

Measuring the Digital Economy



The Netcentric Economy Symposium
University of Maryland
March 30, 2001

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Agenda

- **Measurement Framework**
- **Measurement Strategy**
- **Measurement Activities
Present, Future & Unfunded**
- **Lessons Learned**



Digital Economy Measurement Framework

E-Business Infrastructure

Hardware
Software
Human Capital
Telecommunication
Networks

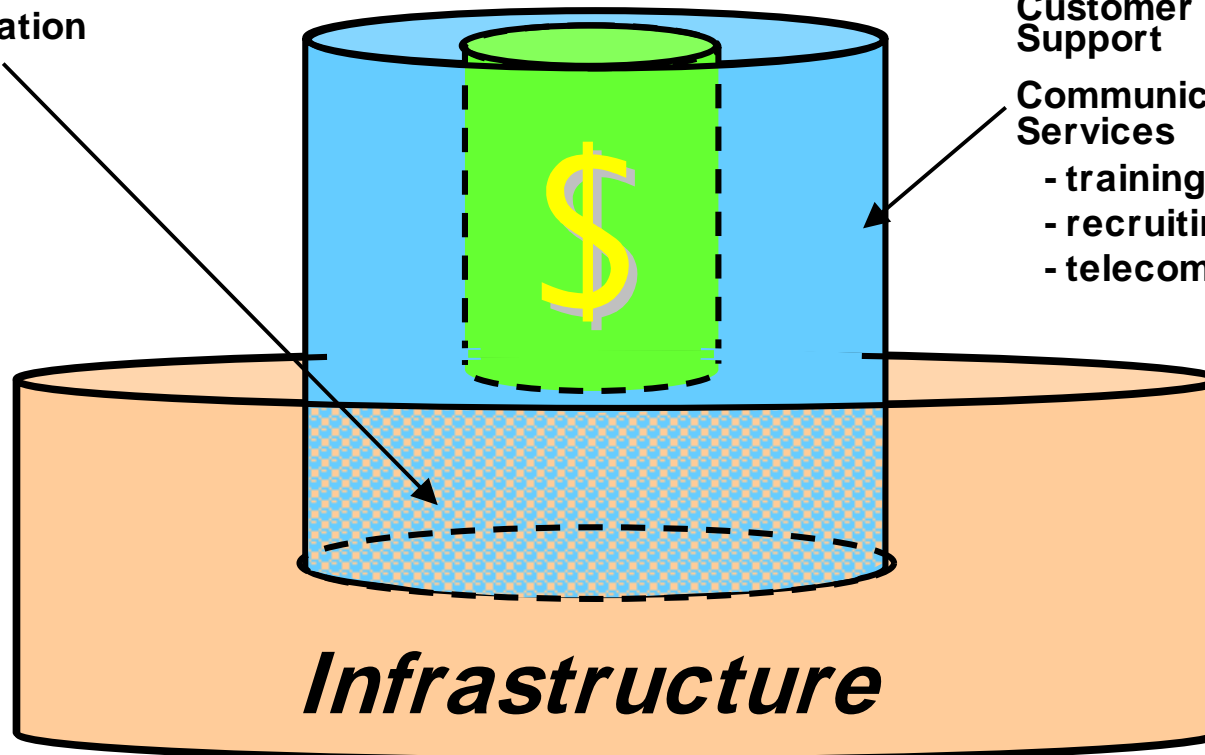
E-Commerce Transactions

Online sales



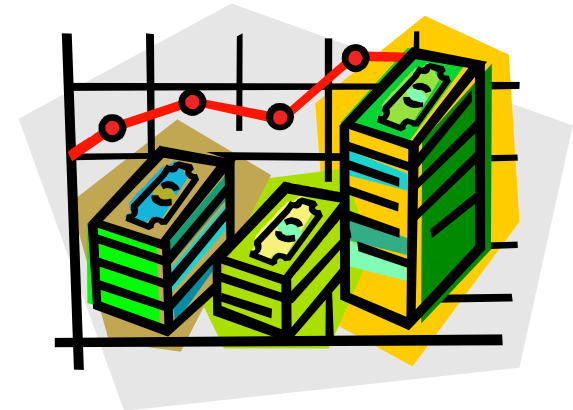
E-Business Processes

Online Purchasing
Ordering
Production Management
Customer Management & Support
Communication & Support Services
- training
- recruiting
- telecommuting



Underlying Concepts E-Business Processes

- **E-business processes of interest because**
 - **change the ways organizations operate and conduct business**
 - **lower transaction costs, improve efficiency**
 - **change relationships with suppliers and customers**
 - **change industry structure**
 - **affect economic measures**



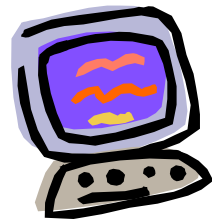
E-commerce Definition

- **The value of goods and services sold online**
 - **Payment does not have to be made online**
 - **Will not measure transactions without a price**
 - **Collect e-commerce data from the seller**



E-commerce Definition (continued)

- **Online includes electronically linked devices communicating interactively over open and closed networks.**
 - **Devices include computers, personal digital assistants, cable TV, internet-enabled cellular phones, and interactive telephone systems.**
 - **Includes Internet, intranets, extranets, and Electronic Data Interchange networks.**

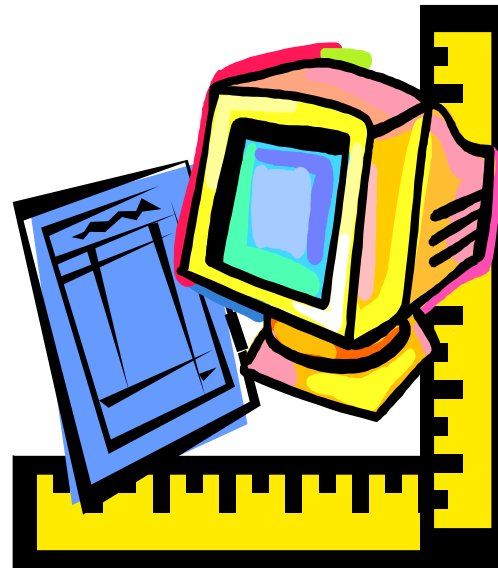


Digital Economy Measurement Strategy

- **Achieve & exploit first mover status**
- **Focus first on e-commerce (B2C & B2B)**
- **Contract for e-business process expertise**
- **Measures complement & improve existing programs**
- **Adopt e-business processes to facilitate reporting and reduce reporting burden**
- **Partner with gov't., ind., & academia on definitions, measurement plans, and priorities**

Census Bureau Initial Measurement Activities

- **Produce first official measures of retail e-commerce**
- **Provide baseline e-commerce measures for key sectors - 1999**



Estimated Quarterly U.S. Retail Sales: Total and E-Commerce

(Data in millions of dollars. Not adjusted for seasonal, holiday and trading-day differences.)

Period	Retail Sales		E-commerce as a Percent of Total Sales	Quarter-to-Quarter Percent Change	
	Total	E-commerce		Total Sales	E-Commerce
4 th Quarter 2000 ^p	856,234	8,686	1.01	5.4	35.9
3 rd Quarter 2000 ^r	812,158	6,393	0.79	-0.4	15.7
2 nd Quarter 2000 ^r	815,677	5,526	0.68	9.1	5.5
1 st Quarter 2000 ^r	747,934	5,240	0.70	-8.9	0.8
4 th Quarter 1999	821,351	5,198	0.63	8.5	(NA)

Monthly survey is now SIC-based. Data will be shown on NAICS basis, effective with the May data release on June 13. First NAICS quarterly retail economic release will be available in mid-August 2001.

