



Acquisition Research Program:  
Creating Synergy for Informed Change

## **B2B Models for DoD Acquisition**

Magdi N Kamel

# Objective

- Examine models for classifying and differentiating the business functionality provided by B2B E-commerce and investigate their impact on government and DoD acquisition



# Agenda

- What is B2B Electronic Commerce?
- Benefits of B2B E-Commerce
- Characteristics of B2B E-Commerce
- Basic B2B E-Commerce Models
  - Buy-side
  - Sell-side
  - Exchanges
  - Collaborative Commerce



# What is B2B E-Commerce?

- Business-to-business e-commerce (B2B EC)—transactions between businesses conducted electronically over the Internet, extranets, intranets, or private networks
- In 2003 it represented about 11% of total B2B trade estimated at \$13.5 trillion
- Predicted to grow steadily to reach 40 – 50% by 2010



# Benefits of B2B E-Commerce

- Significant cuts in acquisition costs
- Expedites cycle time
- Reduces errors and/or improves quality of services
- Provides seamless integration with suppliers
- Reduces inventory levels and costs
- Provides immediate response to changes in customer purchasing patterns



## Benefits of B2B E-Commerce (cont'd)

- Increases production flexibility, permitting just-in-time delivery
- Facilitates mass customization
- Increases opportunities for collaboration between buyers and sellers



# Characteristics of B2B E-Commerce

- Parties to the transaction
  - Directly between buyer and seller
  - Online intermediary—an online third-party that brokers a transaction between a buyer and a seller; can be virtual or click-and-mortar
- Types of transactions
  - Spot purchases—the purchase of goods and services as they are needed, usually at prevailing market prices
  - Strategic sourcing—purchases involving long-term contracts that are usually based on private negotiations between sellers and buyers





# Characteristics of B2B E-Commerce (cont'd)

- Types of products and services
  - Direct—products and services used directly in the production of a product (e.g., steel in a car or paper in a book)
  - Indirect—products and services used to support production (e.g., office supplies or light bulbs), also known as MROs (maintenance, repairs, and operations)
- Direction of transactions
  - Vertical marketplaces—markets that deal with one industry or industry segment (e.g., steel, chemicals).
  - Horizontal marketplaces—markets that concentrate on a service or a product that is used in all types of industries (e.g., office supplies, PCs)





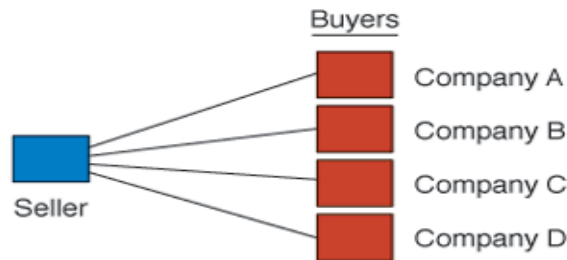
# Basic Models of B2B E-Commerce

- Sell side—one seller to many buyers
- Buy side—one buyer from many sellers
- Exchanges—many sellers to many buyers
- Collaborative commerce—communication and sharing of information, design, and planning among business partners



# Basic Transaction Types of B2B E-Commerce (cont'd)

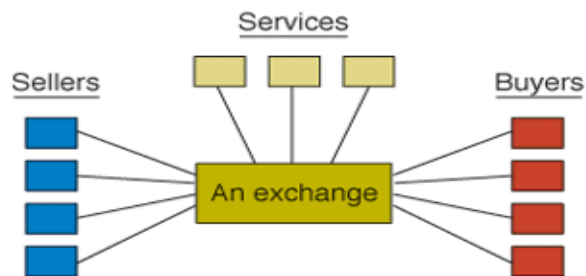
**Exhibit 5.1** Types of B2B E-Commerce



**(a) Sell-Side B2B**



**(b) Buy-Side B2B**



**(c) Electronic (Net) Marketplaces or Exchange**



**(d) Collaborative Commerce**

SOURCE: Turban and King, *Introduction to Electronic Commerce*. Upper Saddle River, NJ: Prentice Hall, 2003.



