
E-commerce and the Supply Chain

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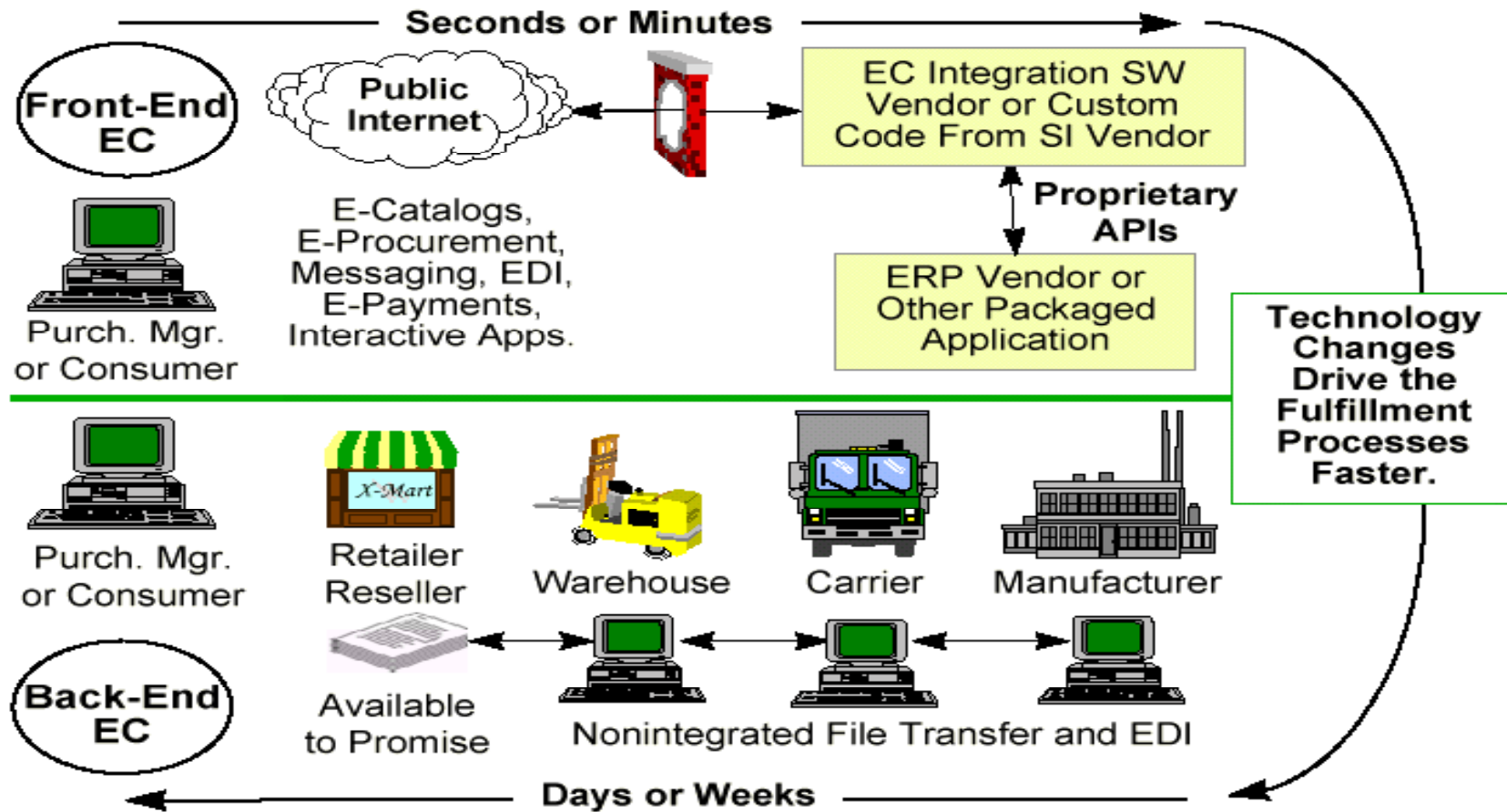
CGR Management Consultants



Two Types of E-Commerce with Very Different Characteristics

- **Business-to-Consumer (B2C)**
 - Amazon.com (Books, records, etc.)
 - Autobytel.com (Automobiles)
 - Vitaminshoppe.com (Vitamins and other OTC products)
- **Business-to-Business (B2B)**
 - Bcop.com (Boise Cascade office supplies)
 - Onvia.com (Business products and services, e.g., HR, travel. etc.)
 - Ultraprise (Bank-to-bank sale/exchange of consumer loans)

Goal: Speed and cost to market



Source: GartnerGroup

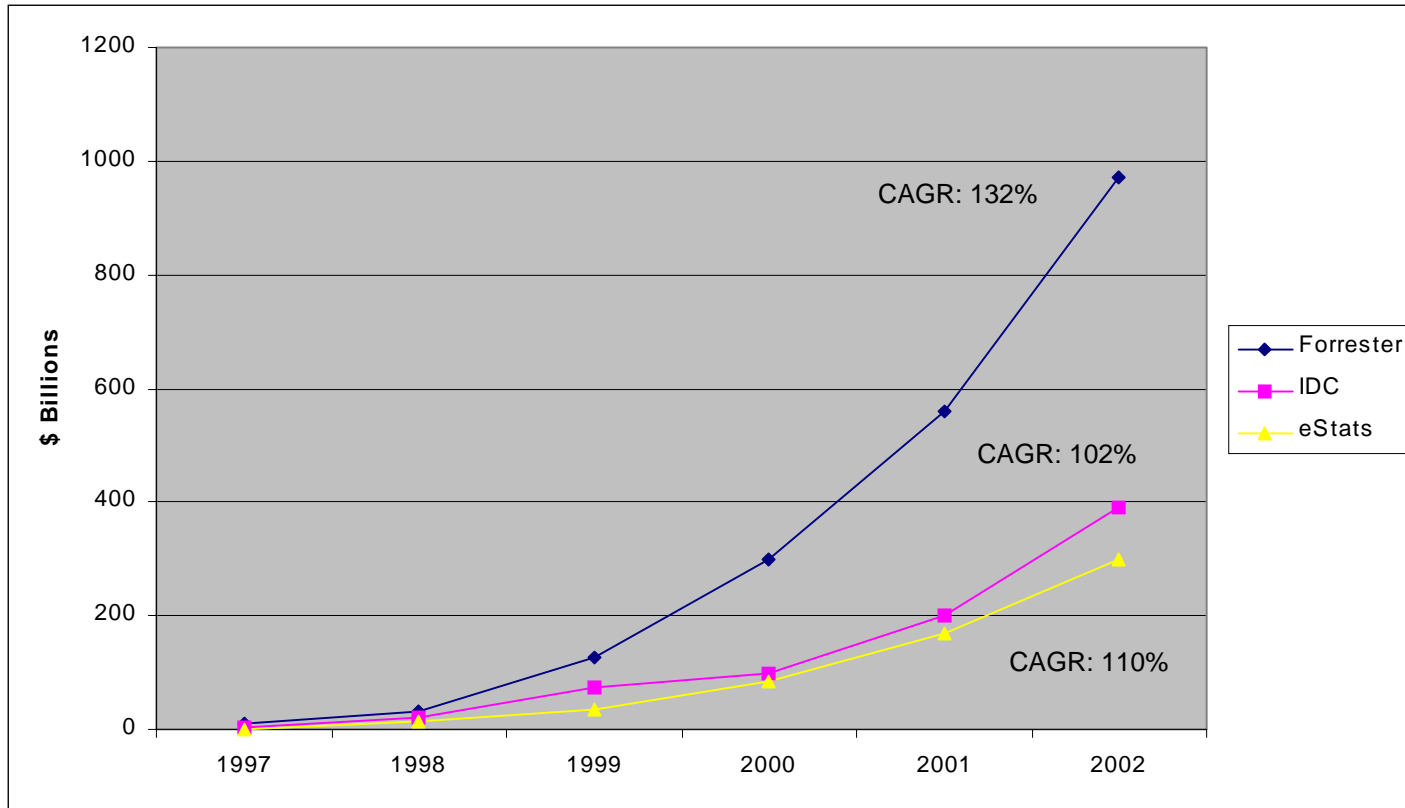


E-commerce (by itself) is Not the Goal!