NA = Not available. r = Revised. p = preliminary

E-Stats 1999 E-commerce Release Highlights



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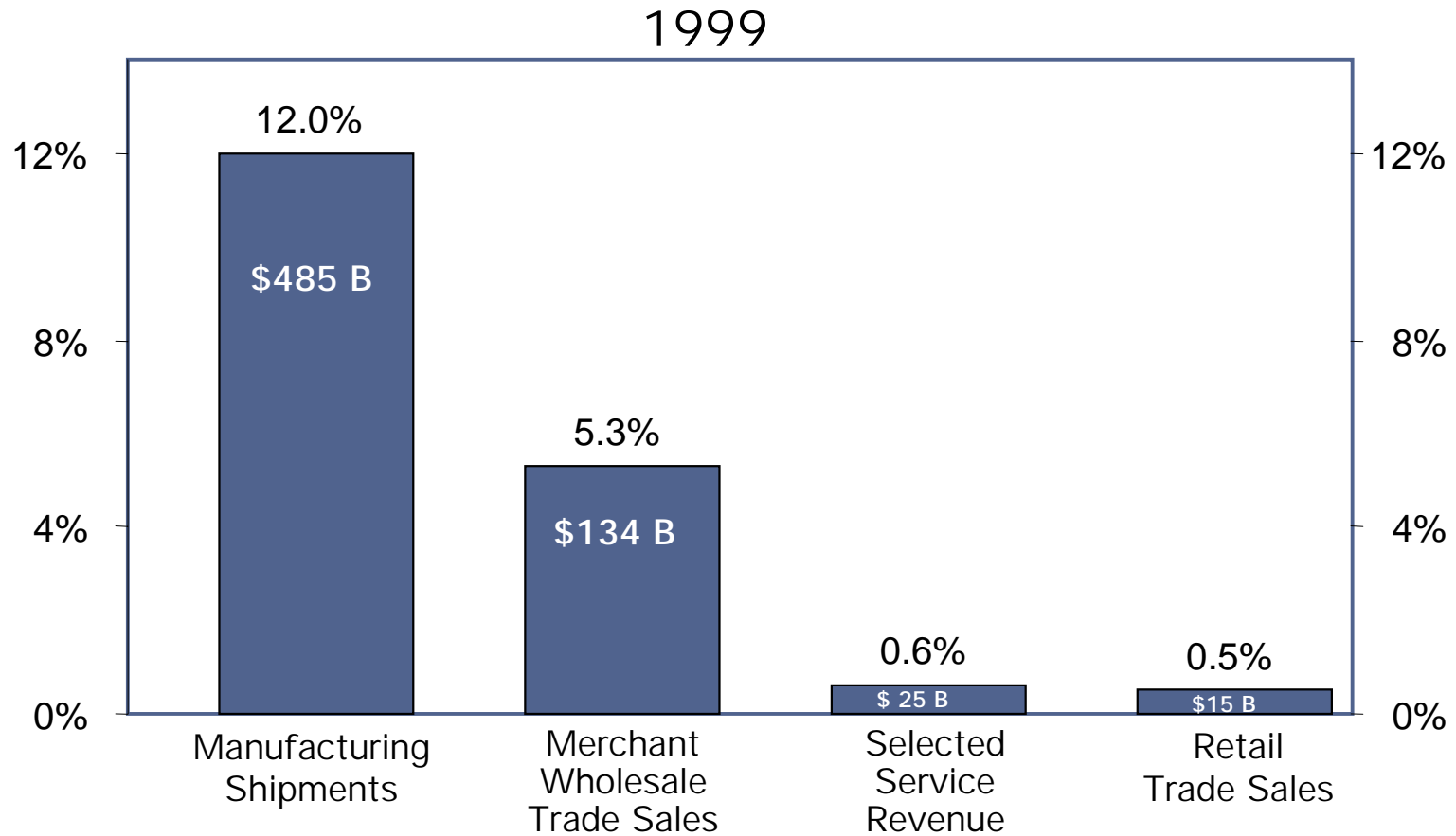
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www.census.gov/estats

Chart 1

E-commerce Percent for Economic Sectors



Source: U.S. Census Bureau, E-Stats Report
March 2001



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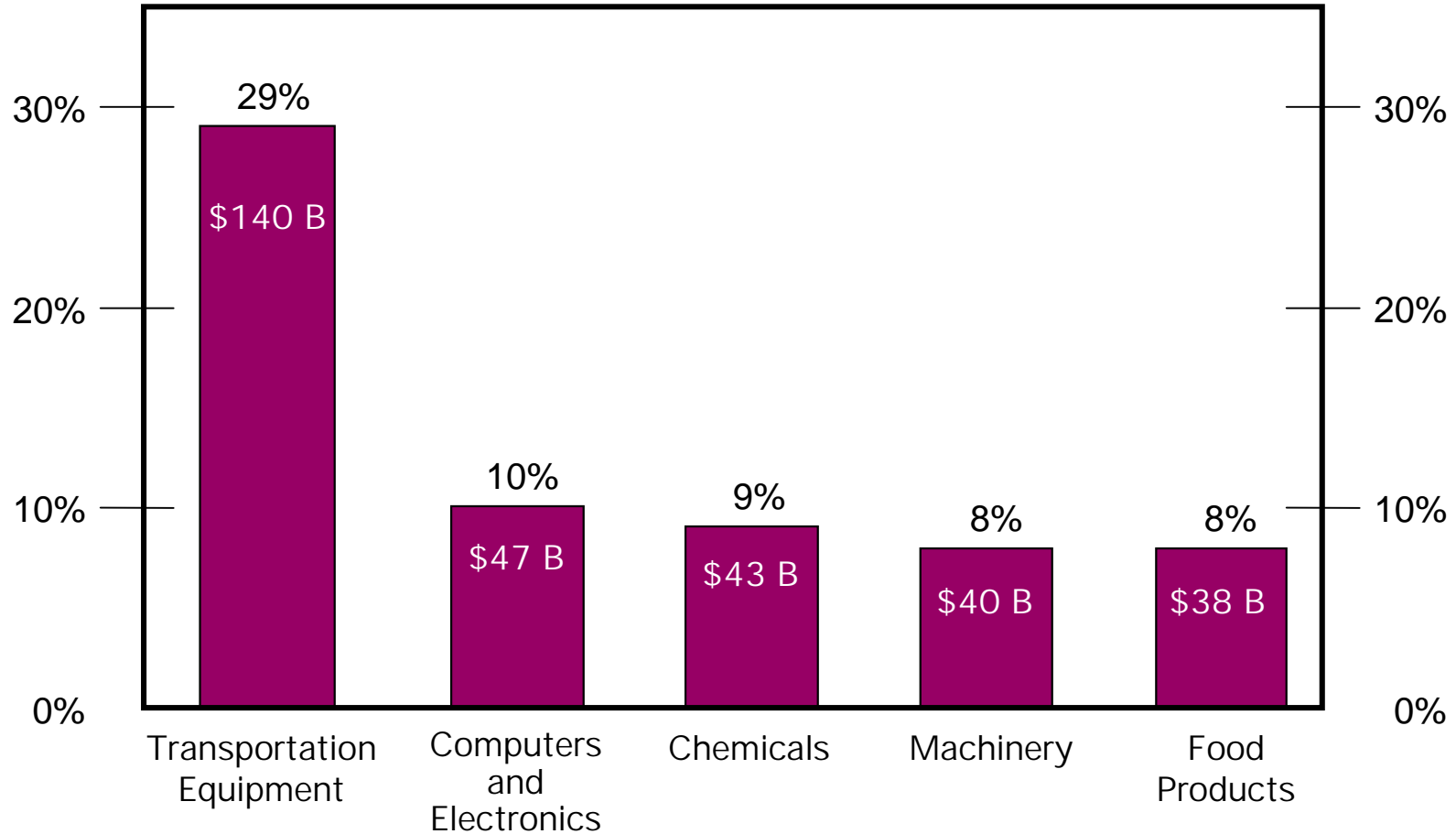
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Chart 2