# Buy Side B2B – E-Procurement

- Buyer opens an electronic marketplace on its servers and invites potential suppliers to bid on products and services needed
  - A request for quote (RFQ)
  - An invitation for a reverse auction



# Examples of Government and DoD Buy-Side Electronic Marketplaces

- *FedBizOpps*—Single government point-of-entry for Federal government procurement opportunities over \$25,000
- *E-buy*—An online Request for Quote (RFQ)/Request for Proposal (RFP) system for federal buyers
- *Navy Auctions*—An Internet portal that allows online suppliers to compete in real-time for Navy contracts by lowering their prices as they see other offers



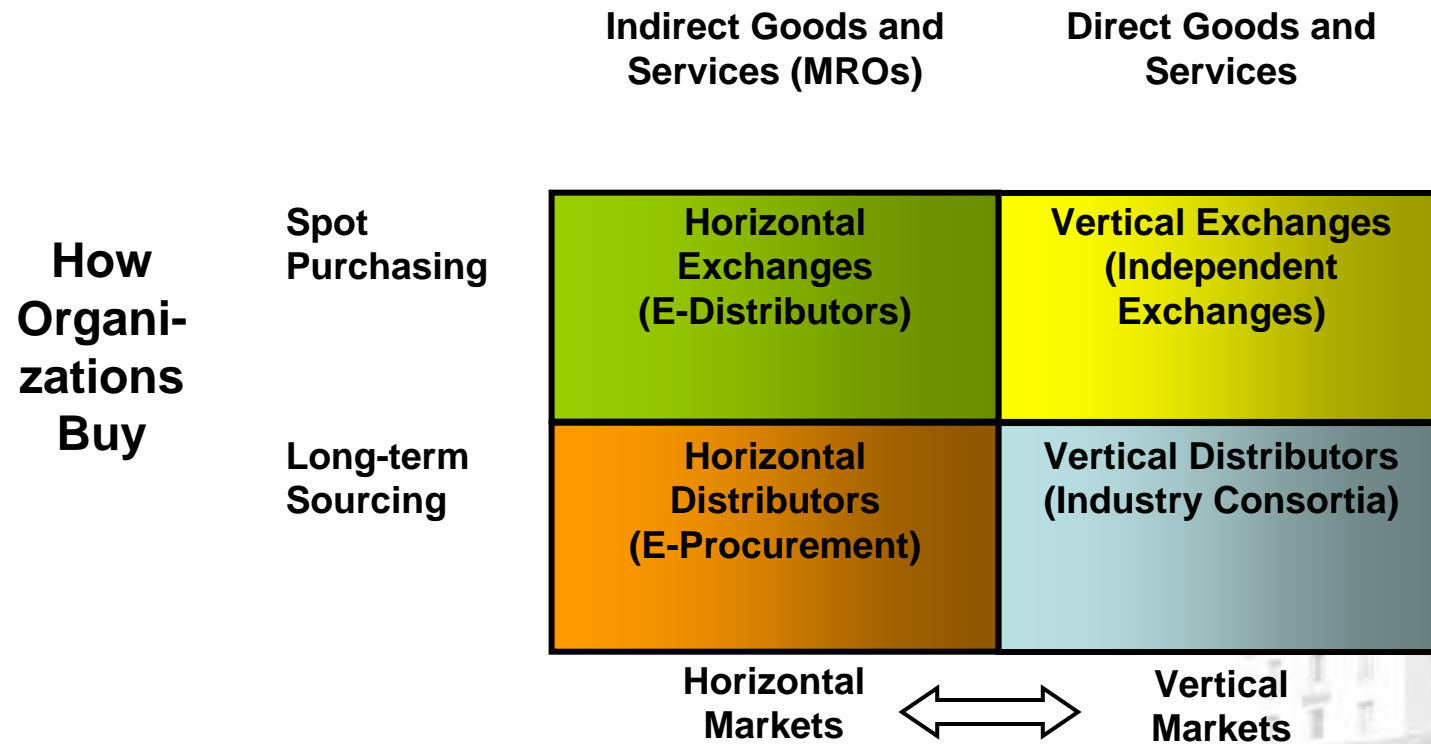
# B2B Exchanges

- B2B exchanges bring hundreds of buyers and sellers into a single Internet-based environment to conduct trade
- They can be organized by ownership, pricing, revenue, bias, and the markets they serve



# Types of Exchanges

## What Organizations Buy



# Horizontal Exchanges

- Independently owned intermediaries that offer individual customers a single source from which to make spot purchases of indirect or MRO goods
- Operate in a horizontal market that serves many different industries with products from many different suppliers
- Operate “public” markets and usually charge fixed prices



