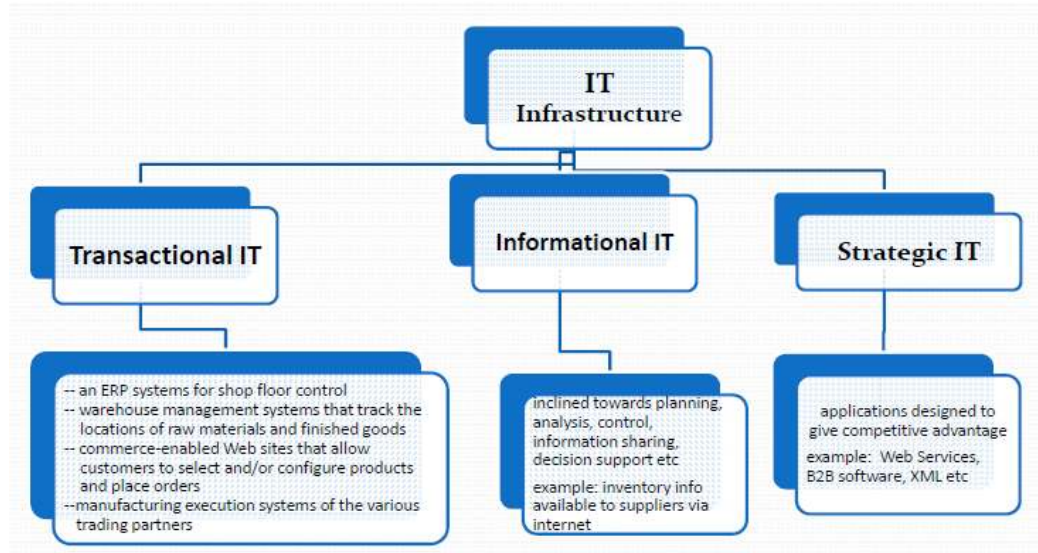
#### people are at the core

- people trust, share information and should be skilled enough to respond to changes

#### workflow related information is shared

- expertise and company specific information is made available to participants of the enterprise

## Role of IT in Extended Enterprises



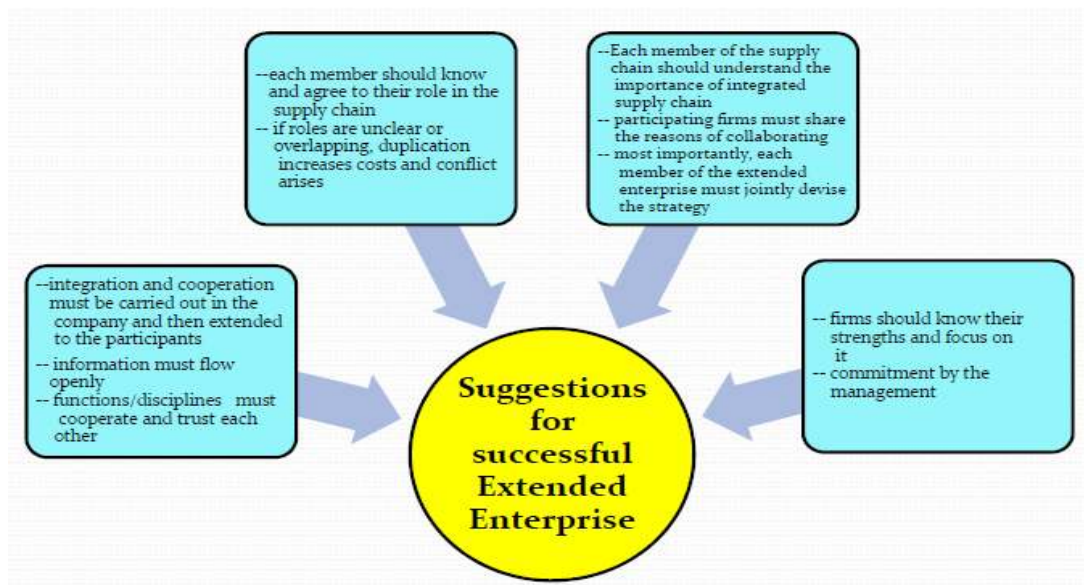
## Case Study - - Dell

- Dell's sales, totalling more than \$50 million per day, were booked over the Internet in 2001.
- apart from publicly available Dell.com Web site for individual consumer orders, Dell has created special "premier page" Web sites for its business customers to facilitate procurement of company approved choices of PCs and IT equipment
- created a "back-end" intranet (valuechain.dell.com) with Internet connections to most of its suppliers.
- these connections link Dell's material planners directly to supplier inventories, and orders for parts are placed electronically
- used these supplier connections to share a wide variety of real-time information from its customers and its own plants, including inventory data, quality data, and technology plans

## Case Study - - Dell

- order information is shared immediately with Dell's suppliers, who deliver inventory to Dell plants from supplier-owned "hubs" (warehouses) located near the plants in less than 90 minutes after receiving a replenishment order.
- suppliers also use this information to improve the accuracy of their forecasts
- at Dell , from the time a customer order gets to the factory, a finished PC can go to shipping in less than four hours (which is about the length of time Dell owns the inventory), and the computer can be on the customer doorstep or at the customer's loading dock the next day

## Successful Extended Enterprise: Suggestions



## **Discussion!**

- Name some Indian Manufacturing companies whom you think can be examples of extended enterprise!