Transportation Equipment

E-commerce Leader Among Manufacturing Groups
Percent Share of Total Manufacturing E-commerce
1999



Source: U.S. Census Bureau, E-Stats Report
(Table 1, Column 4) March 2001



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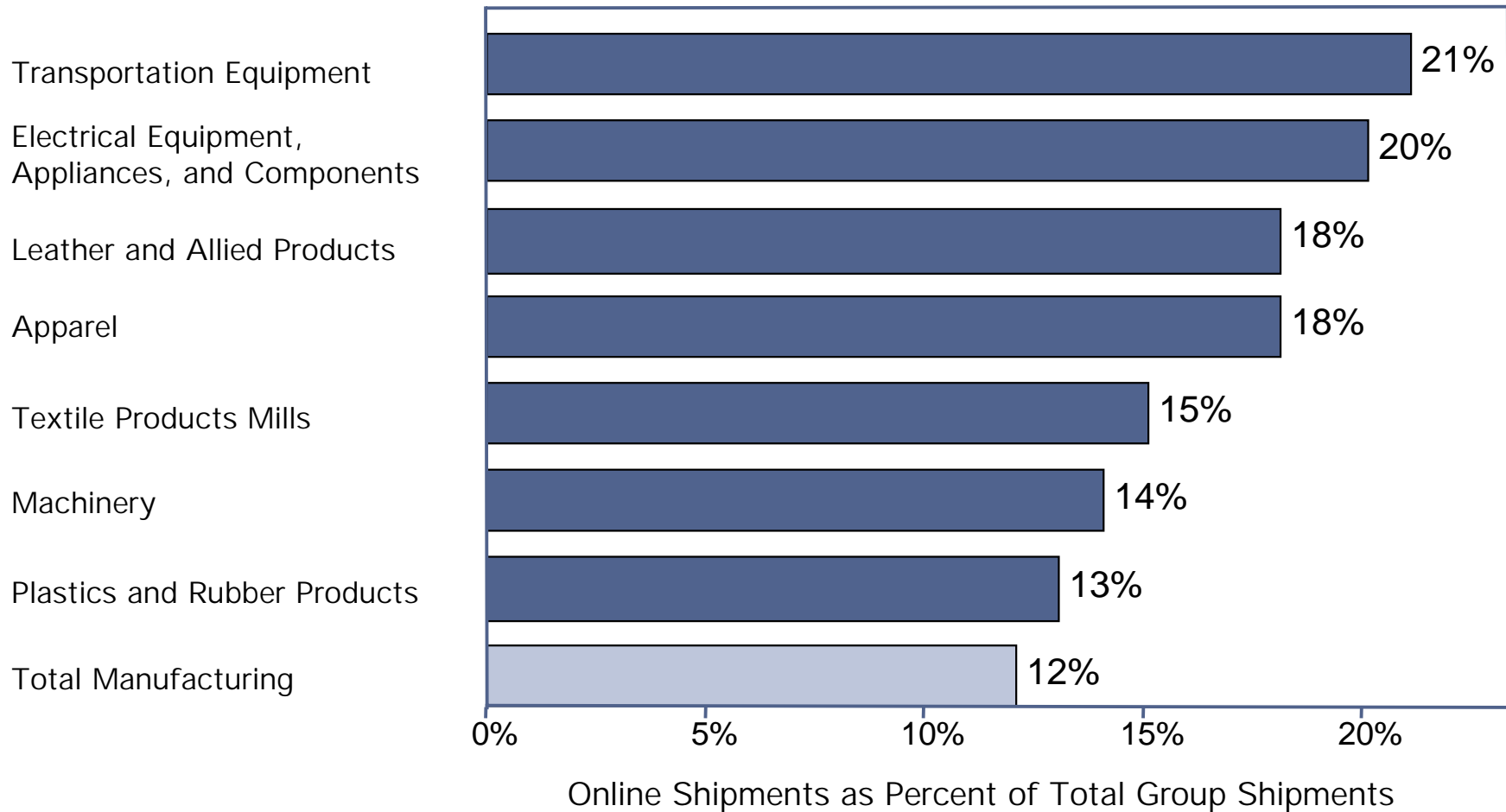
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Chart 3