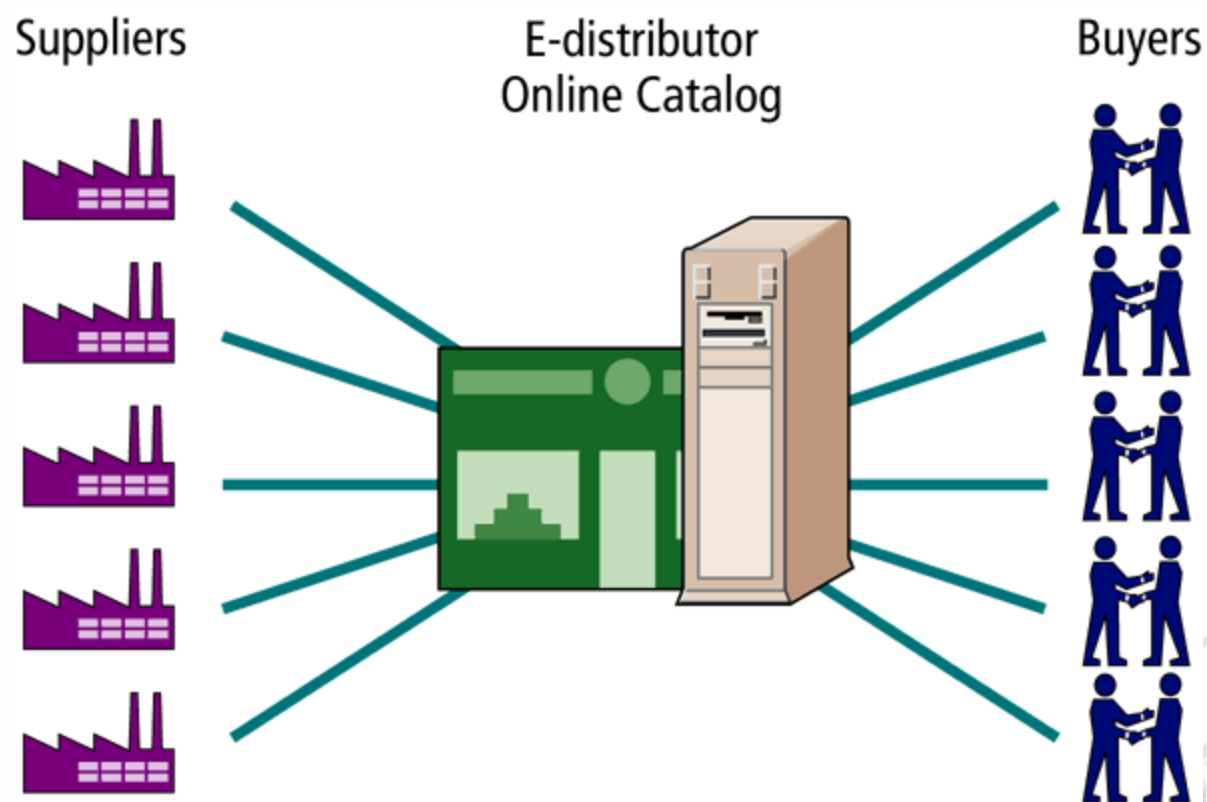


## Horizontal Exchanges (cont'd)

- Primary benefits to customers are lower search costs, lower transaction costs, wide selection, rapid delivery, and low prices
- Make money by charging a markup on products they distribute
- Example of a horizontal exchange is Grainger and the DoD Email



# Horizontal Exchanges (cont'd)



SOURCE: Laudon & Traver, *E-commerce: business, technology, society*, 2001



# Horizontal Distributors

- Independently owned intermediaries connecting hundreds of online suppliers offering millions of MRO goods to business firms who pay a fee to join the market
- Operate in a horizontal market in which long-term contractual purchasing agreements are used to buy indirect goods

