

# **The Internet**

**a new era of commercial  
services and  
globalization**

**Geneva Internet  
Day  
Genève  
29-30 Mar 1995**



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**You cannot  
not be  
connected  
and  
effectively  
using it**

# Vision of the Internet

**In the year 2000, Internet will :**

**Have more than 100 million connected hosts**

**Have more than one million connected networks**

**Have traffic which exceeds voice telephony**

**Be ubiquitously available worldwide**

**Be ubiquitously available by all transport media**

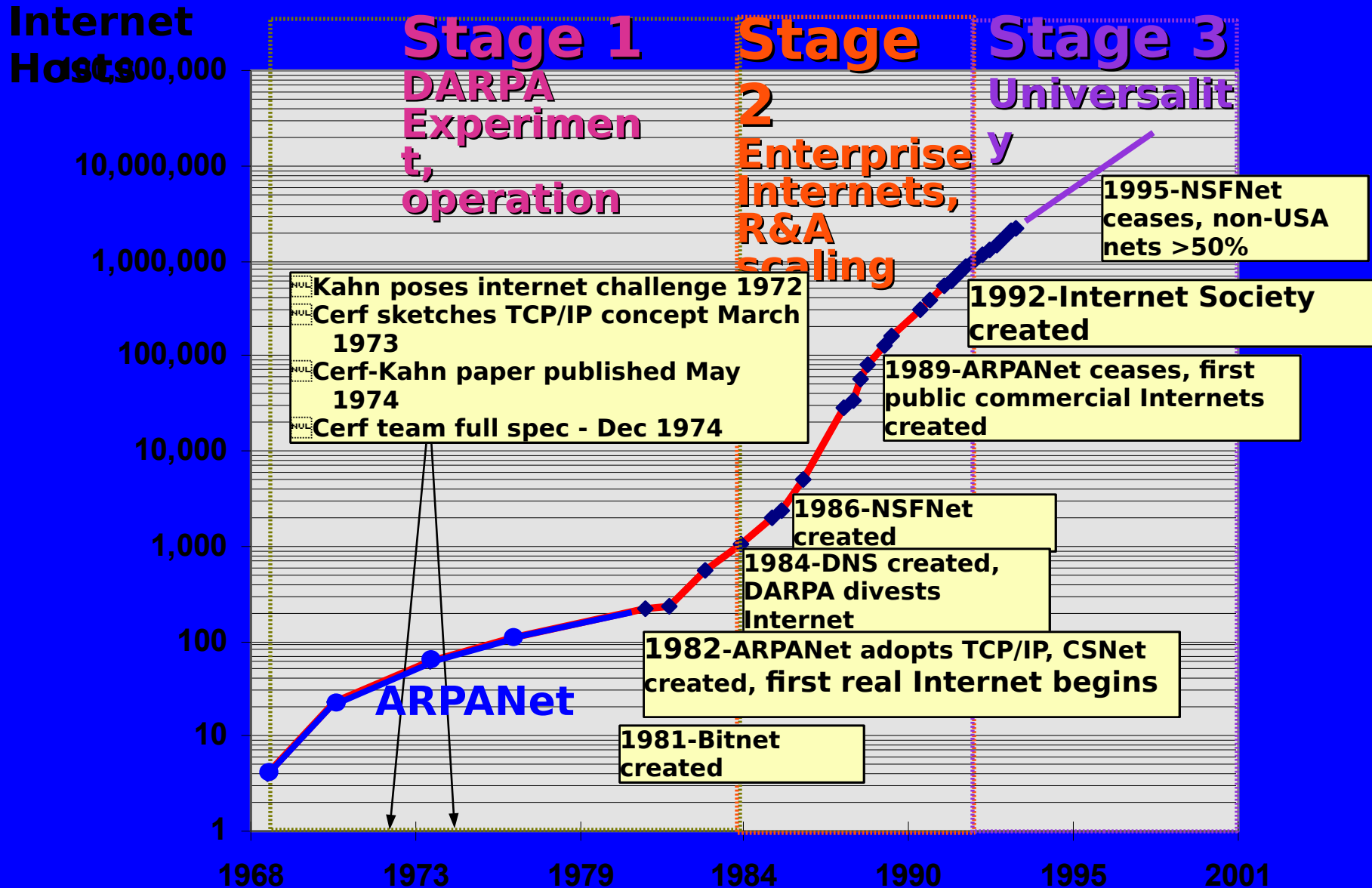
**Support thousands of different applications**