Manufacturing E-commerce Group Leaders

1999



Source: U.S. Census Bureau, E-Stats Report (Table 1, Column 3) March 2001



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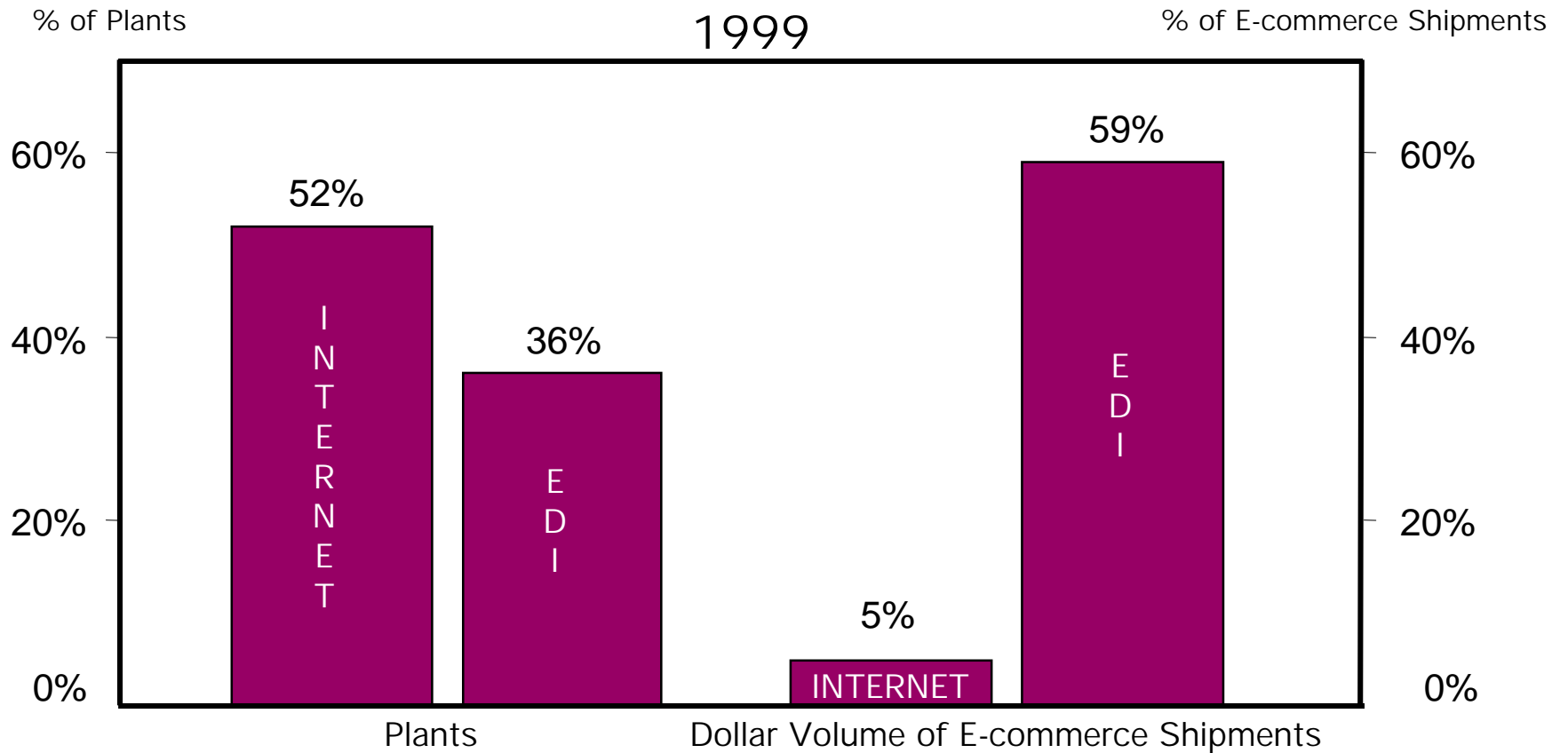
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Chart 4

Internet Ordering Widely Used, But EDI Dominated Dollar Volume

Network Most Frequently Used for Accepting Online Orders
By Manufacturing Plants Offering Online Ordering



Source: U.S. Census Bureau, E-Stats Report
March 2001



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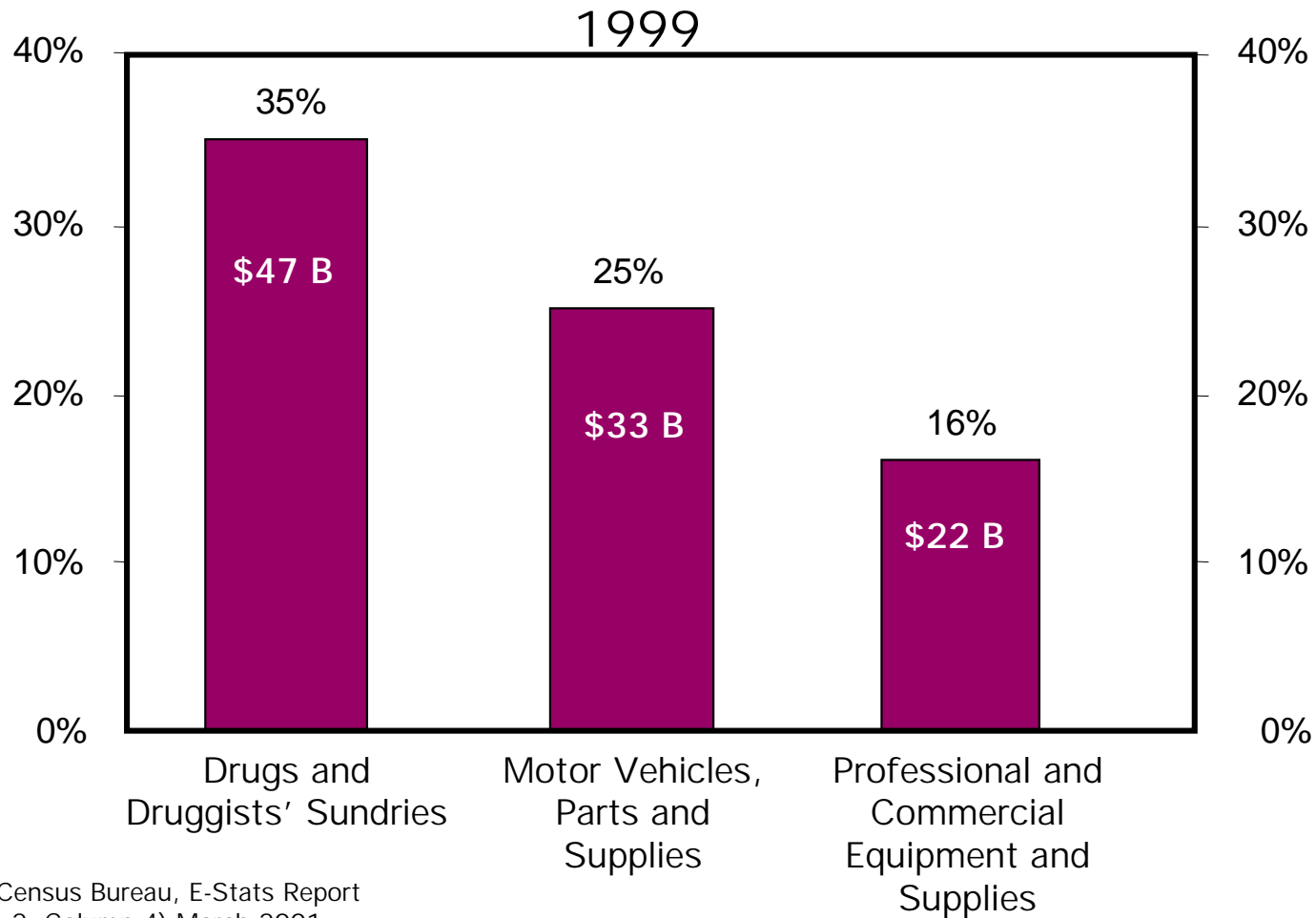
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Chart 5