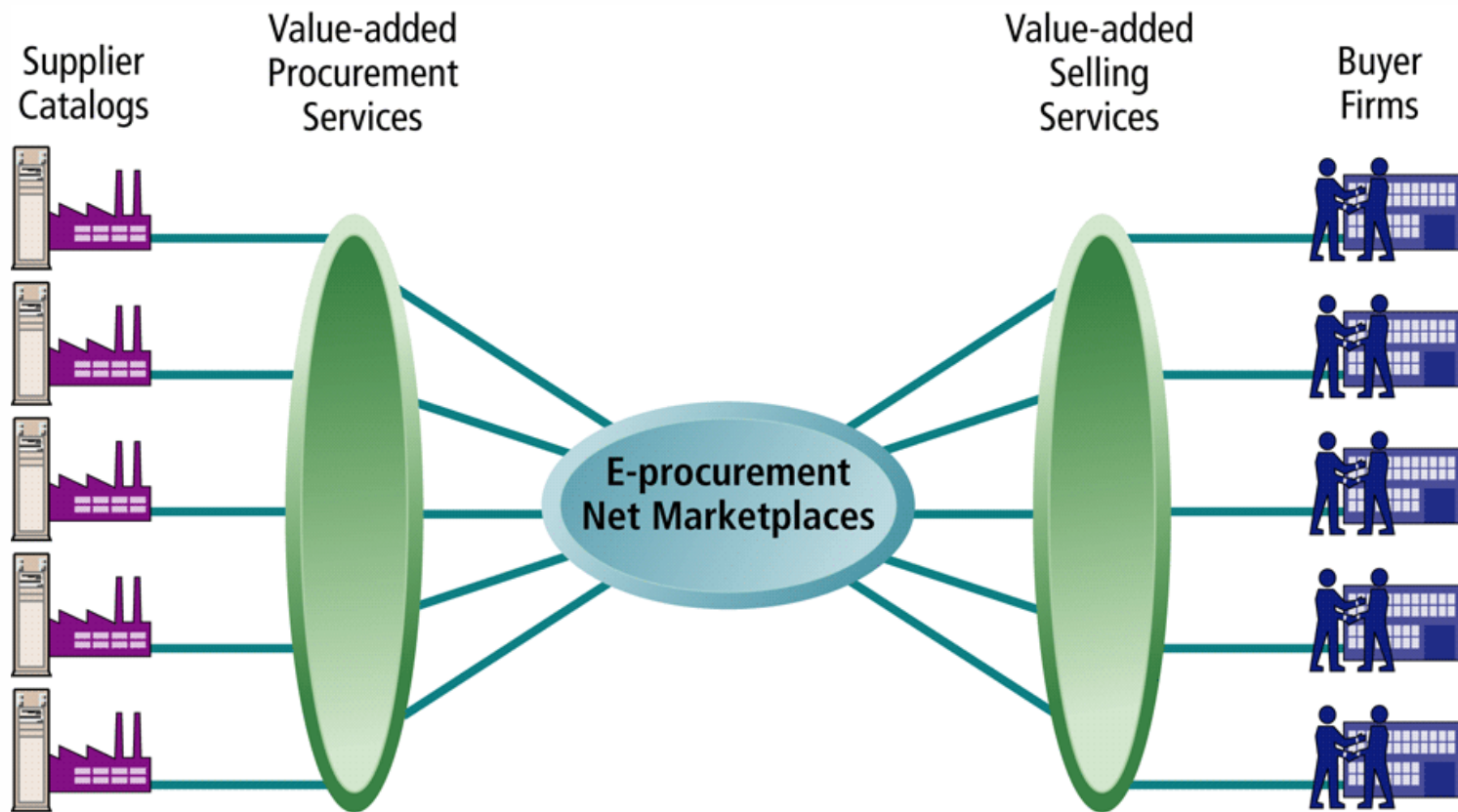


## Horizontal Distributors (cont'd)

- Provide value chain management services -- include the automation of a firm's entire procurement process on the buyer side and the automation of the selling business processes on the seller side
- Two largest e-procurement players are Ariba and Perfect Commerce



# Horizontal Distributors (cont'd)



SOURCE: Laudon & Traver, *E-commerce: business, technology, society*, 2001



# Vertical Exchanges

- Independently owned online marketplaces that connect hundreds of suppliers to potentially thousands of buyers in a dynamic real-time environment
- Typically vertical markets in which spot purchases can be made for direct inputs (both goods and services)
- Make money by charging a commission on each transaction