**Support a trillion dollars a year of transactions**

**Be a seamless part of every communicative and collaborative aspect of our lives**

**Reshape institutional, business, financial and political boundaries**

# Internet Evolution



# The Internet Commercial Marketplace

## Two basic markets

- Public Internet services
- Enterprise internet services

## Multiple market layers

- access and transport
- Internet service
- applications and operating systems
- customer services

## Low entry barriers

## Rapidly innovating and expanding

## Great differentiation options

## Constant churn in market players

# Layered Internet Marketplace

<b>Value added</b>	Databases, reference material, financial transactions, publication, filtering, directory, business services, software, entertainment
<b>Applications</b>	EMail boxes, WWW client, WWW server, File Transfer, Remote Login, Gopher, Security, NewsNet, NFS, videoconference,.....
<b>System</b>	Computer and network operating systems
<b>Internet network</b>	Internet access, network addresses, domain name, mbone access, network security and management
<b>Access &amp; Transport</b>	Dialup access (local, freephone), ISDN, leased line, cable television, wireless, LEO satellite, SMDS, ATM, SDH, dark fibre

# Major Marketplace Players

**Telcom  
Carriers**

**Private  
Network  
Operators**

**Internet  
Systems  
Vendors**

**Software  
Vendors**

**Mass Media  
Providers**

**Publisher  
s**

**On-line  
Providers**

**Entertainment  
Industry**

# Commercial Enablers

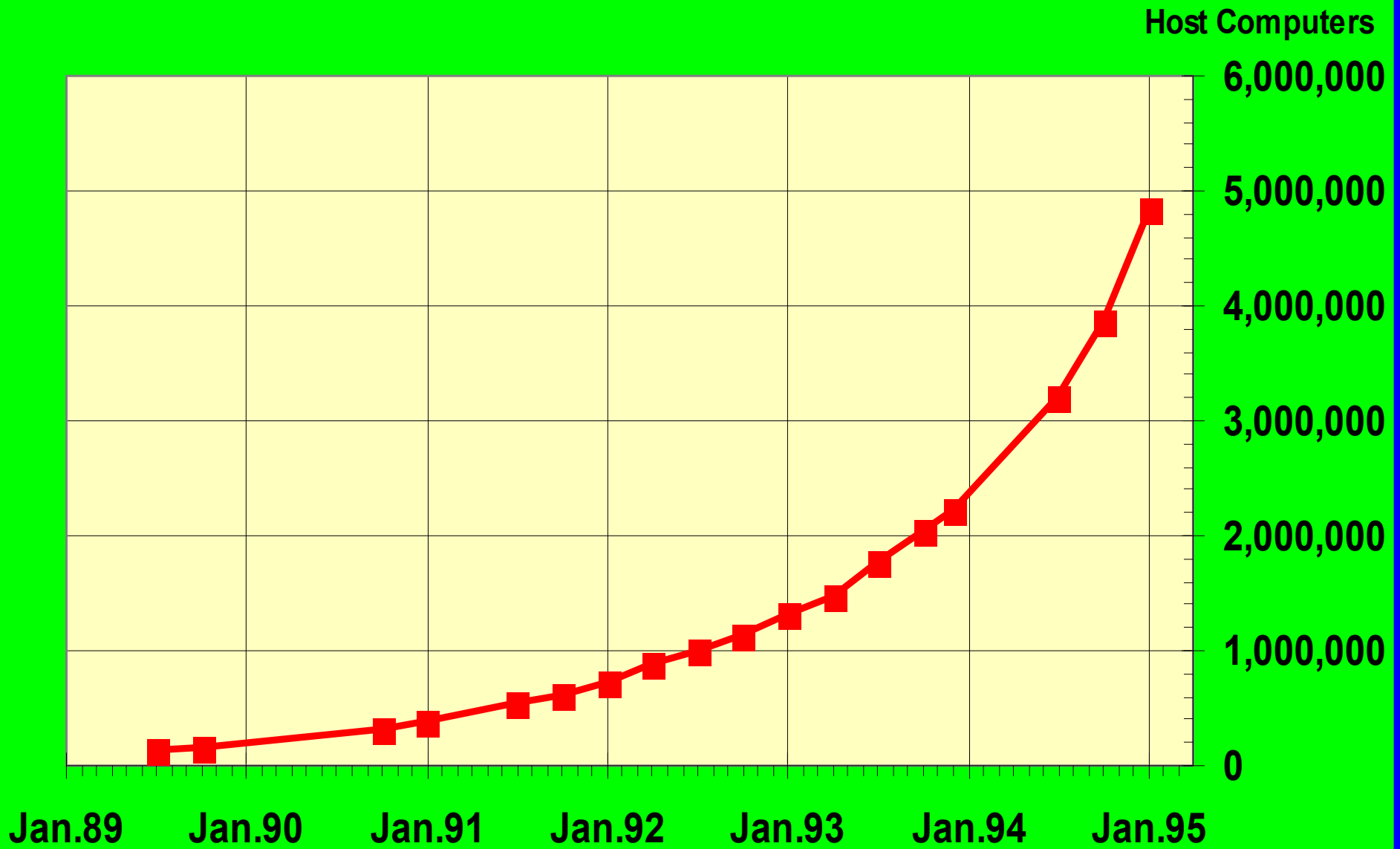
- Simple, attractive interfaces for ordinary people, especially the World Wide Web
- Simple, low overhead monetary transaction mechanisms
- Widespread availability of software
- Widespread availability of access
- Size and growth of the public Internet
- Low cost and high performance
- Explosion of use and innovation
- Bottom-up infrastructure



