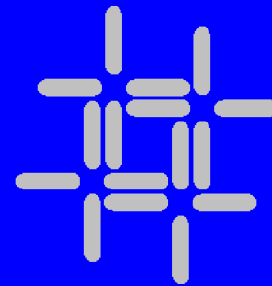


State of the Internet

Internet Society

Reston VA USA

Dec 1994



**Tony Rutkowski,
Executive Director**

<amr@isoc.org>

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slide 2 on the Internet Society**

What is the Internet Society ?

The global international organization for open systems internetworking and the *Internet*

A common mechanism for:

standards making

operational administration and coordination

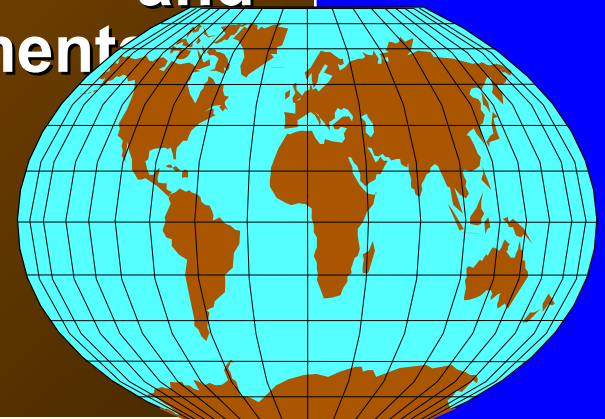
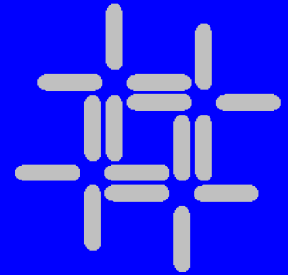
research coordination and education

global cooperation among national, regional, and other international bodies

An international means for sharing information and encouraging development of internet-related infrastructure and use around the world

Members consists of individuals and organizations - commercial, government, and non-profit

**Contact <isoc@isoc.org>
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The Electronic Networking Universe

Applications

Mass Media

**Voice
Telephony**

**Inter-
networking**

**Manage-
ment**

Digital Transport Pipes

Internetworking : terms of art

An Internet: A network of networks of computer hosts able to seamlessly communicate - usually through the Internet Protocol (IP) and services

Enterprise Internet: An Internet within an organization

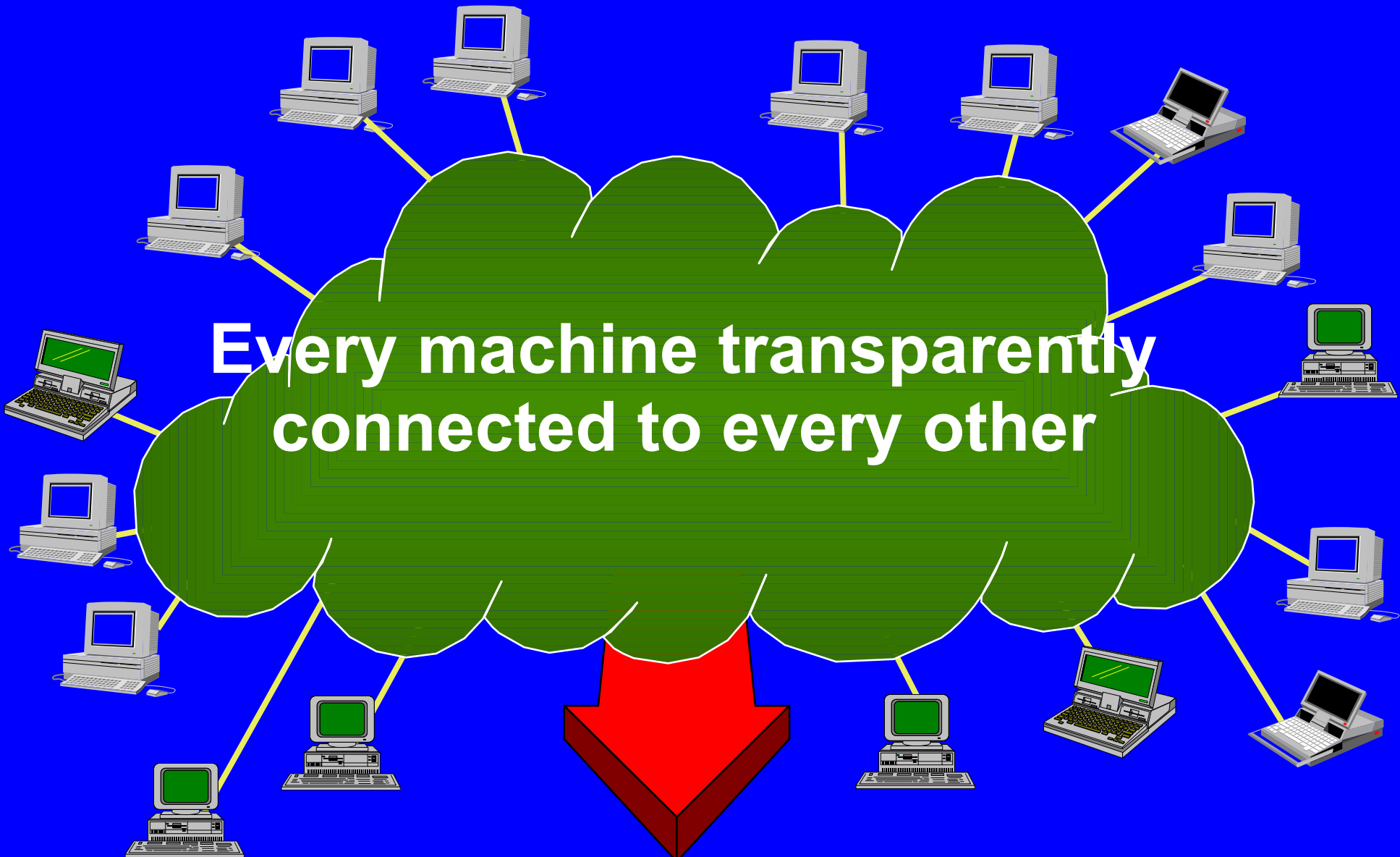
Public Data Internet: Internet services made available to the public