Merchant Wholesale E-commerce Concentrated in Three Groups

Percent Share of Total Merchant Wholesale E-commerce



Source: U.S. Census Bureau, E-Stats Report
(Table 2, Column 4) March 2001



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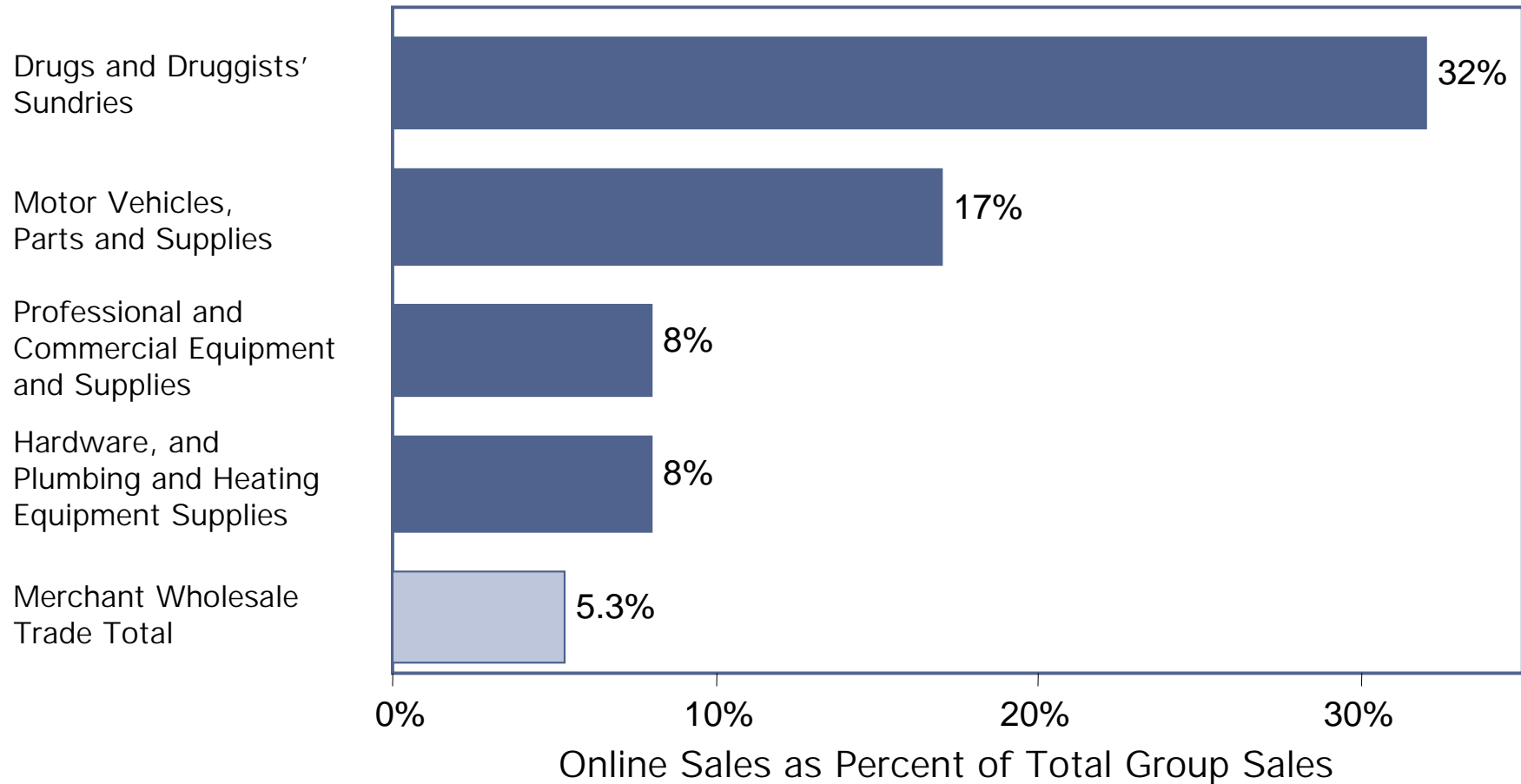
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Chart 6

Merchant Wholesale E-commerce Group Leaders

1999



Source: U.S. Census Bureau, E-Stats Report (Table 2, Column 3) March 2001



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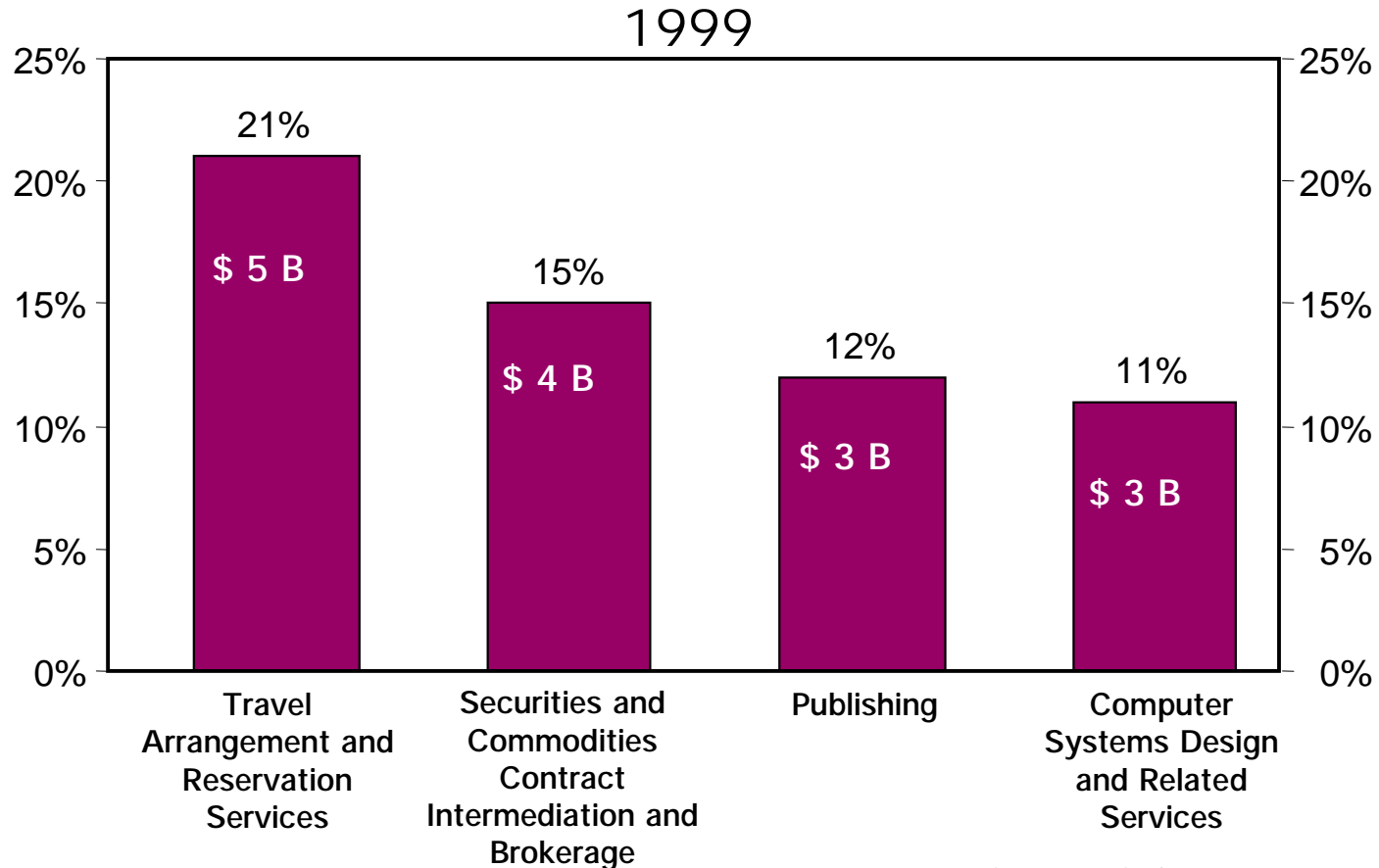
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Chart 7