“Let’s be clear on one thing: If you take a business that is a bad business and put it online, it’s still a bad business – it’s just become an online bad business.”

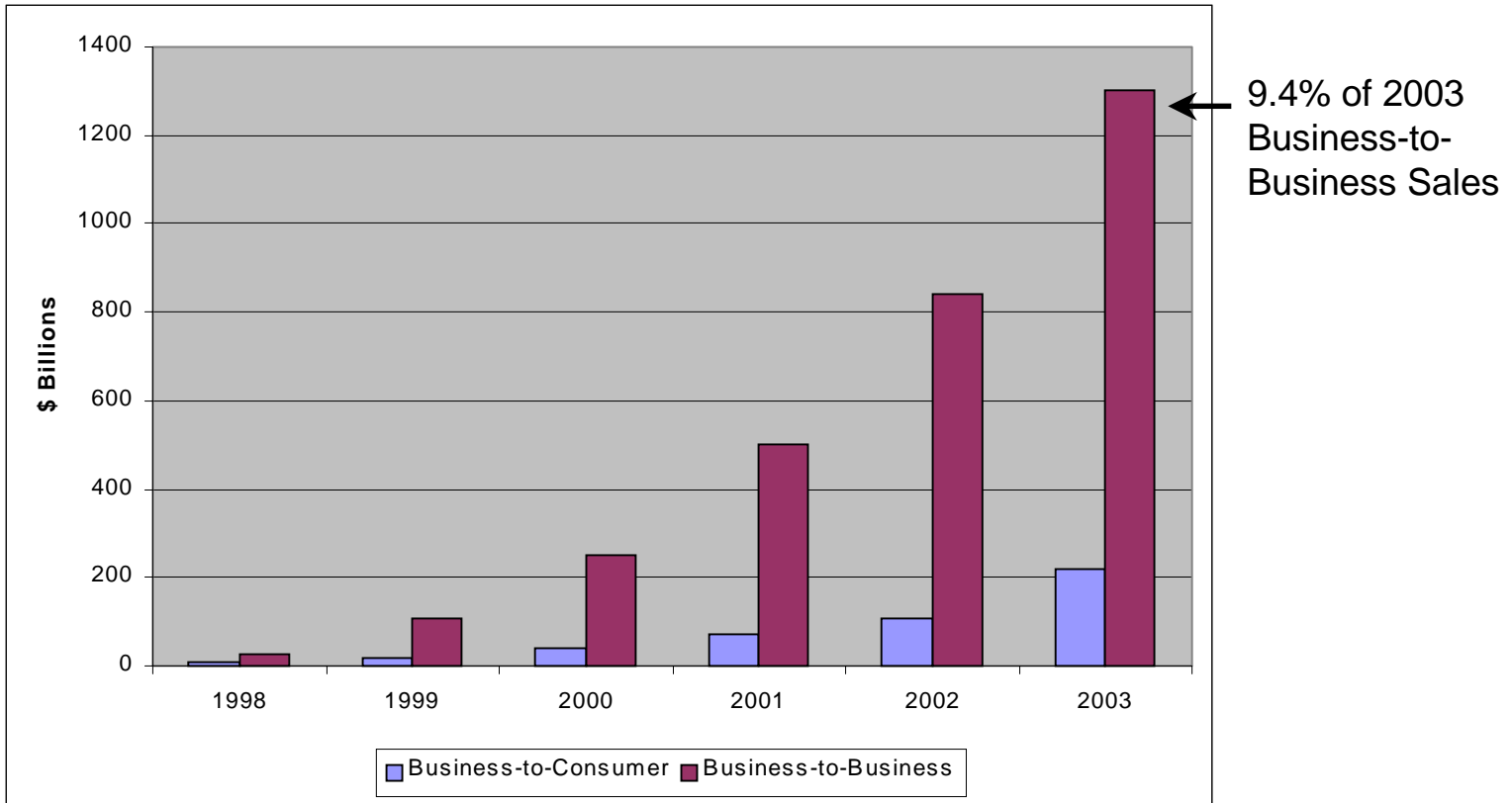
-- Michael Dell

US-based E-commerce is expected to grow rapidly



Source: eStats, IDC, London Business School, Forrester

B2B E-commerce is larger and expected to grow faster than B2C E-commerce

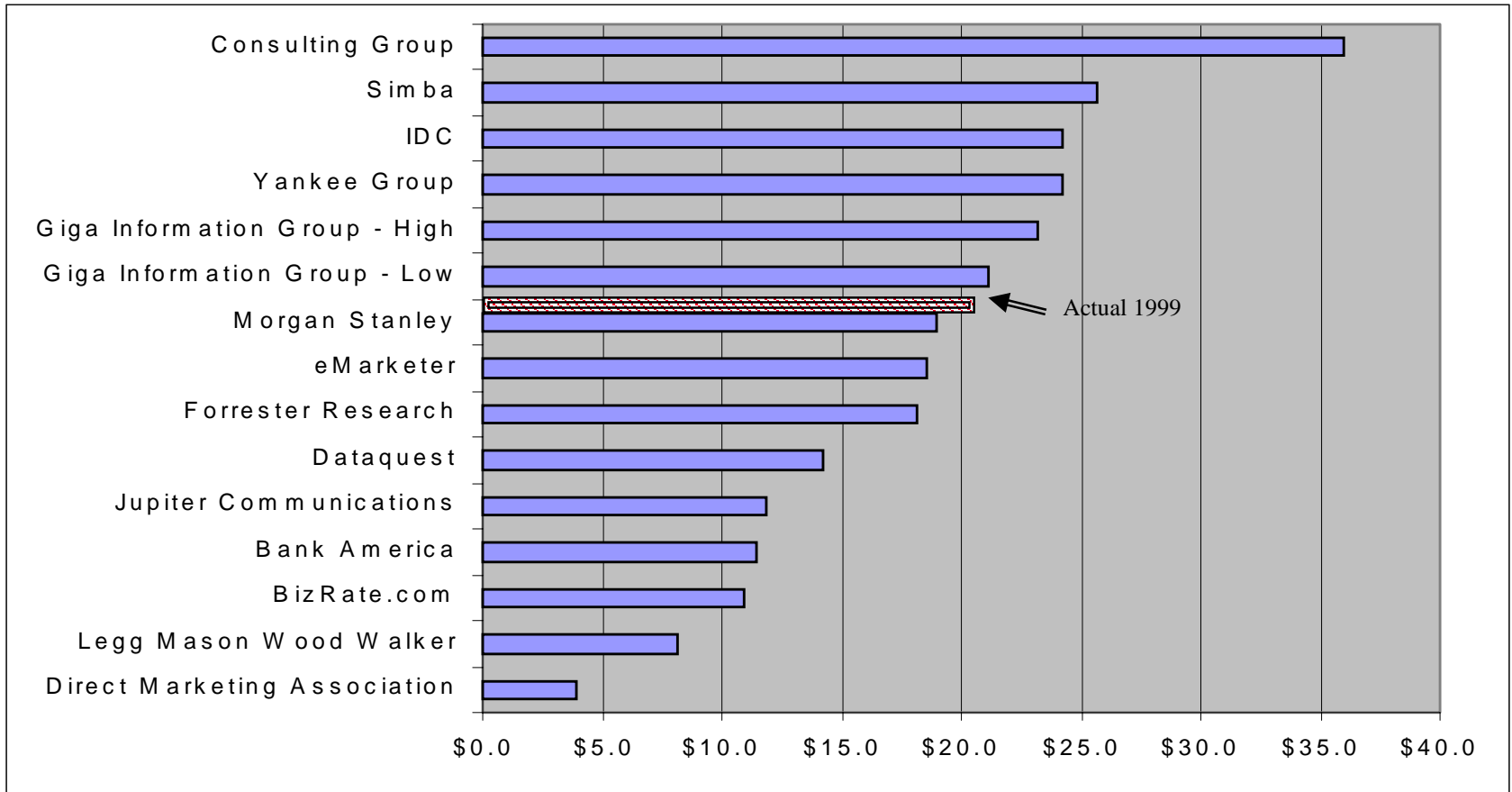


Source: Forrester Research 1998



Online Shopping Estimates Vary Widely

Estimated 1999 Consumer Online Shopping Revenues (in billions)



Source: eMarketer, 1999



E-commerce Will Drive Change in the Roles of All Members of the Supply Chain

Traditional Roles:	<u>Manufacturer</u> <ul style="list-style-type: none"> • Brand management • Product management • Channel management 	<u>Distributor</u> <ul style="list-style-type: none"> • Inventory financing • Break bulk logistics • Reseller management 	<u>Reseller</u> <ul style="list-style-type: none"> • Physical locations • Merchandising • Selling • Customer service
Additional roles for E-commerce:	<ul style="list-style-type: none"> • End-customer sales initiation (with great care) • Customer relationships • Drop ships • Web-based information • Vendor Managed Inventory (VMI) using collaborative systems 	<ul style="list-style-type: none"> • End-customer sales initiation (with great care) • Customer relationships • Assemble-to-order • Drop-ship • Ala carte' menu of fulfillment services • Web-based information • VMI using collaborative systems 	<ul style="list-style-type: none"> • Sell virtual inventory • Setup virtual stores • Web-based information

Case Study for the New Wholesaler/Distributor:

Daisytek, the “Ultimate Distribution Machine”

- “Roots” as a distributor of printer supplies, ribbons, etc.
- Re-positioned itself as the “Ultimate Distribution Machine”
- End-to-end transaction management, E-commerce and logistics services
- Web-processing from initial sale to final shipment and payment collection
- Call center management
- Product warehousing with real-time inventory availability and management