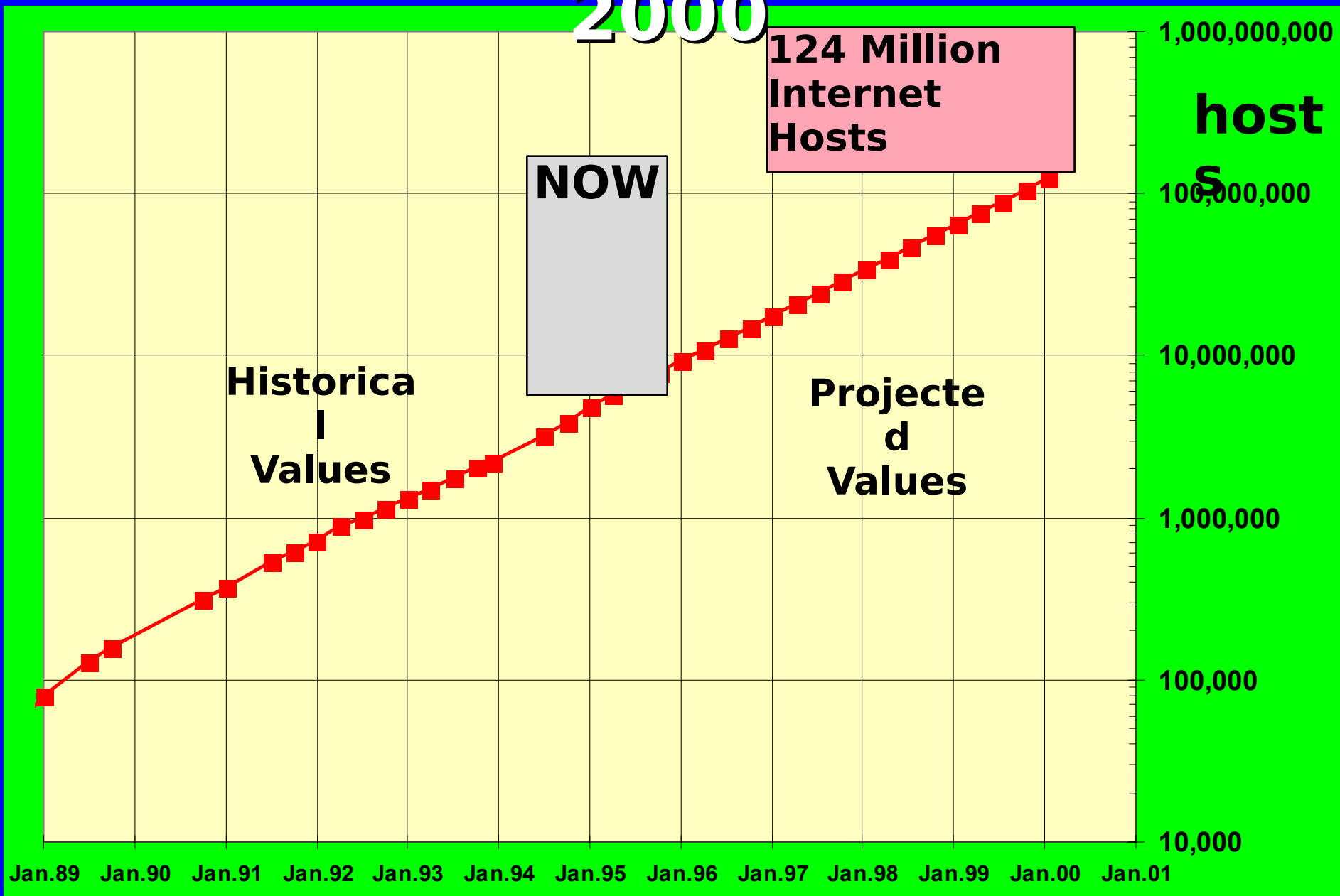
# Bottom-up Infrastructure

- NUL** Last decade a collective learning experience
- NUL** VLSI + PCs + workstations + LANs, routers + software + individual initiative + restructured workplace = bottom up information infrastructure
- NUL** Massive markets and new paradigms created
- NUL** Internet technologies and applications were “there”