The Internet:
More than 45,000 Internets connected together

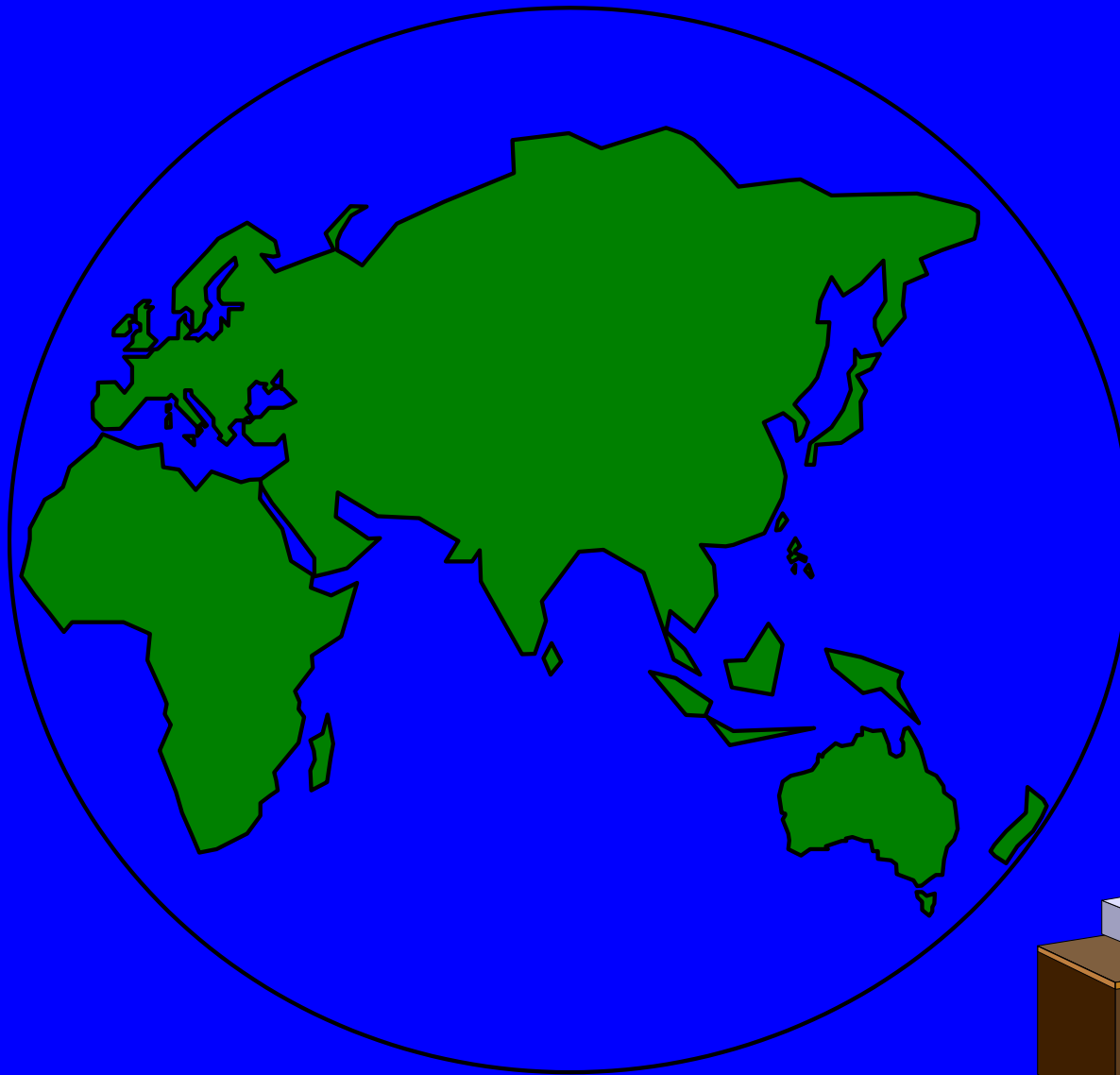
The Enterprise Internet

Every machine transparently
connected to every other

Outside World



Internet: Directly Reaching 3,864,000 Computers



The Internet : what is it?

General definition: A vast global open information metanetwork (a network of networks) of computer hosts

The means by which all the world's computers are able to communicate with each other

Narrow definition (IP Internet): a set of at least 45,000 of the 60,000+ registered internetworks which are capable of routing Internet Protocol packets among themselves

The number of networks passing traffic via the major backbones

Broad definition: the IP Internet plus all connected networks capable of routing traffic to a destination device or process

Includes application level gateways (e.g., e-mail), store and forward networks, and networks using non-IP protocols

Why a Revolution?

Who Uses The Internet ?

Institutions of all kinds - commercial, academic, and government

to allow their staff to collaborate with peers

to rapidly coordinate complex, dispersed worldwide activities

to gather and share information

by interconnecting their enterprise networks via Internet backbone providers

Professional communities of all kinds - especially research and development organizations

Business enterprises which specialize in providing or collecting information

General public via local access providers and gateways to commercial public e-mail carriers and other kinds of networks

What Is Driving Internet Growth ?

- TCP/IP protocols & applications with every workstation - now every computer including PCs
- Coincided with enterprise internetworking revolution
- Standards and applications developed by the best standards process in the business