- Product fulfillment
- Shipment tracking
- Transaction management accounting (credit and collection)
- Sales of \$400 million during 1998
- Customers include IBM, Tektronix, HP and Nokia

Case Study for the New Manufacturer:

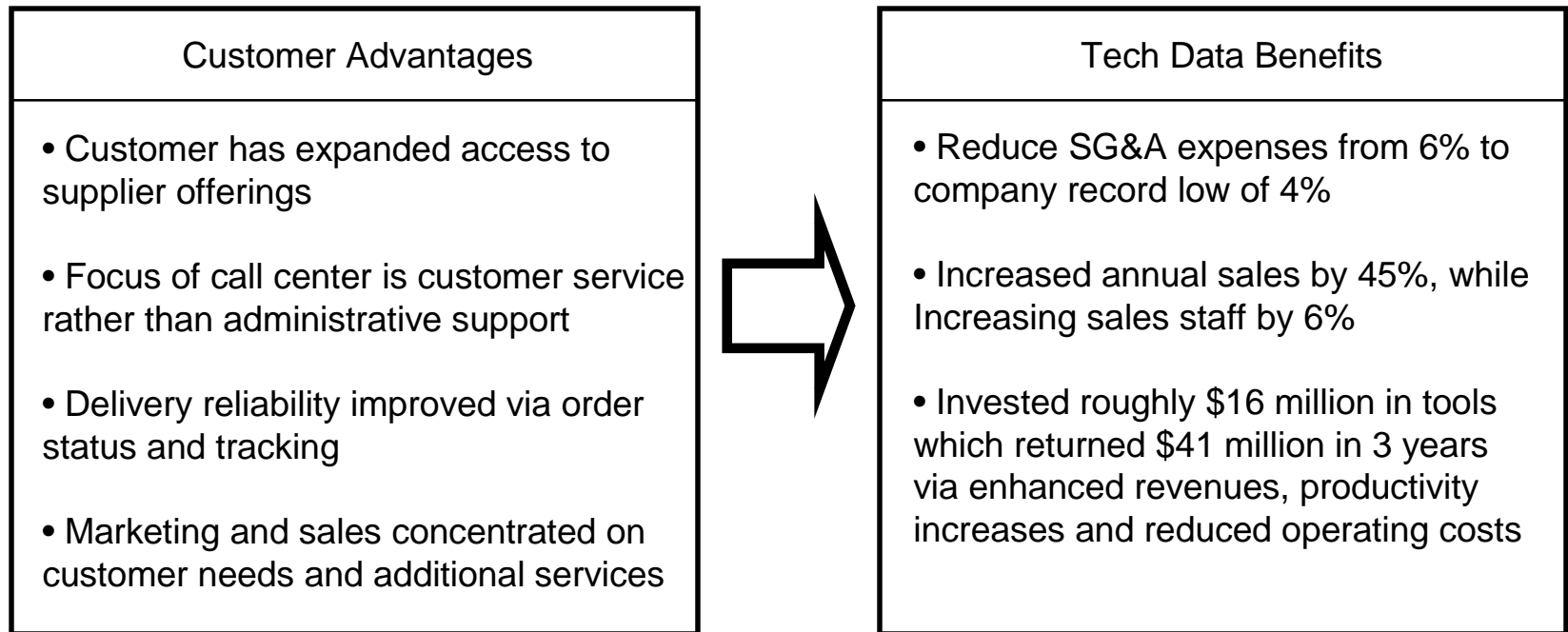
Sun Micro, a major computer manufacturer

- Sun made a major commitment to developing a seamless, “virtual” manufacturing partnership with its key suppliers several years ago
- The key ingredients of this partnership were:
 - Open sharing of strategic and operational objectives, plans and action programs
 - Electronic linkages to share sales forecasts, production plans, inventory status, etc.
 - A Supplier Council (quasi-board of directors) to set priorities for and assure continuation of the partnership
- The results achieved have been remarkable and contributed substantially to Sun’s success:
 - 80% reduction in total inventory
 - 45% inventory reduction via postponement configurations
 - Cycle time for warehouse pull reduced to four hours
 - Reduction in turnaround time for materials returned to suppliers from 15 days to one day
 - 47% reduction in lead time for shipments direct from suppliers to Sun’s customers
 - Total lead time reduced from three weeks to one day
 - Removal of five weeks from the process of Sun’s field quality reporting to suppliers
 - Increase in inventory turns from five to fourteen, with weeks of supply dropping from ten to three and one-half

Case Study for the New Wholesaler/Distributor:

TechData, a Major PC Distributor

- “Re-invented itself” by developing a range of electronic, customer-directed ordering and information interfaces, e.g., TD on CD, TD Online and TD on the Web



Examples of Successful E-commerce Supply Chain Strategies

- **Wal-Mart's use of EDI/cross docks**
- **McKesson's use of pharmacy SOPS devices**
- **AHS use of hospital stores SOPS devices**
- **Toyota and Mercedes-Benz JIT inbound logistics with suppliers**
- **Ford's accounts payable paperless match**
- **P&G's Every Day Low Prices (EDLP)**
- **Dell's B2C mail order PCs**
- **GE/GEISCO OEM&MRO parts reverse auctions**