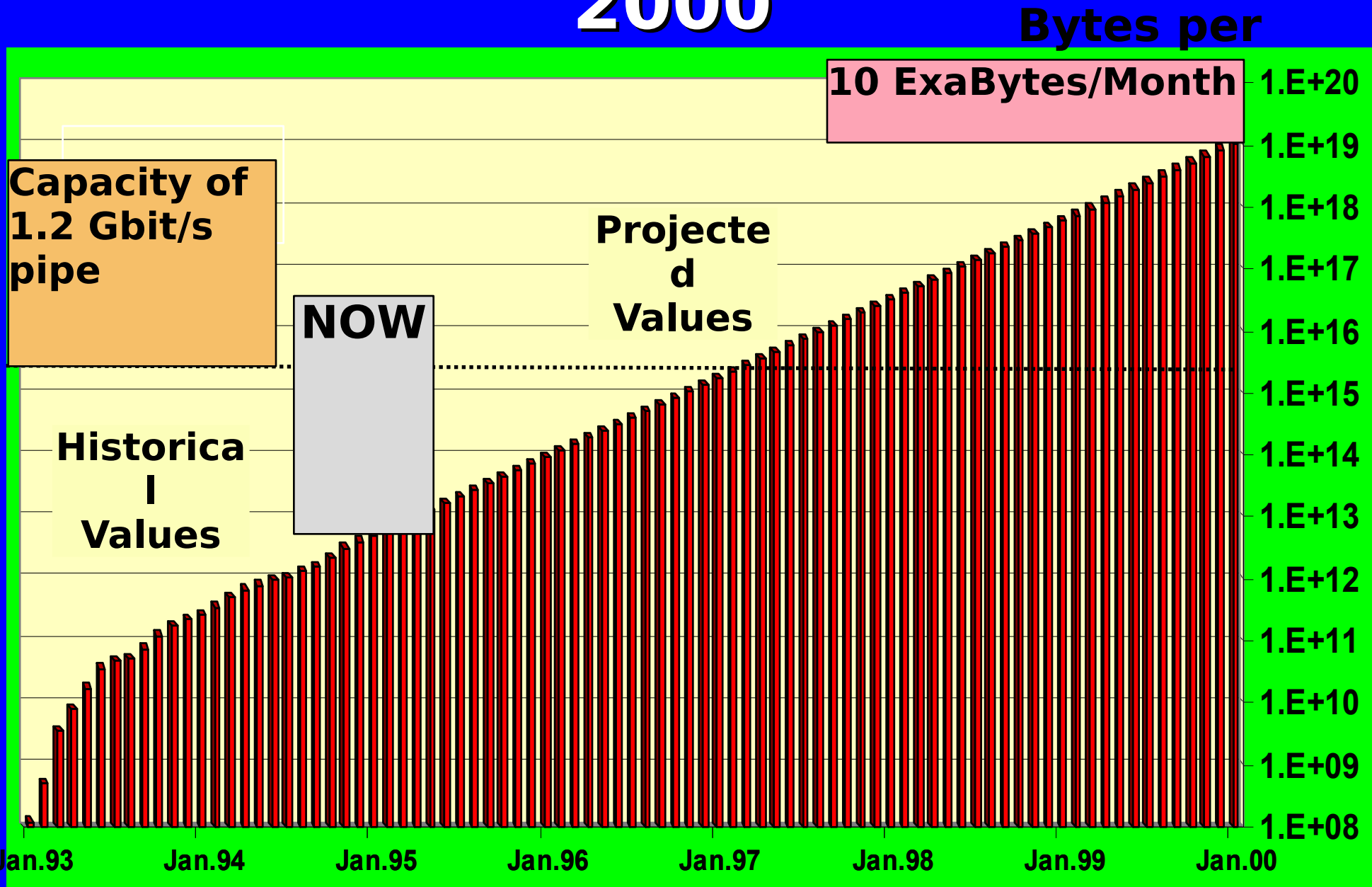
# Internet Host Computer Growth



# Internet Host Counts 1990-2000

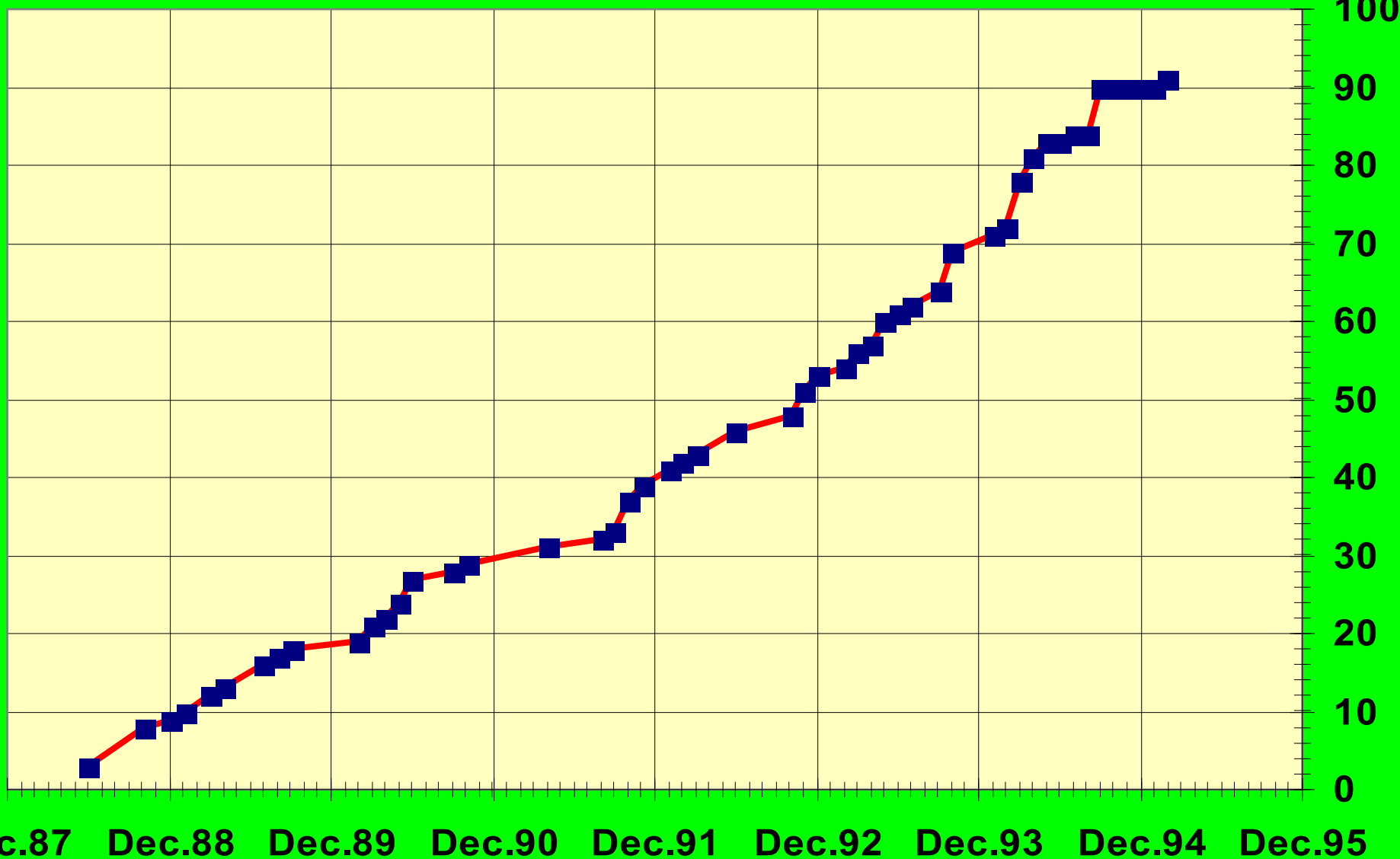


# World Wide Web Traffic 1993-2000



# Internet Backbone Connectivity

Countries

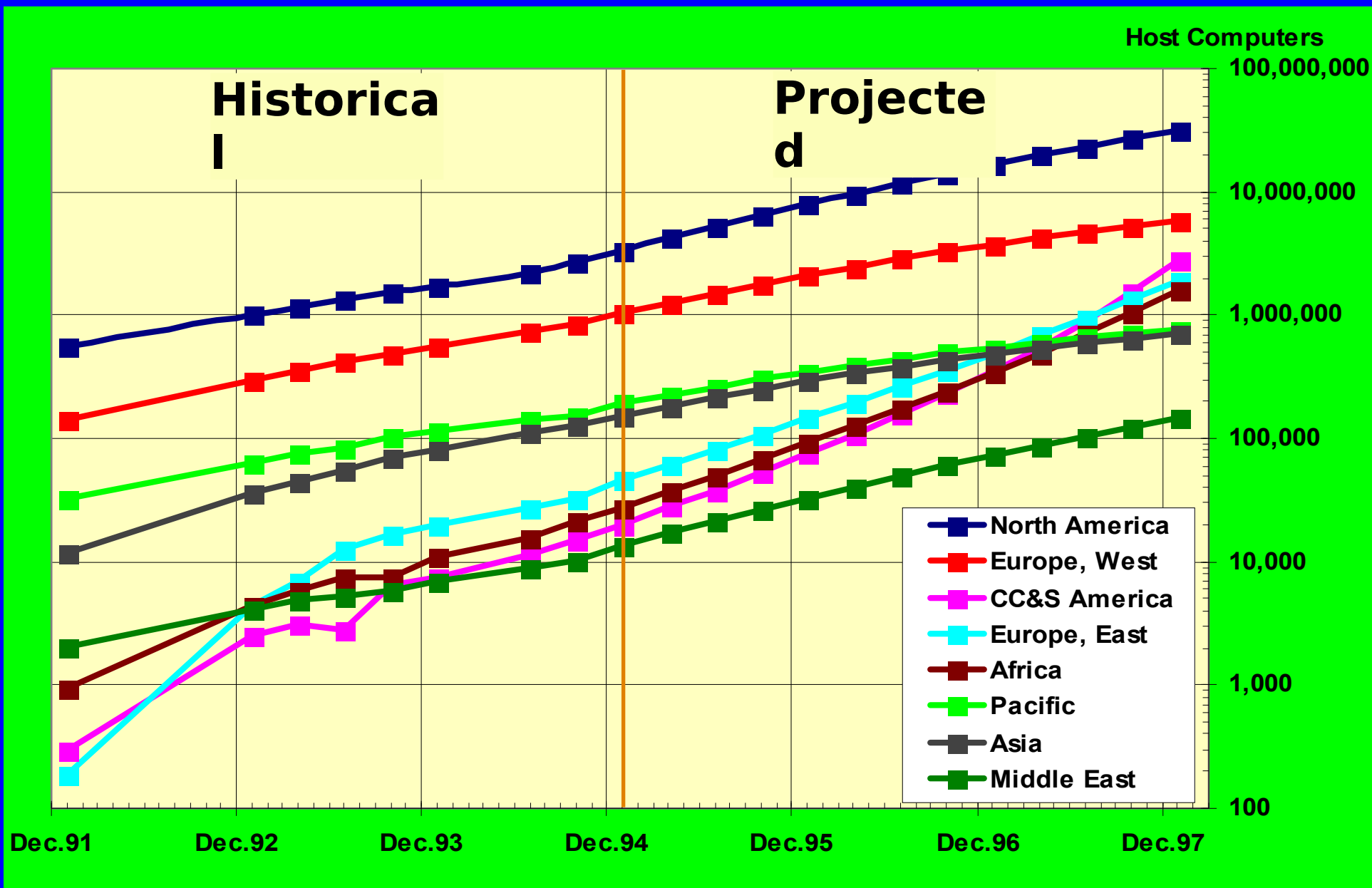


Dec.87 Dec.88 Dec.89 Dec.90 Dec.91 Dec.92 Dec.93 Dec.94 Dec.95

Source: <ftp://nic.merit.edu/statistics/nsfnet>

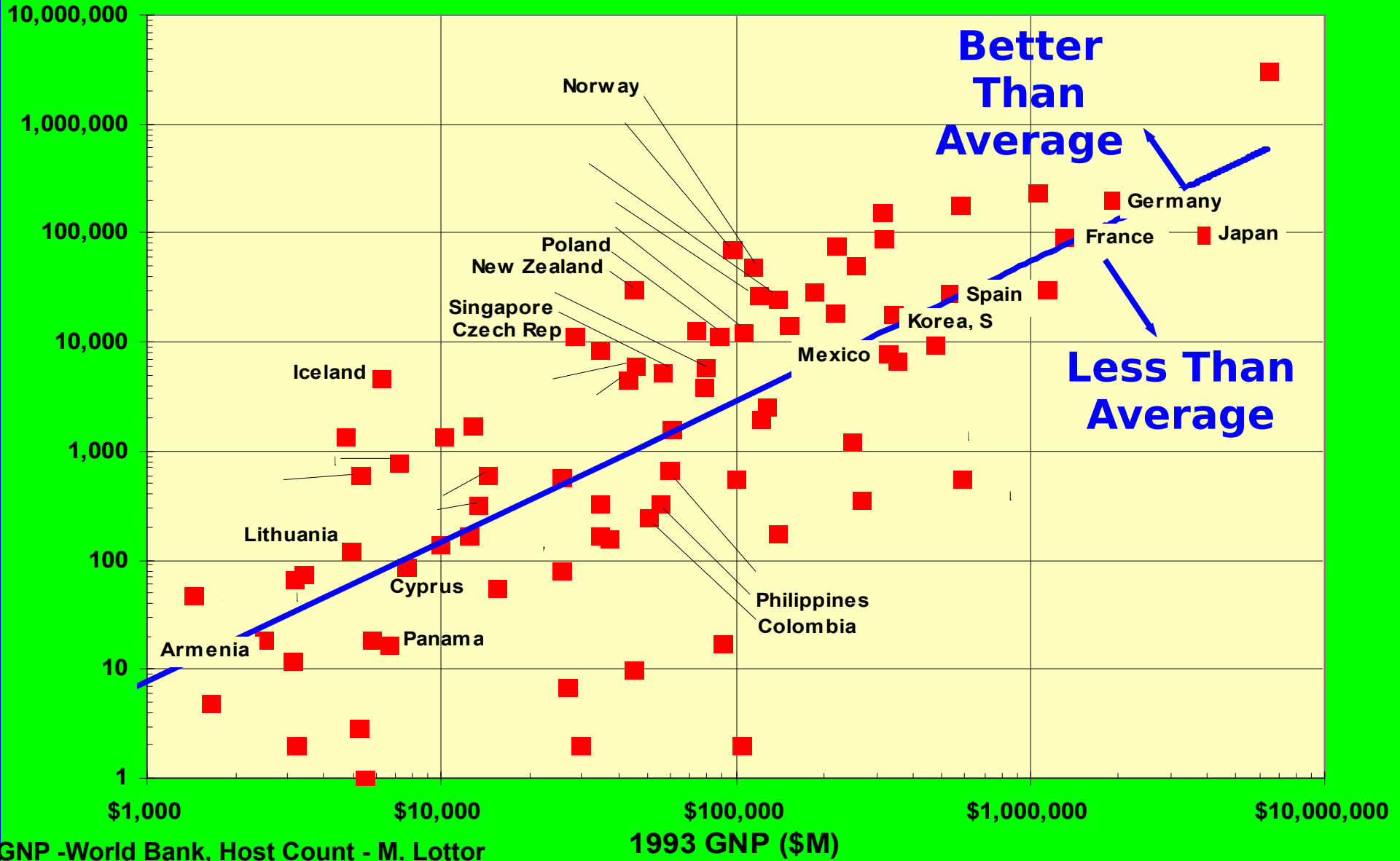
Source: nls.nsf.net country connectivity  
Copyright © 1995 A.M.Rutkowski and Internet Society

