

Internet and the  
Information Superhighway:  
Impacts on  
Information Systems

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***Internet and the Information Superhighway—  
Impacts on Information Systems***

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# Internet and the Information Superhighway

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## Impacts on Information Systems

MMONc-1

**INPUT**

Notes:



Peter Cunningham  
President and CEO  
INPUT

MMONo-2

**INPUT**

Notes:



## In This Presentation

- Current U.S. situation in government/  
private sector
- Viability of the Internet
- Commercial services on the Internet
- Impacts on information systems
- Impacts on information services market
- Key market players

MMONo-3

**INPUT**

Notes:



## U.S. Government and the Internet

- Vice President (VP) Al Gore and the National Information Infrastructure (NII)
  - Internet promoted as the national backbone
  - Primary targets: Health, Education, Social Services

MMONc-4

**INPUT**

Notes:



## U.S. Government and the Internet

- VP Al Gore and the NII
  - Business demonstrations (e.g., \$6 Million grant for CommerceNet)
  - Initially for catalog sales
  - Applications growing: Electronic Commerce

MMONc-5

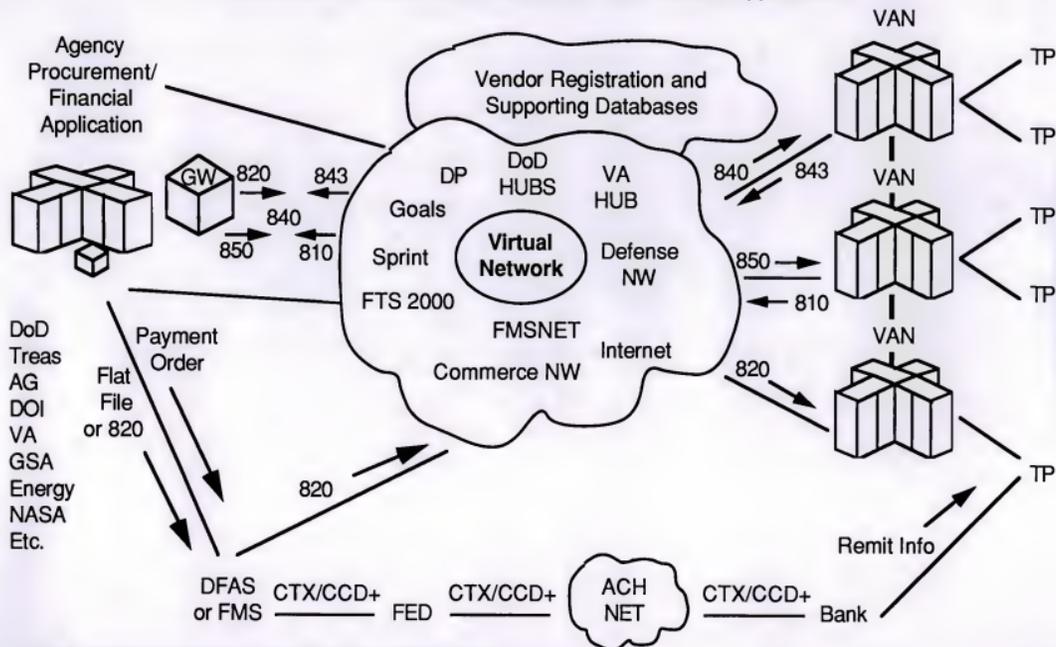
**INPUT**

Notes:



# Target Electronic Commerce Architecture

Government Procurement/Financial EDI and Related Applications



Source: Federal Electronic Commerce Acquisition Team



## U.S. Government

NPR IT accompanying report. Three major parts:

- I. Strengthen leadership in information technology
- II. Implement "Electronic Government"
- III. Establish support mechanisms for the "Electronic Government"

MMONc-7

**INPUT**

Notes:



## Part I: Strengthen Leadership in Information Technology

**Provide clear, strong leadership to  
integrate information technology into the  
business of government**

- Government information technology services working group
- “Empowered” interagency teams

MMONc-8

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Notes:



## Part II: Implement “Electronic Government”

- Provide intergovernmental tax filing, reporting and payments processing
- Establish an international trade data system
- Create a national environmental data index
- Plan, demonstrate and provide government-wide electronic mail

MMONo-9

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Notes:



## Part II: Implement "Electronic Government"

- Virtual agency themes
- Seven illustrative cross-agency programs
- National integrated electronic benefits transfer
- Develop integrated electronic access to government information and services
- Establish a national law enforcement/public safety network

MMONo-10

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Notes:



## Part III: Establish Support Mechanisms for the “Electronic Government”

### **Establish an information infrastructure**

- GITS (NII, GII and gsii)
- Share “IT” resources

MMONc-11

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Notes:



## Is the Internet a Viable National Network?

- Original Plan
  - Government started "Information Superhighway" (Arpanet, et al)
  - Target was public: consumers, health, education, social services
- Promoted to business where alternatives don't exist (low end)
- It is meeting these objectives

MMONc-12

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Notes:



## Internet Value-Added Services

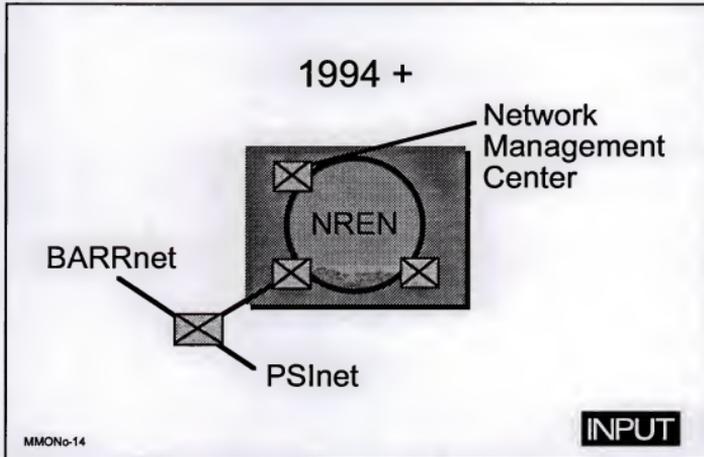
- Usenet News
- Gopher
- WAIS
- WorldWideWeb
- Mosaic

MMONc-13

**INPUT**

Notes:





Notes:



1994 +

**1993 HPCA replaced NSFNet funding**

- Gbit backbone network to interconnect super computer centers
- Network access point (NAP) will provide AUP gateway
- Schools, colleges, non-profits can apply for NREN grants

MMONc-15

**INPUT**

Notes:



## Value-Added Application Pilots

- MCC's enterprise integration network (EIN)
- CommerceNet
- MecklerWeb

MMON-16

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Notes:



## Is the Internet a Viable National Network?

- Pros
  - Low cost access
  - Collective management
  - Accessible by all industry types

MMON-17

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Notes:



## Is the Internet a Viable National Network?

- Cons
  - Security/unreliable delivery remain issues
  - Searches are difficult in a sea of information
  - Relies on vendor agreement to work
  - Limits on capacity (time, bandwidth)

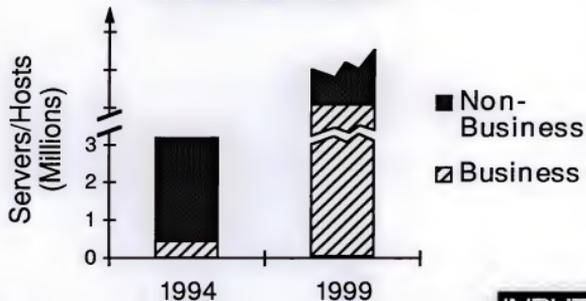
MMON-18

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Notes:



## Internet Connections - Servers/Hosts



MMONc-19

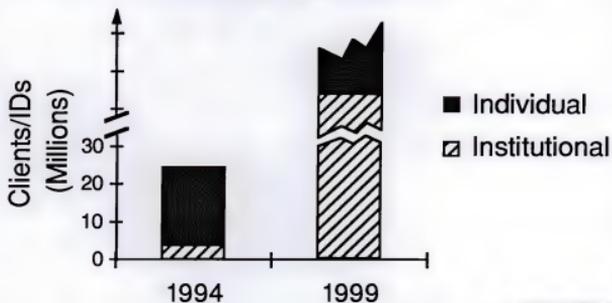
**INPUT**

### Notes:

1994: 20K business servers/hosts  
3 M non-business servers/hosts



## Internet Clients/Internet IDs



MMONc-20

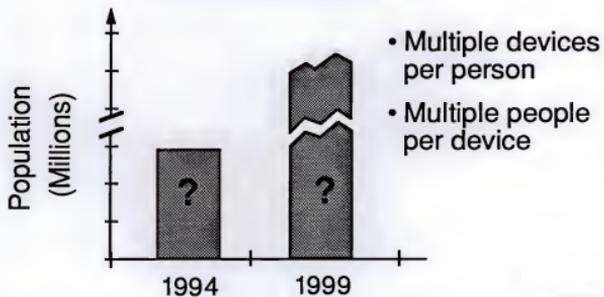
**INPUT**

### Notes:

1994: 1 million institutional  
23 million individual



## Internet Population



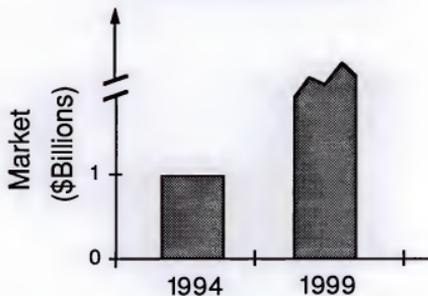
MMONc-21

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Notes:



## Internet Market



MMONc-22

**INPUT**

### Notes:

1994 user expenditures approximately \$1 billion.