Benefits of Successful Supply Chain Integration

- **Inventories reduced 50%**
- **20% reduction in supply chain costs as a percentage of total revenues**
- **40% increase in on-time deliveries**
- **Cumulative cycle time reduction of 27%**
- **17% increase in revenues**
- **Out-of-stock incidents down 9 times**
- **50% reduction in FG inventory by postponing packaging/labeling until orders received**

Source: MIT Center for Logistics Survey of 50 successful Supply Chain Re-engineering projects



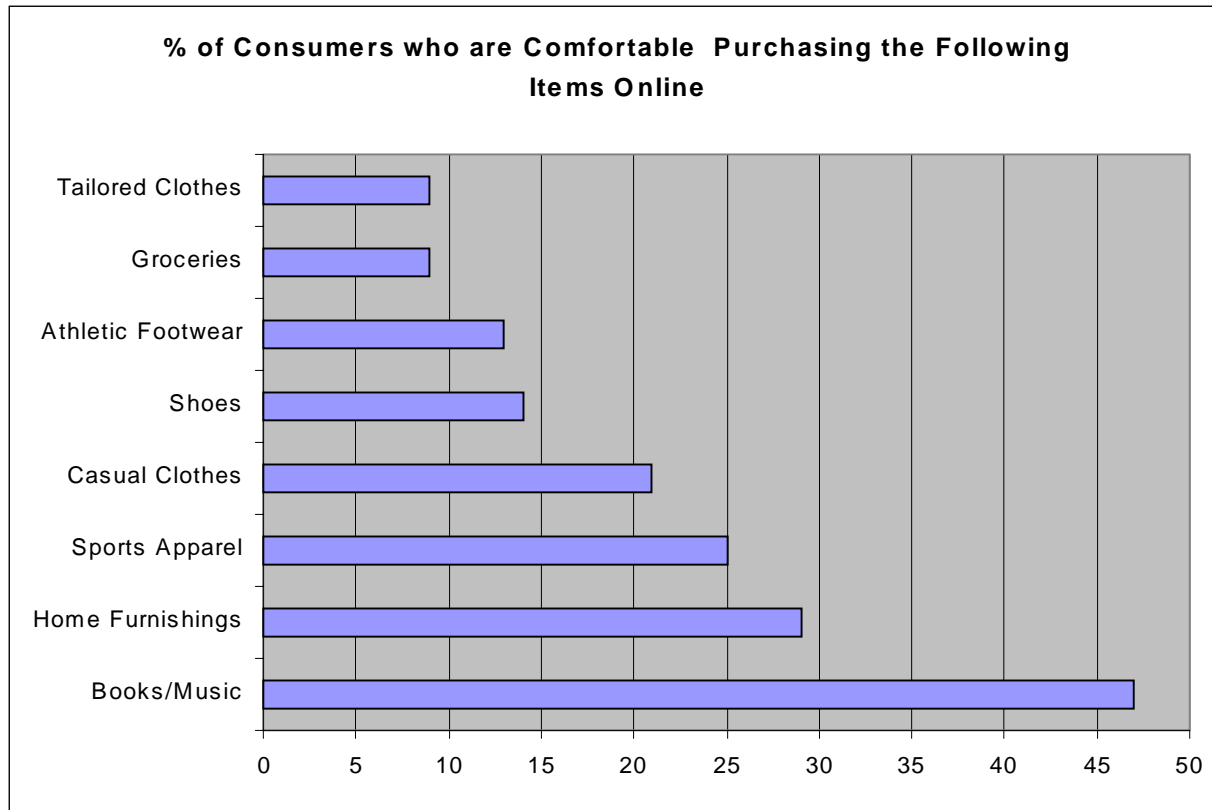
Business-to-Consumer E-commerce

Why Do Consumers Buy Online?

Easier and Faster Shopping

- **Greater assortment – 20,000 SKUs in a typical retail store with 10% out-of-stock vs. millions of SKUs with fewer out-of-stocks**
- **Better product information is only a click away vs. retail sales people who are often neither helpful nor knowledgeable**
- **Comparison shopping is simple and convenient and can be automated using shopping “bots”**
- **Purchases can be made in seconds via a few clicks of the mouse vs. traditional shopping that involves traveling to stores, parking, searching for products, standing in check-out lines, etc.**
- **Price is seldom a key factor in the decision**

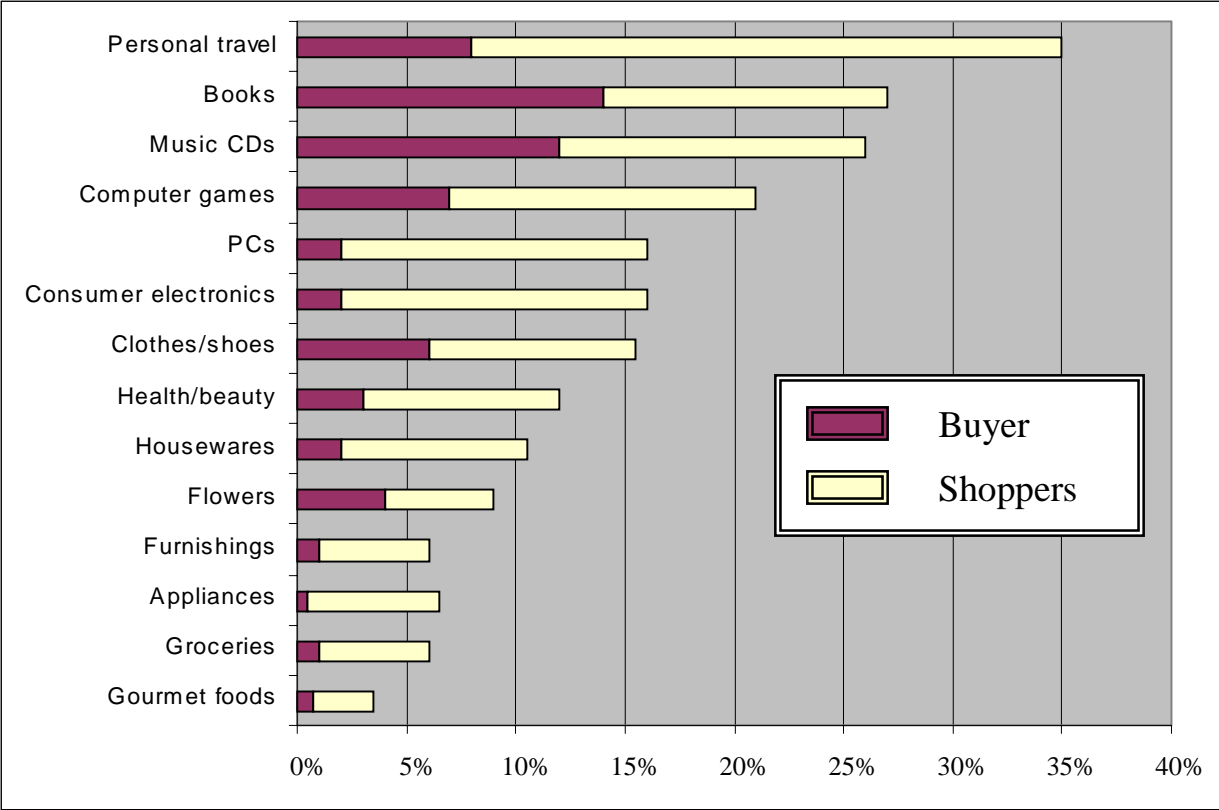
Not All Merchandise Categories will be Equally Successful in a B2C E-commerce world