 - Fast
 - User driven and innovative
 - Standards that are proven
 - Rapidly disseminated
- User costs are very low
 - "Sender keep all" accounting
 - Inherently low-cost technology
 - Institutional cost sharing
- Massive global connectivity & professional use
- Ability to directly reach any computer and process
- Very high performance

Internet Services

How does it fit together: an information food chain

What People and Organizations Do

Network Management (SNMP)

Client-Server Information "Tools"
(FTP, Telnet, SMTP, X400,.....)

Internet "Glue"
(TCP,UDP/IP)

Telecom "Pipes"
(leased line, dialup, X.25, ISDN, Ethernet, FDDI, ATM, HIPPI)

Services: Global Information Space

Allow Personal news feeds

Allow Personal browsing

Allow Finding People

Allow Group Interaction

Allow Finding Information

Allow Auto Gathering

Allow Device Monitor/Control

Basic Services

- Transferring files
- Universal Email
- Remote Computer Use
- Fax

Mailing Lists and Bulletin Board Services

- Automated lists
- News Distribution

Interactive Information Delivery Services

- Gopher
- World Wide Web (Mosaic or Cello client)
- WAIS

Directory Services

- WHOIS
- X.500
- Netfind
- Whois +++
- CSO
- Prospero

Interactive Multiuser Services

- Collage, Talk, IRC, MUD, MOO, MUSH, MUCK

Indexing Services

- Archie
- Veronica
- Web Worm
- online library catalog

Active Agents

- Knowbots

Network Management

- SNMP
- SNMP2

Emerging: *Mercantilism, Multimedia & Ubiquity*

Commercial Electronic Data Services

Allow exchange of commercial business records

- Bellcore Mercantilism Project
- Educational EDI initiative
- MCC EInet initiative

Applied Encryption Technology Services

Allow property transactions

- Signature verification
- "Digicash"
- Copyright protection
- Privacy enhancement