# Regional Growth Projections



# Internet Global Infrastructure Diffusion

Internet Host Computers - Jan 1995



sGNP - World Bank, Host Count - M. Lottor

# Factors Promoting Internet Diffusion

- Minimal or no regulatory constraints on value added and shared user networks
- Availability of cost-based private leased lines
- Availability of cost-based local access lines
- Availability of reasonably priced computers
- Facilities-based competition
- Individuals and institutions skilled in designing and operating tcp/ip computer networks
- Individuals and institutions capable of effectively using computer networking
- Time of entry into Internet community



# Reaching the Vision - Problems

- ❑ Available capital
- ❑ Remote geographical areas
- ❑ Ineffective telecom competition
- ❑ Non-cost-oriented transport
- ❑ Government regulation
- ❑ Impediments to bottom-up information infrastructure
- ❑ Changing institutions
- ❑ Changing and educating people

# Developing Countries

- An infrastructure for everybody**
- Allows leapfrogging over inadequate infrastructure**
- Enables immediate participation in global information infrastructure**
- Real success stories worldwide**
- Synergies with international organization missions**
- Minimizes “brain drain”**

# Emerging Problems in Cyberspace

- Implementing human rights
- Controlling unacceptable social or business behavior
- Privacy
- Legal jurisdiction and global conflict of laws
- Intellectual property compensation
- Cyberstress
- Unstable social or business dynamics
- Things we cannot imagine now!

# Promises

- u**A world of shared minds transcends accidental boundaries, geography, institutions, and time
- u**A communications and collaboration medium profoundly affecting our evolution
- u**...potentially filled with increased discovery, fulfillment and fascination for humankind

# 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, governmental, and non-profit

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