Source: Kurt Salmon Associates 1999

Shoppers vs. Buyers

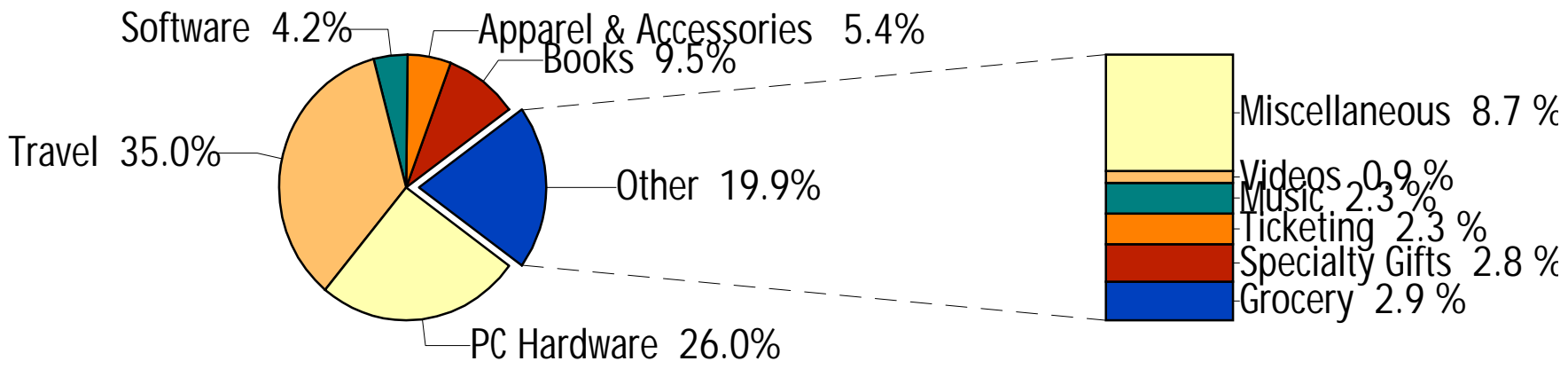
Shoppers versus buyers by product type, and as a percent of adult Internet users



Source: Dataquest



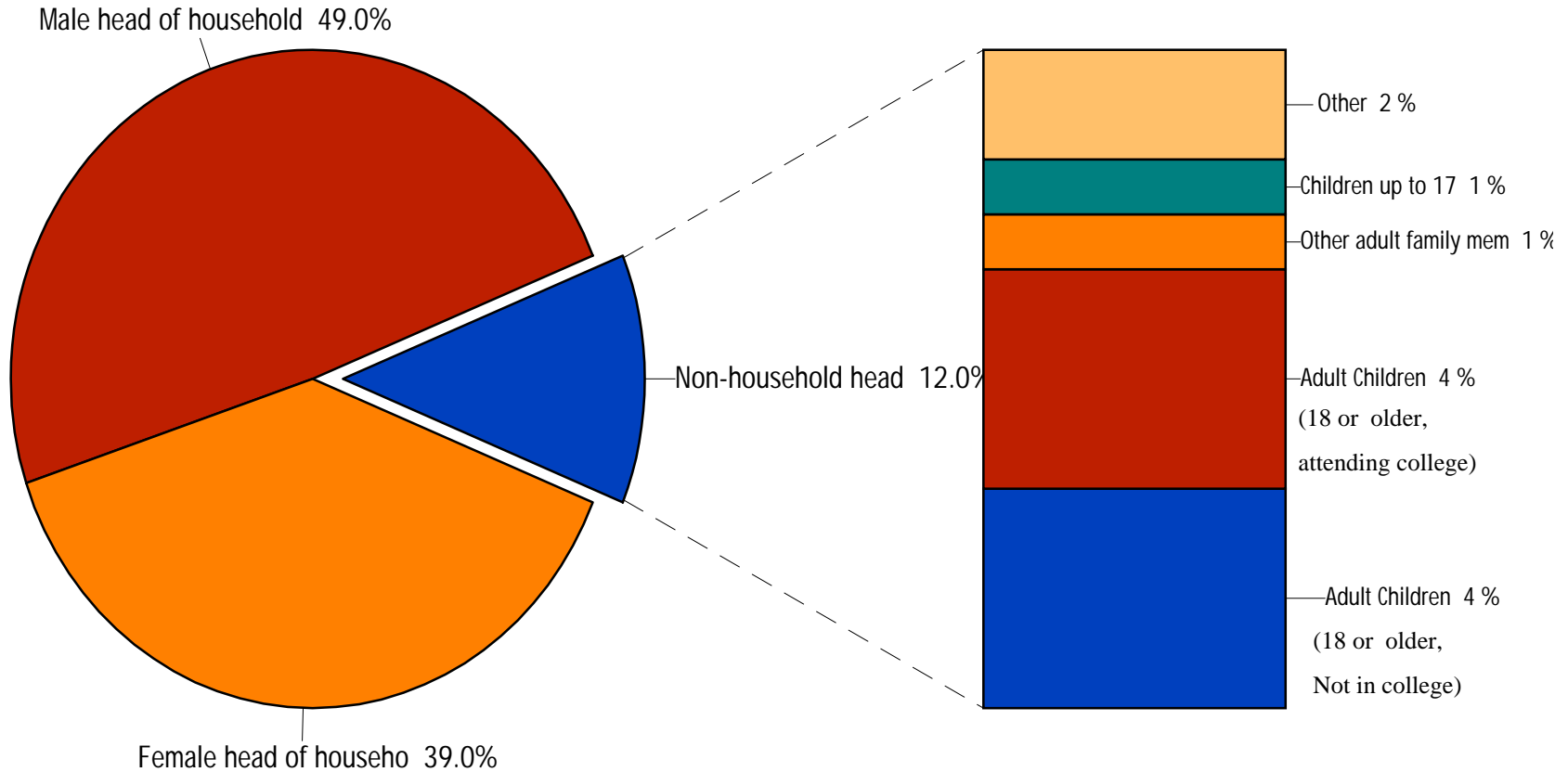
What People are Currently Buying On-Line



Source: Jupiter Research 1999



Who Shops On-line?