## Internet Market

- 1994 - \$1 billion
- 1999 -

User Expenditure  
per month

1999  
Market Size

\$5

\$12 Billion

\$50

\$120 Billion

\$500

\$1,200 Billion

MMONc-23

**INPUT**

Notes:



## What Will You Get?

- Interactive TV
- Entertainment
- Videoconferencing
- Education
- Communications/BBS
- .....
- Banking
- Security
- Insurance
- Retailing
- Government

MMONo-24

**INPUT**

Notes:



## Electronic Commerce and the Internet

- U.S. Business-to-Business Transactions
  - \$3.3 Trillion in 1994
  - \$4.3 Trillion in 1999
- Electronic Commerce Component
  - \$60 Billion (2%) in 1994
  - \$250 Billion (6%) in 1999

MMONo-25

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Notes:



## Electronic Commerce and the Internet

- Internet-related electronic commerce
  - 1994: \$500 million (<1%)
  - 1999: \$50 billion (20%)

MMONo-26

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Notes:



## Commercial Services Via the Internet

- Access (phone dial-up to satellite, high-speed fiber)
- Basic: File transfer, e-mail, fax, remote computer access

MMONc-27

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Notes:



## Commercial Services Via the Internet

- Other:
  - Information browsing, searching, delivery, archiving
  - Real-time interactions

MMON-28

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Notes:



## Commercial Services Via the Internet

- Other:
  - Multicasting of audio and video programs
  - Directory look-up

MMONc-29

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Notes:



## Internet/Superhighway Impact on Information Systems

- EDI:
  - Dramatic increase in use
  - Elimination of niche vendors
  - EDI standards developed by consensus

MMONc-30

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Notes:



## Internet/Superhighway Impact on Information Systems

- CALS
  - Internet "environment" is a major enabler
  - High perceived potential
    - New uses for CALS (e.g., health area)
    - Standards work continues; improved access
    - CSC major U.S. commercial contract

MMONo-31

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Notes:



## Internet/Superhighway Impact on Information Systems

- Mosaic
  - Used for surveys, databases, subscriptions
  - Vendors: Spry, Netcom, Netscape Communications
  - Will be one of many "browsers" for Internet
  - Agent market will explode

MMONc-32

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Notes:



## Internet/Superhighway Impact on Information Systems

- WorldWideWeb
  - Will grow rapidly
  - Linked multimedia documents; like highway billboards
  - Problem: disorganized searching (hence the name "WEB")
  - Users: technology vendors, electronic mail users, colleges
  - Vendors: Infoseek, TRW

MMONo-33

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Notes:



## Internet/Superhighway Impact on the Information Systems Industry

- Dramatic behavioral impact on corporate IS
- Vendors responding to customer requests for access/integration with Internet
- Standards activity increases
- Backbone upgrades are ongoing
- Security and encryption improves steadily
- Market will leap when standards/security issues resolved

MMONo-34

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Notes:



## Impact on Network Services Companies

- Negatives
  - Reduced prices
  - Content owners will offer their own Internet connections
  - Increased competition
  - Value of proprietary systems will decline

MMONo-35

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Notes:



## Impact on Network Services Companies

- Positives
  - Access to a broader client base
  - Value in cross-content analysis
  - Opportunity for new products/services

MMONc-36

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Notes:



## Conclusion

- Traditional services will shrink
- New vendors will take market share, e.g.,
  - Marvel
  - TCI
  - Disney
  - MCI
- Just like mainframe vs. client/server vendors

MMONc-37

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Notes:



## Internet/Superhighway Impact on Software Providers

- Each new Internet user is a target
- Bulk of commercial users will stay on commercial networks (VANs)
- Current management and history make evolution into a corporate network option unlikely:
  - Businesses prefer virtual private network
  - Federal government won't use for EC
  - Managed "by committee"
  - Low security/reliability

MMONc-38

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Notes:



## Internet/Superhighway Impact on Professional Services (PS)

- Internet explodes possible integration and reengineering opportunities
- Additional tool for professional services use to solve client problems
- For many applications
  - Greater connectivity
  - New class of leverageable solutions
- May encourage "do it yourself" client attitudes at midrange level, with risk to PS revenues

MMONc-39

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Notes:



## Key Market Players

- CommerceNet
- AOL
- Global Internet Access Corp.
- BBN
- Others: CIX, NSFnet; PSINet; ESNET

MMONc-40

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For Vendors—analyze:

- Market strategies and tactics
- Product/service opportunities
- Customer satisfaction levels
- Competitive positioning
- Acquisition targets

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- Specific vendor capabilities
- Outsourcing options
- Systems plans
- Peer position

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