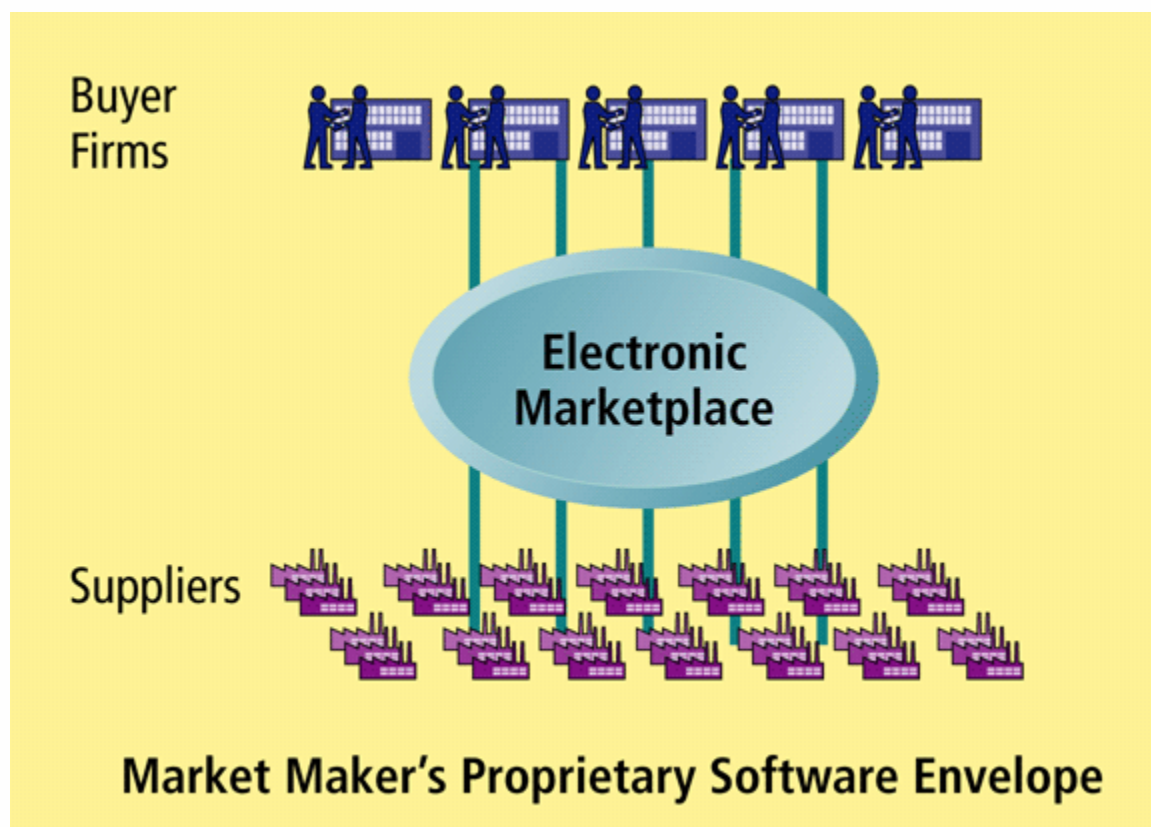
## Vertical Exchanges (cont'd)

- Pricing can be through an online negotiation, auction, RFQ, or fixed prices
- Benefits for buyers include reduced search costs, lower prices
- Benefits for sellers include access to global purchasing environment and opportunity to unload production overruns
- Exchanges are “public” markets and are biased in favor of the buyer





# Vertical Exchanges (cont'd)



SOURCE: Laudon & Traver, *E-commerce: business, technology, society*, 2001



# Examples of Vertical Exchanges

TABLE 12.4	SOME EXCHANGES
EXCHANGE	FOCUS
<p>E-Steel.com</p> <p>Altranet.com (Altra Energy)</p> <p>Smarterwork.com</p> <p>AskAD.com</p> <p>Activeinternational.com</p> <p>Foodtrader.com</p> <p>E-greenbiz.com</p> <p>Powerfarm.com</p> <p>Textradeinternational.com</p> <p>Carrierpoint.com</p>	<p>Spot market for steel products.</p> <p>Real-time online network for trading gas, power, and liquids.</p> <p>Spare professional services from Web design to legal advice.</p> <p>Unsold advertising auctioned online.</p> <p>Trading in underutilized manufacturing capacity.</p> <p>One of the largest B2B spot trading sites for the food products industry.</p> <p>Online spot market for nursery supplies.</p> <p>Online spot purchasing for the farm industry.</p> <p>Global textile network for fiber and yarns trading.</p> <p>Spot market for the trucking industry.</p>

SOURCE: Laudon & Traver, *E-commerce: business, technology, society*, 2001



# Vertical Distributors

- Industry-owned vertical markets where long-term contractual purchases of direct inputs can be made from a limited set of invited participants
- Serve to reduce supply chain inefficiencies by unifying the supply chain for an industry through a common network and computing platform



# Vertical Distributors (cont'd)

- Make money through:
  - Industry members who pay for the creation of the site and contribute initial operating capital
  - Buyer firms who pay transaction and subscription fees
- Pricing mechanism ranges from auctions to fixed prices to RFQs