Selected Services E-commerce Concentrated in Four Industry Groups

Percent of Total Selected Services E-commerce Revenue



Source: U.S. Census Bureau, E-Stats Report (Table 3, Column 4) March 2001



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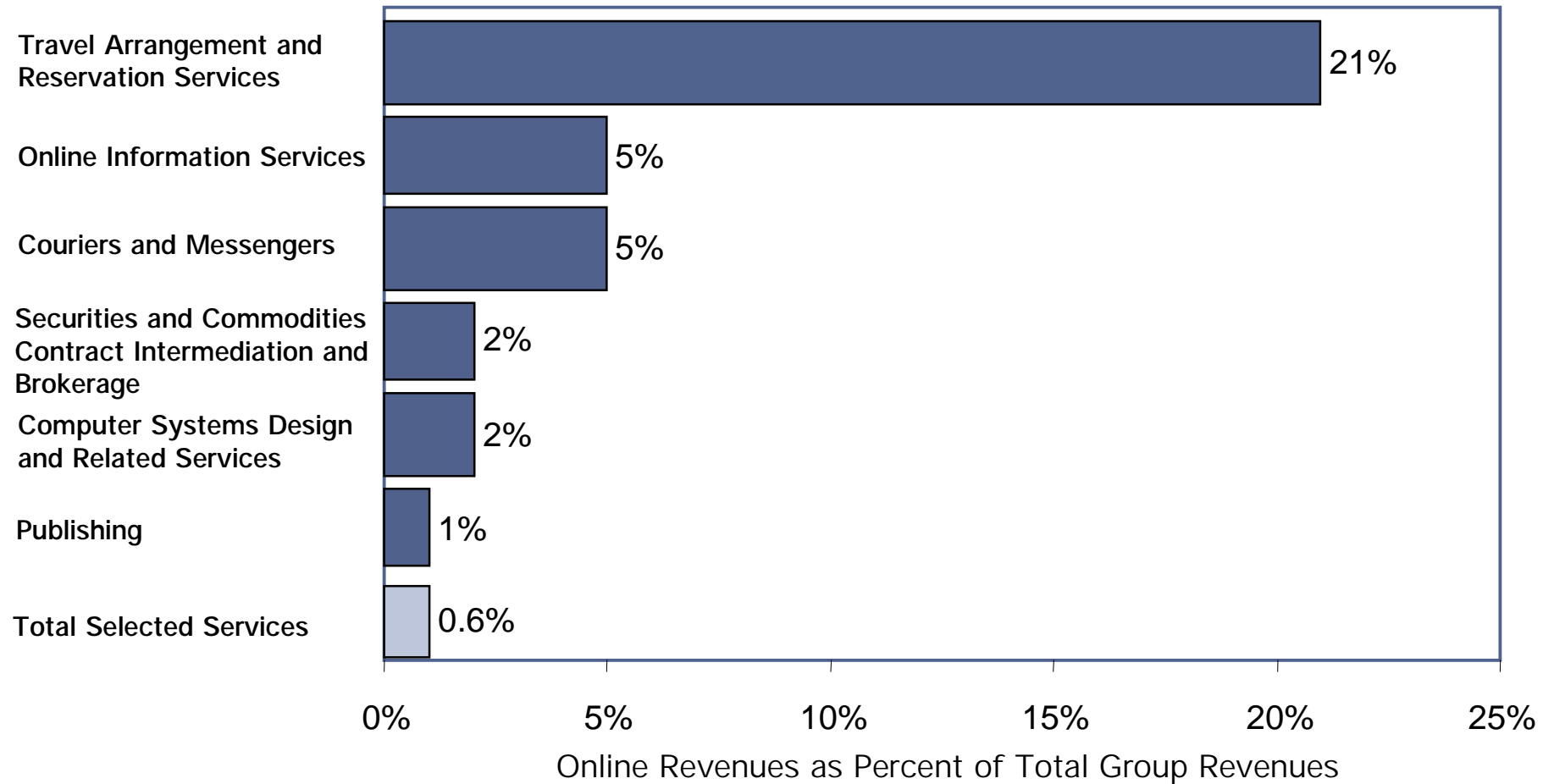
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Chart 8

Selected Services E-commerce Group Leaders

1999



Source: U.S. Census Bureau, E-Stats Report
(Table 3, Column 3) March 2001



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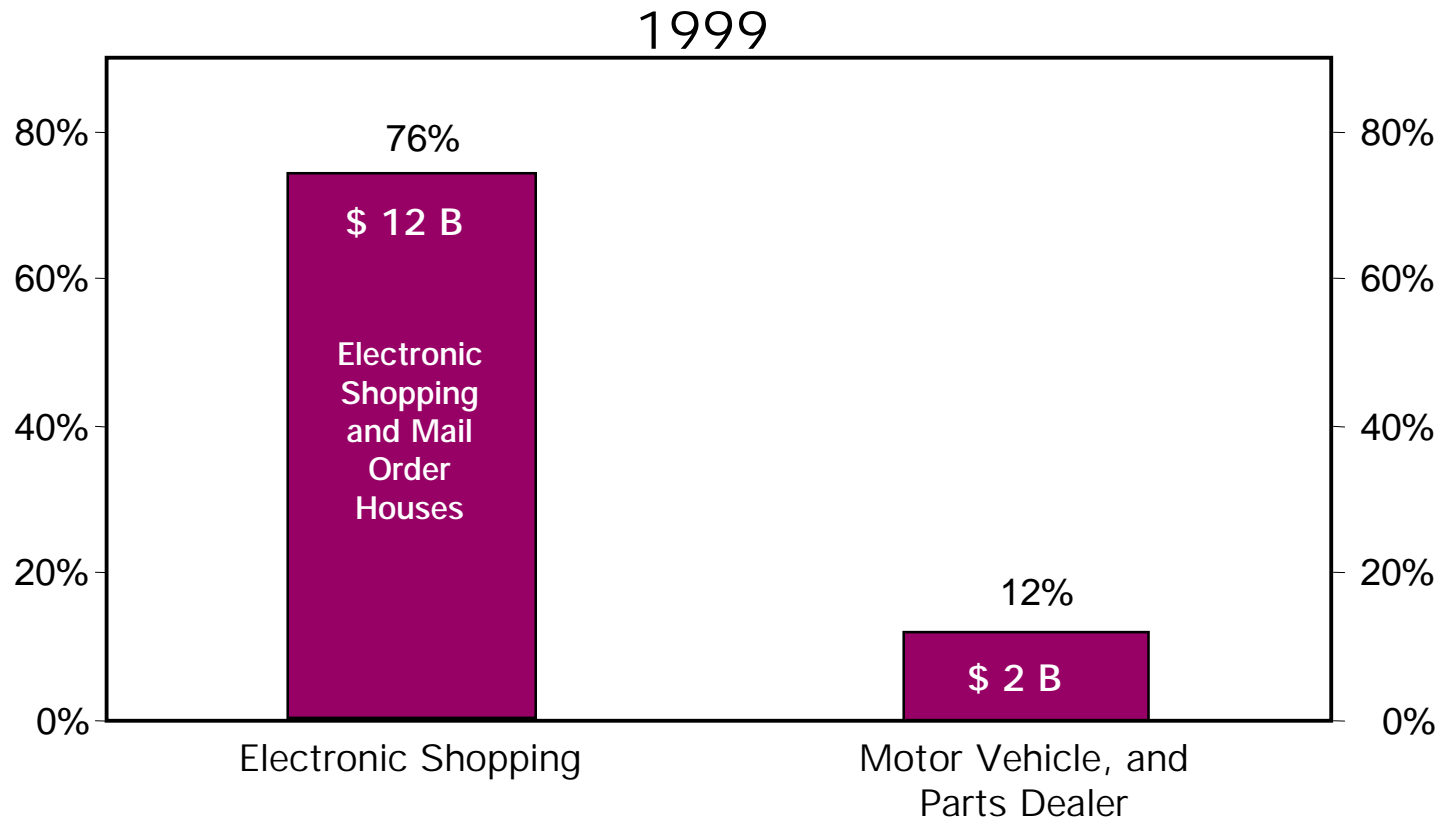
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Chart 9