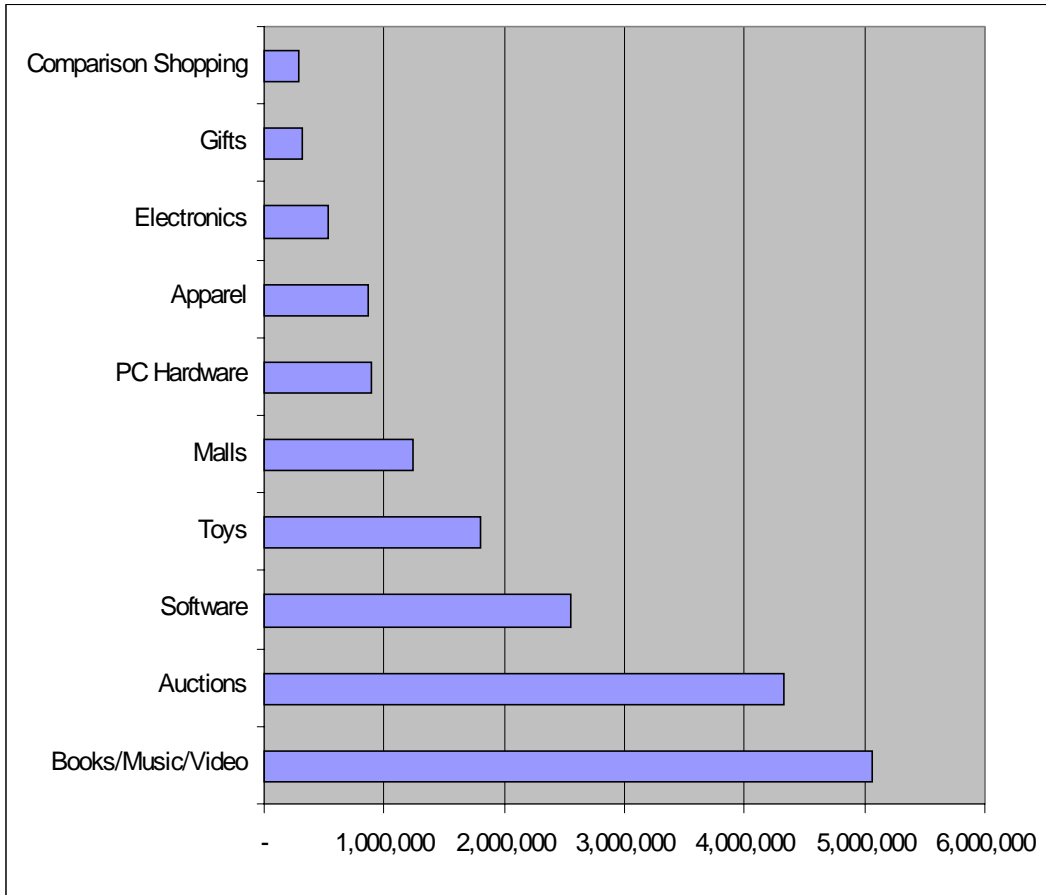
Source: Ernst & Young 1999

Case Study for the New Reseller/Retailer:

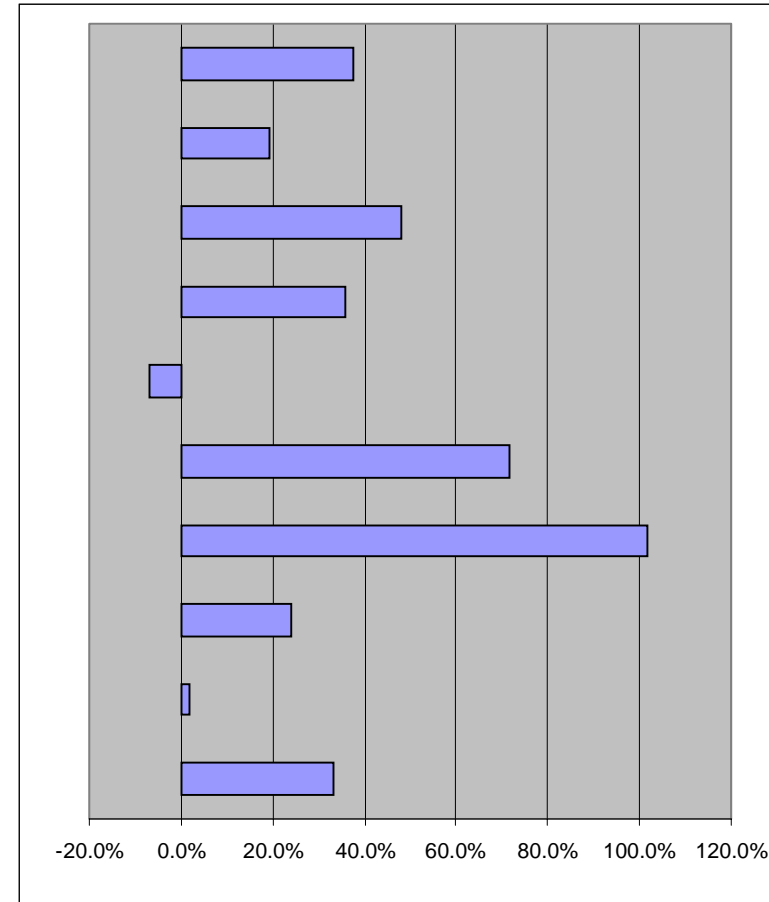
Amazon.com, the World's Leading "E-tailer"

- Defined the world of "E-tailing" with its Internet-based offering of books, music, videos, etc. by being "first-to-market"
- Offers over one million books for sale via a very user-friendly interface that includes reviews, book rankings, "who is buying this book" and various recommendations
- Has expanded to toys, games, electronic cards, pet supplies, electronics, pharmaceuticals, sporting goods, groceries and auctions
- Has recently started adding warehouses and logistics experts in great quantities to "beef-up" the fulfillment side of the business
- Just added "zShop" order entry and fulfillment services to anyone interested in moving their products using the Amazon.com "machine"
- Currently serving 13 million people annually in 160 countries
- Annual revenues of \$1.6 billion, losses of \$0.7 billion and a market capitalization that is astronomical

On-Line Shoppers are Increasing at an Tremendous Rate



Number of Weekly "Clicks" on Category Sites



Monthly % Growth Rate in Shoppers ("Clicks")

Source: Nielsen/NetRatings 11/99



Top 10 Complaints from On-line Shoppers

- **Product was out of stock**
- **Item wasn't delivered on time**
- **Paid too much for delivery**
- **Connection trouble**
- **Didn't get a confirmation or status report**
- **Selections were limited**
- **Site was hard to navigate**
- **Site didn't provide enough information**
- **Prices weren't competitive**
- **Site didn't offer enough gift ideas**

Source: Andersen Consulting



Lessons Learned from the E-tailer Shakeout

DO...

- **Keep it simple**
 - Websites should be simple, fast and easy to navigate
- **Get creative with marketing**
 - Try things like swapping mailing lists, online auctions, etc.
- **Think like your customers**
 - Target related-interest web communities for Banner Ads, etc.
- **Make nice with shoppers**
 - When all else fails, have a friendly call center ready to close the sale

DON'T...

- **Blow everything on TV Ads**
 - No one remembers them anyway
- **Expect portals to solve everything**
 - Tie-ins with AOL and Yahoo! only return benefits if your basic offering is attractive to consumers
- **Undercut prices like Crazy Eddie**
 - This is a great way to lose money and is not a good long term strategy
- **Get too personal too soon**
 - Long detailed questionnaires tend to scare away customers before the information gained can be used to customize your product offering

Case Study for the New Reseller/Retailer:

Dell, the Leading Provider of PCs

- Revolutionized the PC industry through its “customer direct” marketing and its reinvention of the supply chain
- Customers order via call center or online with ability to customize PC plus order related products and/or accessories
- Customer pays immediately upon placing order
- Dell buys off-the-shelf components daily and stores them by the truckload within 50 feet of the assembly line
- Each PC is custom assembled and shipped within five days of receiving the order
- Dell shares all order information, inventory levels, etc. with suppliers via web in order to achieve “virtual integration” with suppliers
- Benefits include:
 - Fastest growth in the industry
 - Greatest profitability in the industry
 - Inventory level of seven days-on-hand vs. industry average of fifty
 - Net working capital of negative nine days

What Should the Traditional “Bricks-and-Mortar” Retailer Do in a World of B2C E-commerce?

- **Develop and exploit Private Label/Store Brands**
- **Develop a dual presence as both a “Bricks-and-Mortar” retailer and as an “e-tailer” using your web-site. Promote both aggressively and exploit the tie-ins between the two.**
- **Sell higher-margin accessories and impulse items (both in your stores and on your web-site)**
- **Develop an efficient distribution system that is capable of small package fulfillment (unlike your store replenishment processes from your captive and suppliers warehouses – which is primarily focused on bulk product replenishment)**
 - **“If a customer wants a trailerload of toasters, we’d be happy to accommodate them. But, if they want one, we have some work to do”**
-- A senior executive of Sears
- **Don’t wait. Invest now for the world of B2C E-commerce. Your future is in your hands!**
 - **“It’s E-business or out of business” – A senior executive of Oracle**

Business-to-Business E-commerce


Three Types of B2B E-commerce:

Horizontal

Vertical

Exchange

Horizontal B2B E-commerce



Brings B2B buyers across industries to buy multiple product categories from multiple suppliers e.g., multiple companies buying office supplies from various alternative office supply sources. The same companies would also use the software to buy other product categories, e.g., travel services.