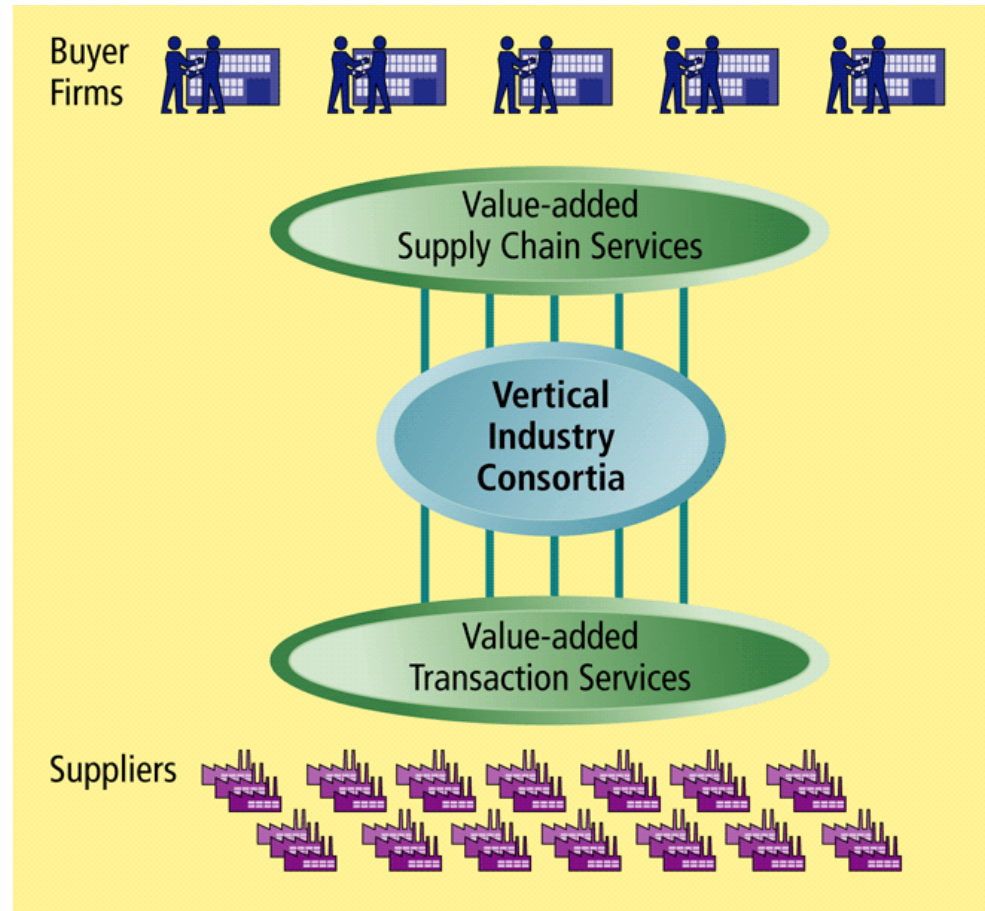
## Vertical Distributors (cont'd)

- Bias of industry consortia is toward large buyers who benefit from competitive pricing
- Benefit to suppliers is from access to large buyer firm procurement systems, long-term stable relationships, and large order sizes



# Vertical Distributors (cont'd)

Market Maker's  
Proprietary  
Software  
Envelope



SOURCE: Laudon & Traver, *E-commerce: business, technology, society*, 2001





# Vertical Distributors by Industry

TABLE 12.6 INDUSTRY CONSORTIA BY INDUSTRY (NOVEMBER 2000)	
INDUSTRY	NAME OF INDUSTRY CONSORTIA
Aerospace	Aeroxchangewww.find; Cordiem.com; Exostar.com
Agriculture	Rooster.com
Automotive	Covisint.com; SupplyOn.com
Chemical	AllianceChem.com; Elemica.com; ChemConnect.com; RubberNetwork.com; ElastomerSolutions.com; Omnexus.com
Computers, Consumer Electronics, and Telecommunications	e2open.com; eHITEX.com
Construction	Mercadium.com
Consumer Products	RetailersMarketXchange (rmx.com); Transora.com; GlobalNetXchange (gnx.com); WorldWideRetailExchange.com; UCCnet.com
Energy and Utilities	Pantellos.com; Enporion.com
Engineering	ec4ec.com
Financial	MuniCenter.com
Food	CPGmarket.com; Dairy.com; Electronic Foodservice Network (eFSNetwork.com); FSXchange.com
Hospitality	Avendra.com
Legal	LawCommerce.com
Medical Services, Supplies	Global Healthcare Exchange (ghx.com); HealthNexus.com
Metals and Mining	WorldMetal.com; The Global Steel Exchange (gsx.com)
MRO	CorProcure.com
Manufacturing	ManufacturingCentral.com
Oils and Metals (Trading)	IntercontinentalExchange.com
Paper and Forest Products	ForestExpress.com
Petroleum	Trade-Ranger.com; Pepex.com
Real Estate	ConstellationRealTechnologies.com
Shipping	LevelSeas.com; OceanConnect.com
Textiles	TheSeam.com (Cotton Consortium)
Transportation	Transplace.com

SOURCE: Jupiter Media Metrix, 2000b; www.nmm.com, 2001.