Retail E-commerce Dominated by Electronic Shopping and Mail-Order Houses Group

Percent Share of Total Retail Trade E-commerce



Source: U.S. Census Bureau, E-Stats Report
(Table 4, Column 4) March 2001

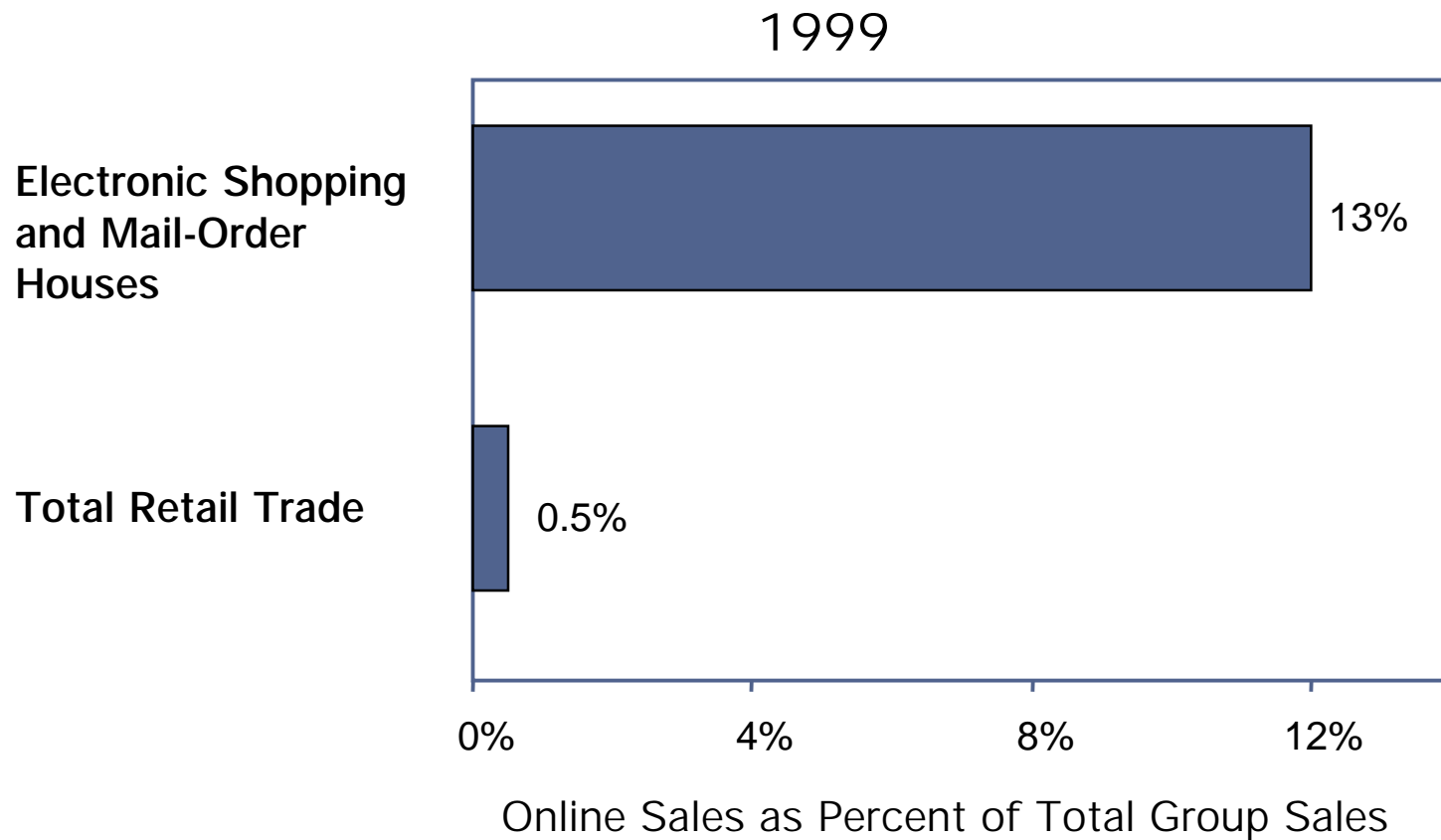


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Retail Trade E-commerce Group Leader



Source: U.S. Census Bureau, E-Stats Report
(Table 4, Column 3) March 2001



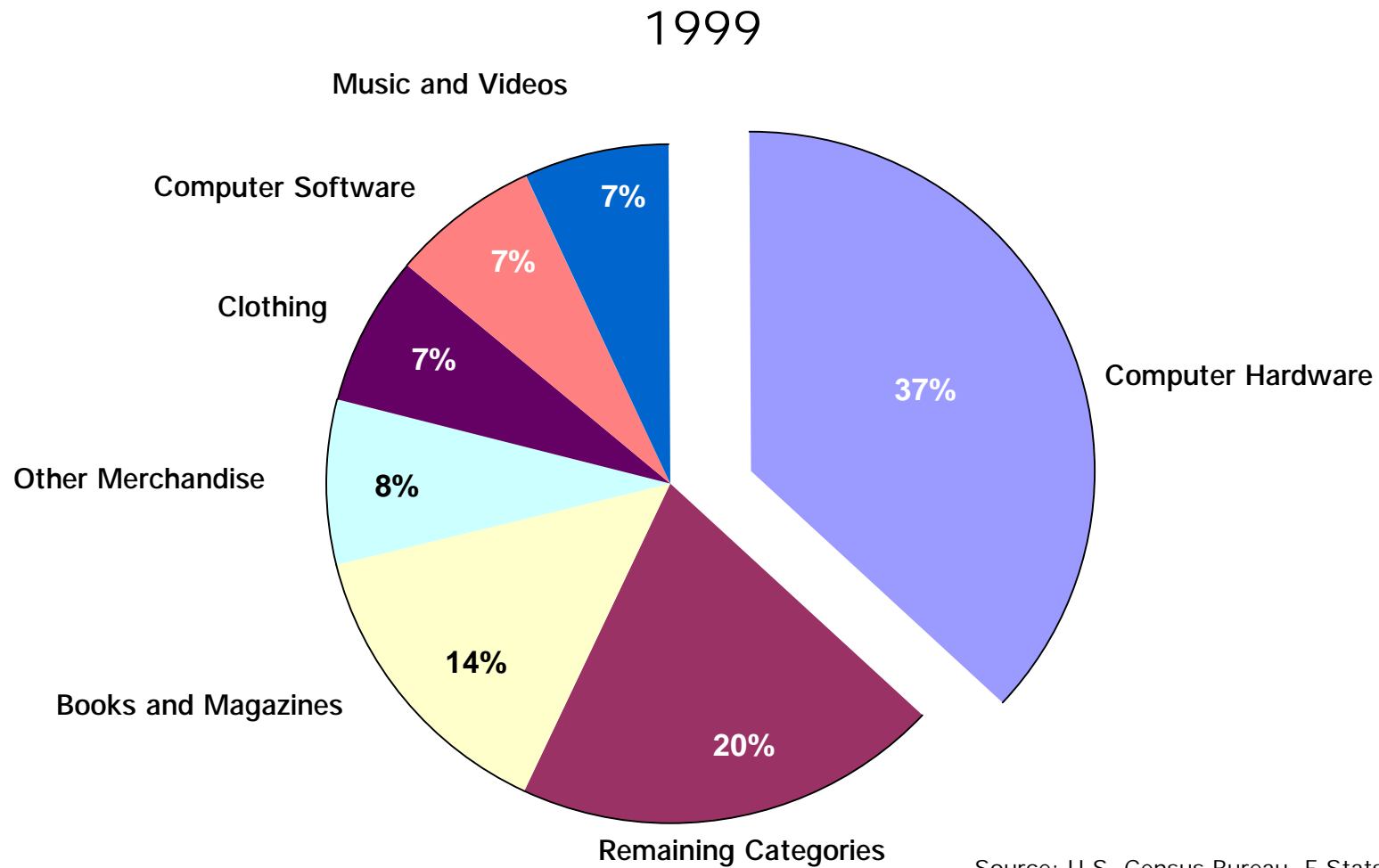
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Chart 11