Key Horizontal systems providers are:

- Ariba
- Commerce One
- Oracle
- Concur Technologies
- Clarus
- Intelisys
- ProcureNet
- PurchasePro


Benefits arise from streamlining overall process, lowering transaction costs, and (sometimes) pooling purchasing “clout” to achieve better prices

Web-based Office Supply Companies

Company	# of Office Products Carried	Online Office Products Sales	Other Products and/or Services
AtYourOffice.com	30,000	\$ 2.4 million	Phone systems, travel
Bigtree.com	38,000 (United Stationers)	\$ 3 million	
Onlineofficesupplies.com	35,000	\$ 16 million	Web-front-end for traditional OP retailers
Officedepot.com	10,000+	\$ 300 million	Small business advice
Officemax.com	40,000	NA	
Staples.com	31,000	\$ 200 million	Payroll, telephone, etc.
Works.com	20,000+	NA	Purchasing process and work flow simplification
Bcop.com (Boise Cascade)	30,000	NA	
Cybersupply.com	10,000+	NA	
Onvia.com	10,000+	NA	Variety of products and services
Penny-wise.com	40,000	NA	
Usop.com (United Stationers)	30,000	\$ 37 million	
Valueamerica.com	10,000+	NA	Computers, electronics, pharmacy, grocery, etc.



Vertical B2B E-commerce



Brings B2B buyers within an industry together to buy product categories of particular interest and value to that industry e.g., multiple companies in the petrochemical industry interested in buying valves, solvents, etc. Software might also match buyers and sellers through a “bidding” or auction processes.

Key Vertical systems providers are:

- Tradex Technologies
- E-Steel & MetalSite (Site matches buyers and sellers of steel)
- Esurg (Site matches buyers and sellers of medical (Doctor’s Office) products)
- FastParts (Site matches buyers and sellers of electronic components via bidding)
- SciQuest (Site matches buyers and sellers of electronic scientific instruments)
- Chemdex (Site matches buyers and sellers in the chemical industry)
- Ultraprise (Bank-to-bank sale/exchange of consumer loans)
- Farms.com (Cattle, feed, farm real estate, etc. sales via auction)

Benefits arise from streamlining overall process, lowering transaction costs, and achieving better prices (sometimes) via pooling purchasing “clout” or through online bidding process

Industry “Exchange” B2B E-commerce

Takes the Vertical approach to its logical conclusion by creating an industry “exchange” or marketplace where buyers and sellers in a particular industry can fulfill all of their product needs in one place.

These exchanges are generally being formed, owned and operated by a consortium of major buyers with the sellers often being reluctant participants.

Recent key industry “Exchanges”:

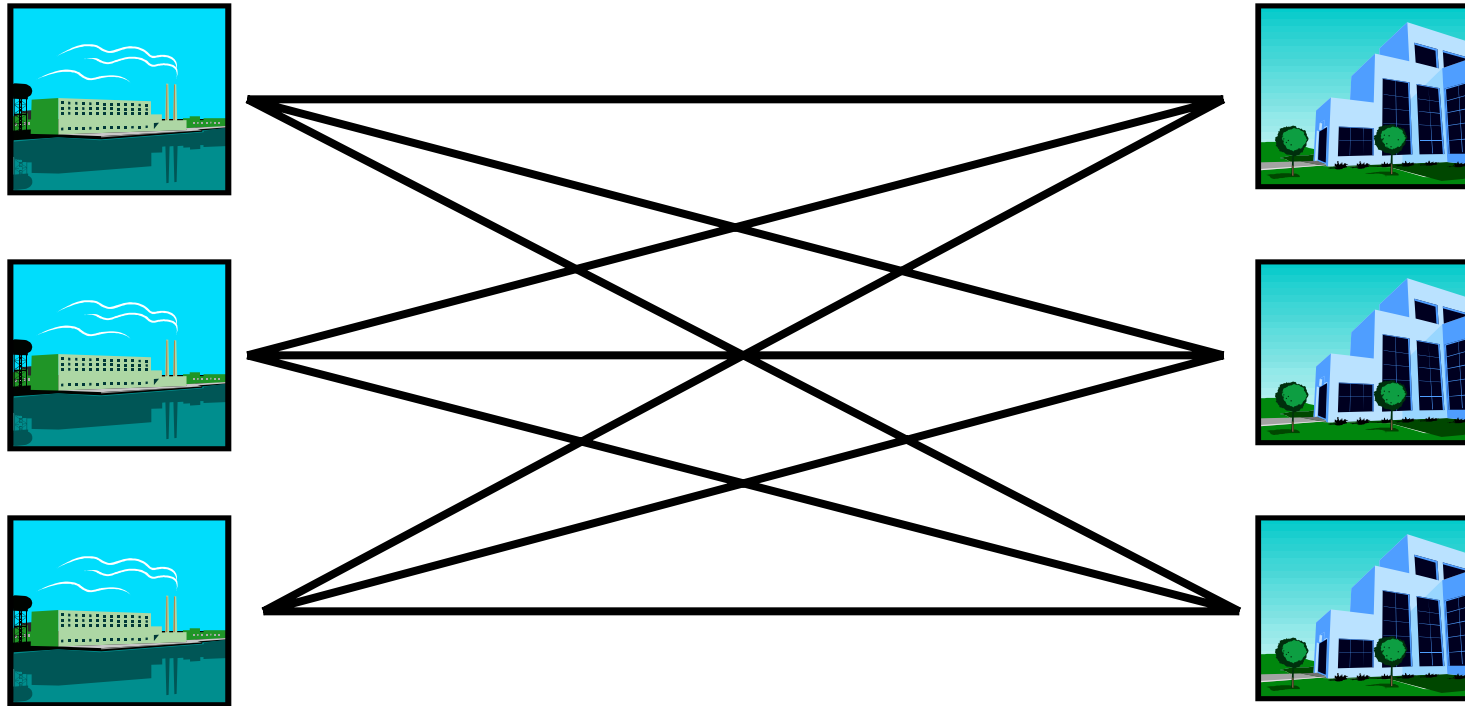
- Covisint - Big three automakers plus Toyota
- Twelve large PC makers including Dell, HP, et. al. (doesn't include Intel)
- Healthcare buyers including the nation's largest hospital and HMO buying groups
- Major Retailers including Wal-Mart, Carrefours, Sears, Safeway and others

Benefits arise from streamlining overall process, lowering transaction costs, and achieving better prices via pooling purchasing “clout.”

Words of caution: Exchanges must not be too greedy; sellers must still make a satisfactory profit! Also, Exchanges must be careful to avoid price fixing or unfair competition – the Government is monitoring closely.