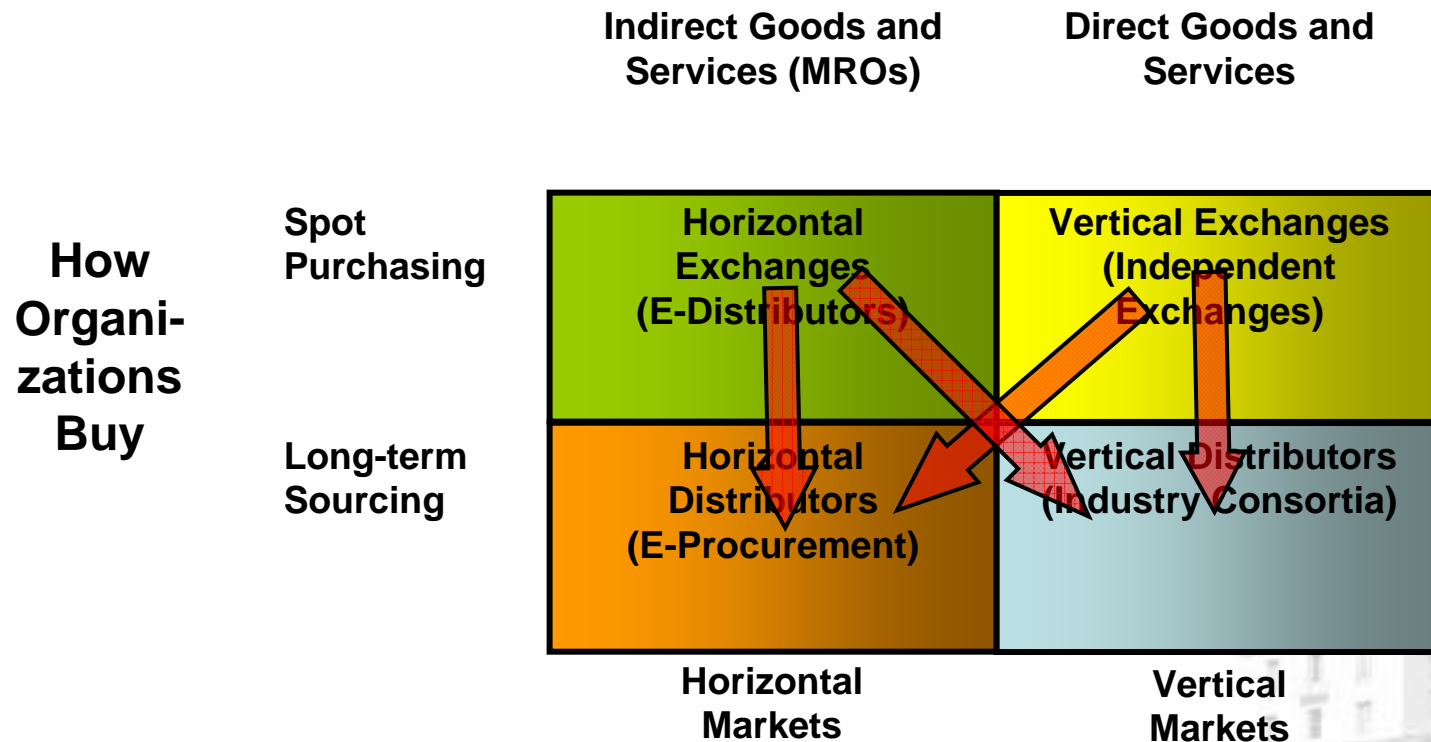
# How are Exchanges Evolving

- Movement from simple transactions of spot purchases to longer-term sourcing agreements
- Horizontal exchanges are moving toward more active and sustained relationships with buyer companies by providing added-value services
- Vertical exchanges are being absorbed into industry consortia



# How are Exchanges Evolving (cont'd)

## What Organizations Buy



# Collaborative Commerce

- Collaborative commerce describe Internet-based communication environments that extend beyond procurement to include trans-organizational business processes
- Permit buyer firms and principle suppliers to share product design and development, marketing, inventory, production scheduling, and unstructured communications



# Collaborative Commerce (cont'd)

- Range in scope from a single large firm to an entire industry
- Generally start as enterprise resource planning system in a single firm that is then expanded to include the firms major suppliers
- Transforms the supply chain by focusing on continuous business process coordination between companies