Merchandise Categories Sold Online by Electronic Shopping and Mail-Order Houses Group



Source: U.S. Census Bureau, E-Stats Report (Table 5, Column 4) March 2001



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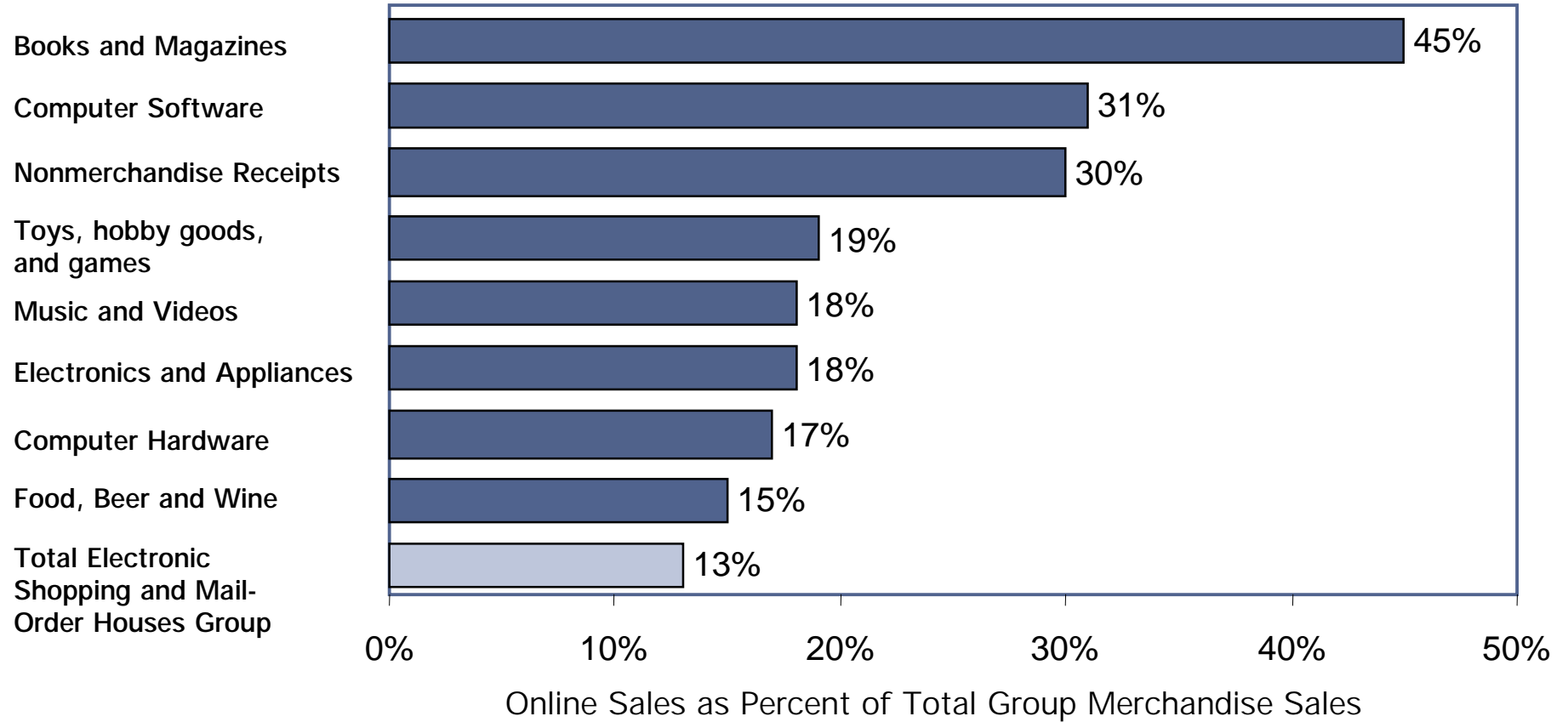
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Chart 12

Leading Merchandise Categories Sold Online by the Electronic Shopping and Mail-Order Houses Group

1999



Source: U.S. Census Bureau, E-Stats Report
(Table 5, Column 3) March 2001



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Future E-Stats Products & Activities

- **Release of manufacturers' e-business process use -- initial results May 2001**
- **Quarterly retail e-commerce on NAICS -- mid-August 2001**
- **E-commerce information will be collected on September 2001 Current Population Survey --
– results available November 2001**
- **E-Stats 2000 E-commerce Multisector Report --
– February/March 2002**
- **Internet reporting will be offered to 5 million businesses in 2002 Economic Census --
– December 2002**

E-Stats Measurement Activities Requiring Additional Resources

- **Continue manufacturing e-business process use data for post-1999**
- **Conduct supply chain survey**
- **Cover B2B e-markets and other nonmerchant wholesalers annually**
- **Implement e-business infrastructure measures**

Lessons Learned

- **Definitions and concepts are important**
 - more examples the better
 - technical jargon vs. language clear to non-technicians
 - Extranet unfamiliar



Lessons Learned (continued)

- **Measures can be problematic**
 - **e-commerce measures for services tougher**
 - **e-business processes measurement challenges**
 - **little experience**
 - **processes vary by sector**
 - **use measure straightforward**
 - **process impact/effects complicated**
 - **infrastructure measures -- just getting started**



Lessons Learned (continued)

- **Statistical unit/survey instruments place significant constraints on what you can collect**
 - **accountants not familiar with processes**
 - **records may not be available (ex. EDI sales)**
 - **infrastructure measures more likely available for company, not establishment**
 - **longstanding reporting arrangements can complicate delivery of targeted surveys**

Lessons Learned (continued)

- **NAICS 2002 does good job of identifying e-businesses, but won't fully describe what they are doing - need product data**
- **Start modestly, leverage existing resources**
 - can do something with existing instruments
 - expansion will require additional resources
- **Don't expect lots of feedback on measurement priorities or measures**
 - rapid changes occurring
 - no definitive source of expertise

Questions and Answers



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