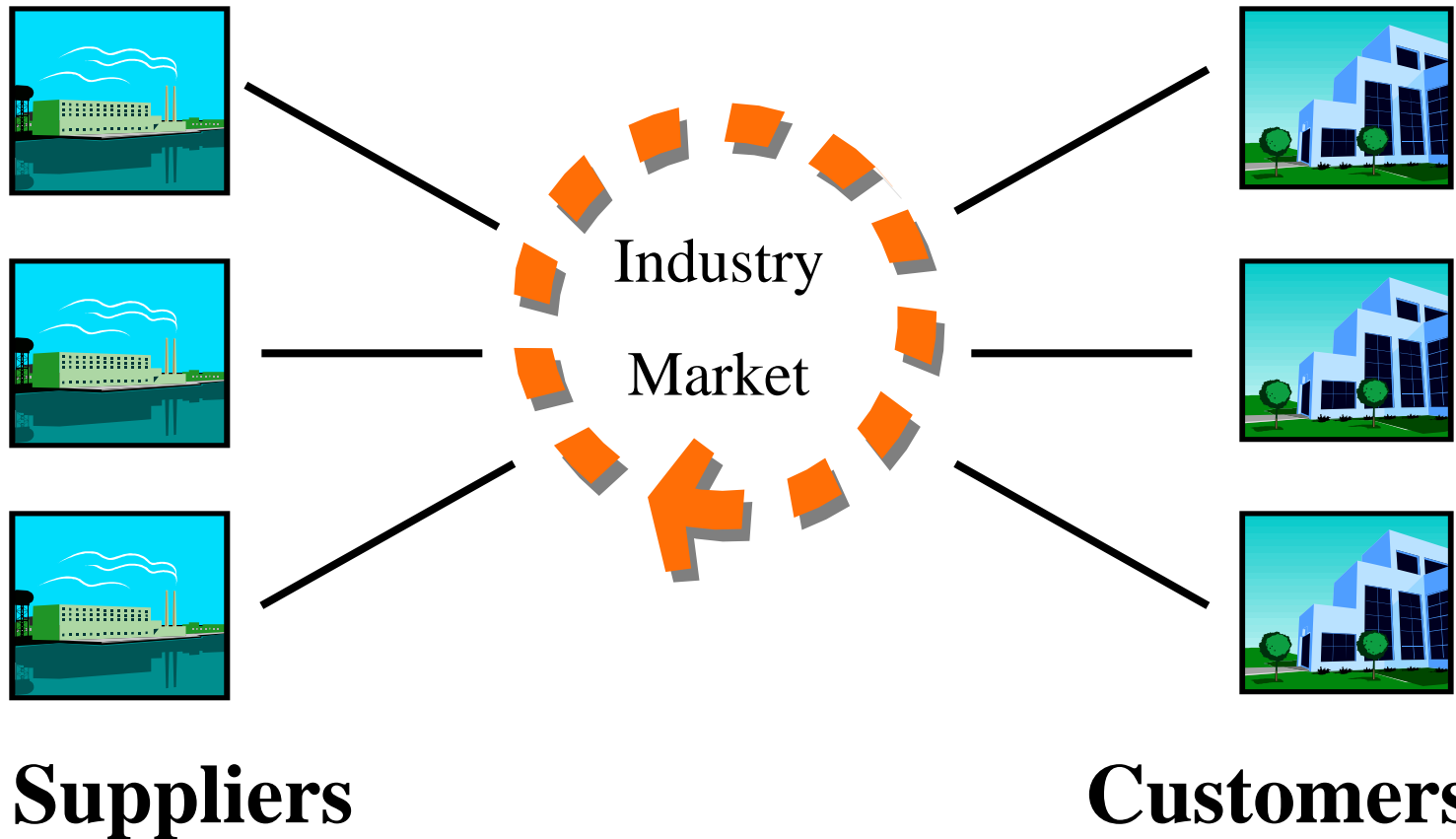
“Traditional” Industry Supply Chain



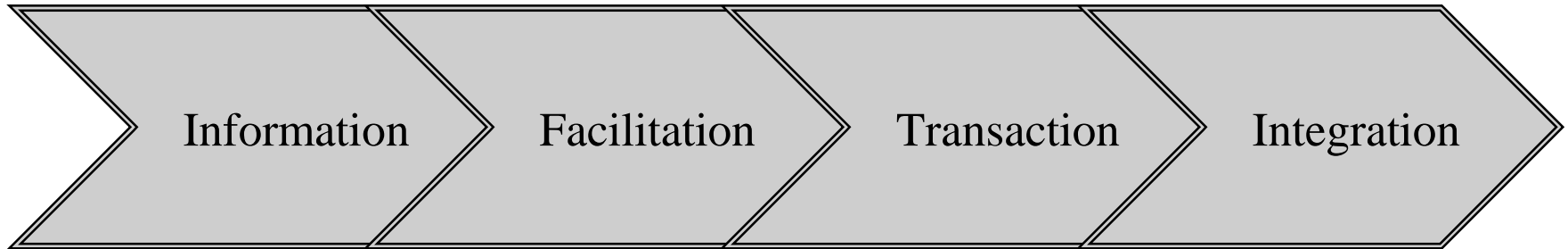
Suppliers

Customers

“Exchange” Industry Supply Chain



Evolution of Exchange Functionality



- Directory
- Product Database
- Content Rationalization
- Search Capability
- Online Experts
- Editorial Content
- Discussion Forums
- Job Markets

- Product/Service Posting
- RFP/RFQ Posting
- Collaboration/Planning
- Auction
- Negotiation

- Registered Participants
- Hold A/R
- Support for Pre-negotiated Terms and Prices
- Order Status
- Shipment Integration

- Support for Workflow
- Integration With Supplier and Buyer Back-end Systems
- Integration With Other Exchanges
- Support for Reverse Logistics
- Online Analytical Process Capability

Source: Scott Latham, Supply Chain Management Review, May/June 2000, Page 26

Case Study for the New Manufacturer: Ford

- **Web-based system aimed at facilitating collaboration by sharing information with suppliers, dealers and ultimately customers**
- **Seamless access to Ford data about:**
 - Product design information
 - Current inventory levels
 - Quality control
 - Sales and aftermarket service information
- **Launched with dealers and 1500 suppliers on June 1, 1999. Currently rolling out to all 30,000 suppliers**
- **Next phase is to integrate suppliers information to automate information exchange and updates**
- **Has already increased access to data and improved efficiency**

Case Study for the New Manufacturer: Cisco

- Cisco has streamlined its procurement, production, testing and installation processes through electronic linkages with its key suppliers
- All purchasing is done via online links with suppliers
- 70% of customer orders are logged directly on to Cisco's web-site including customized options and instantaneous pricing
- These customer orders are routed automatically in real-time to outsourced manufacturers who produce on a just-in-time basis
- 55% of product is shipped directly to the customer without being handled by Cisco
- On-site testing once the product is installed at the customer's facility is done via electronic linkages to Cisco's systems
- Benefits include:
 - Production cost savings estimated at \$500 million per year
 - Inventory of 27 days-on-hand, half the closest competitor
 - Time to market for new product reduced by 66%
 - Improved cycle time with greater customization capability

Supply Chain Vision – 5 to 10 Years from Now

- **The customer will be king and future supply chains must be focused around meeting the customer's needs**
- **Customers will keep demanding better service, wider choices and lower costs**
- **Parts and finished goods will have to be shipped from and to any point in the world**
- **Information Technology will keep changing/driving what can/must be done to be competitive**
- **Products will become more commoditized (and simultaneously more customizable) – as a result, service will become the great differentiator. Dell and National Bicycle are both excellent examples of companies who have already done this.**
- **Collaboration/integration among all partners in the supply chain will separate the long-term winners from the losers**
- **The ability to be nimble in structuring collaborations will determine both a company's desirability and success as a supply chain partner/participant**



Getting There From Here

- **Diagnostic – Are you ready for the changes in the vision?**
- **Strategy – What must you change and how?**
- **Business Case – What steps will be necessary and how much will they cost?**
- **Brains not Brawn – Get started with a small group of very talented and motivated people**
- **E-commerce – Make it a top priority on every function's agenda. Use it to break-down the silos.**
- **Global Providers – Think globally ... build regionally ... operate locally and ultimately put a global infrastructure in place**