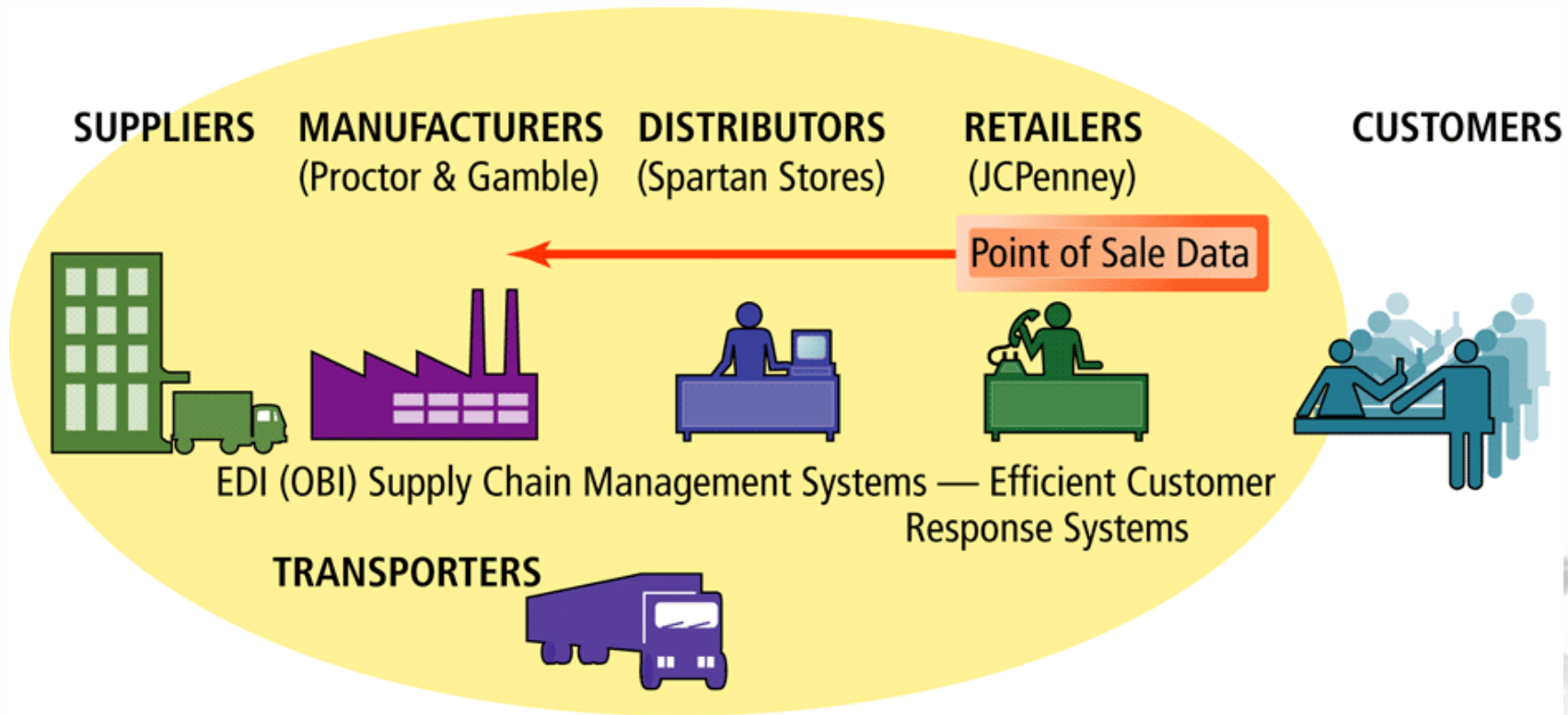


# Collaborative Commerce (cont'd)

- Coordination includes product design, demand forecasting, asset management, and sales and marketing plans



# Proctor & Gamble's Private Industrial Network



Private Industrial Network

SOURCE: Laudon & Traver, *E-commerce: business, technology, society*, 2001



# Implementation Barriers

- Participating firms are required to share sensitive data with their business partners
- Integrating private industrial networks into existing ERP systems and EDI networks is expensive and time consuming
- Collaborative commerce requires a change in mind-set and behavior of employees





# Conclusions

- B2B is e-commerce is growing and is expected to reach 40 – 50% of total B2B trade
- Many models of B2B have emerged each providing different functionality for the business it supports
- Newer models focus increasingly on value-added services and support of enterprise collaboration
- Important for DoD to examine these models in order to leverage the future of B2B



# Questions