Multimedia and Video Services

Allow multimedia, collaboration, entertainment and broadcasting

- MIME
- CU-See Me
- Mbone, Multicasting

Ubiquitous Connectivity & User Friendliness

Allow universal access

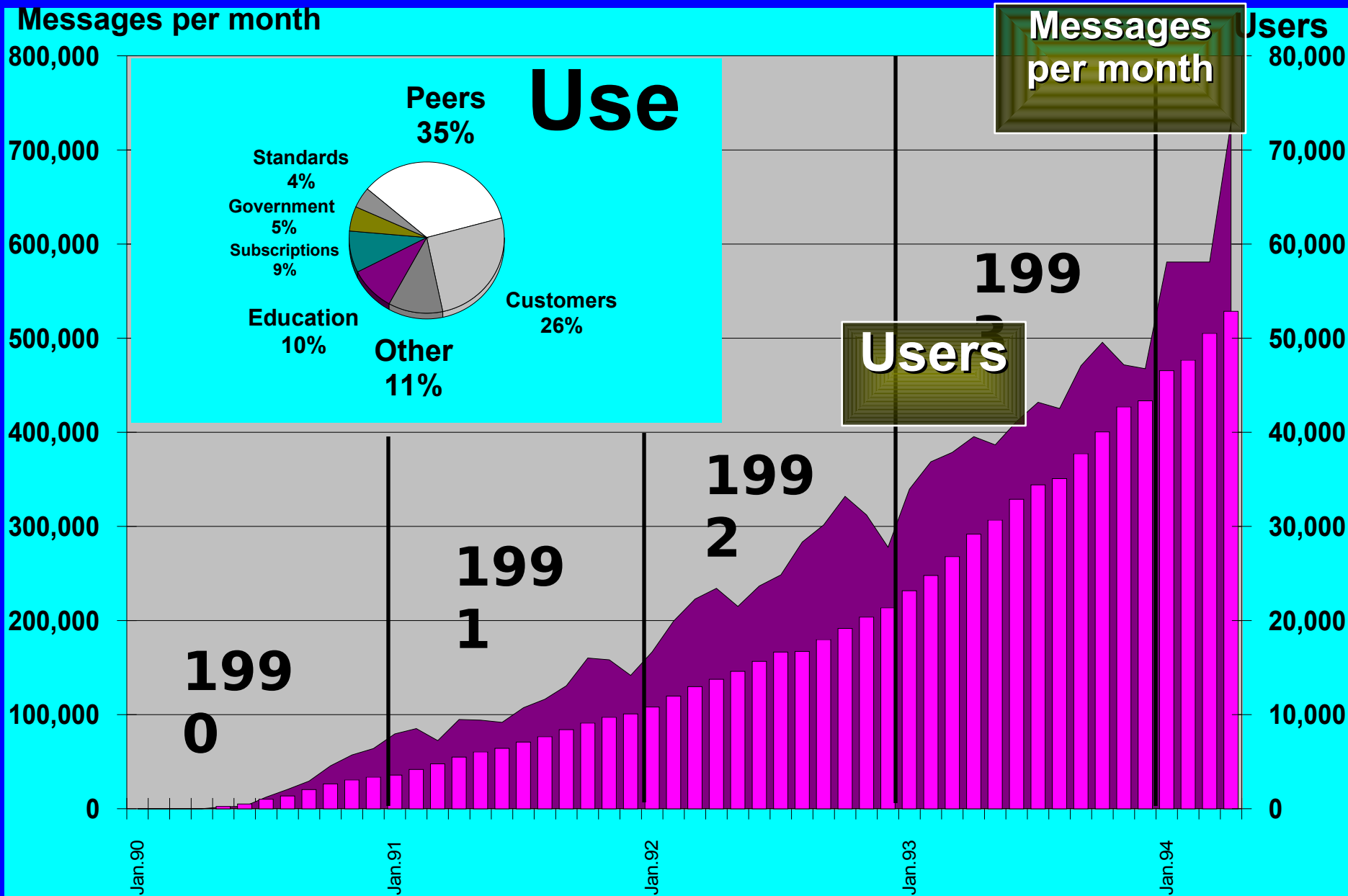
- Mobile ● Dialup ● Internet in a box
- CATV ● VSAT ● Object orientation

Current Internet Dynamics

Internet

- 43,271 (NSFNet 2 Dec 94) plus 10 % ? connected IP internets seen at other backbones
- 90 connected IP countries (1 Dec 94)
- '93 ave network growth 160 % (183 % non-USA)
- 3.864 million computer hosts; 56,000 domains (Oct 94)
- E-mail and other gateways to 159 countries (Nov 94)

IBM Corporate-Internet Gateway Profile



2001: Users = Human Population ?

