

# A Fractured Fairy Tale History of the Internet

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# SAKAI: FREE AS IN FREEDOM (ALPHA)



A RETROSPECTIVE  
DIARY

CHARLES SEVERANCE

SI124: Network Thinking – People, Information, and Technology

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http://www.si124.com/

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People, Information and Technology

Home Books Projects Questions

# SI124: Network Thinking

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**Update:** The 2011 SI124 Student Viral Video Projects are available!

It seems as though technology is getting smarter all the time. How is this happening? Is it some mysterious secret military technology or did it come from extra terrestrial aliens? Or perhaps is it simply a matter of studying human nature and patterns in data and writing software to extract the "intelligence".

How does Google decide what ads to put on the right side of this page? How does YouTube decide when to sell ads in a particular video the might go viral before it has a thousand views? How does Google know exactly what page to show you when you search for "2002 pontiac grand am broken windshield trim"?

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iPad Steering Wheel Mount Product Demonstration



## iPad Steering Wheel Mount

### PRODUCT DEMONSTRATION

“... the iPad Steering Wheel Mount is the "must-have" iPad accessory for anyone who spends significant time behind the wheel of an automobile. -- Stanley Milgram

The Apple iPad is the ideal automotive communications and entertainment device. The iPad is sized perfectly to mount using the iPad Steering Wheel Mount without obscuring the driver's view.

#### iPad Steering Wheel Mount Product Demonstration



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**PIE SMASH!**

# A Fractured Fairy Tale of Internet History



Fractured Fairy Tales presented familiar fairy tales and children's stories, but with storylines altered and modernized for humorous effect.



[http://en.wikipedia.org/wiki/The\\_Rocky\\_and\\_Bullwinkle\\_Show](http://en.wikipedia.org/wiki/The_Rocky_and_Bullwinkle_Show)



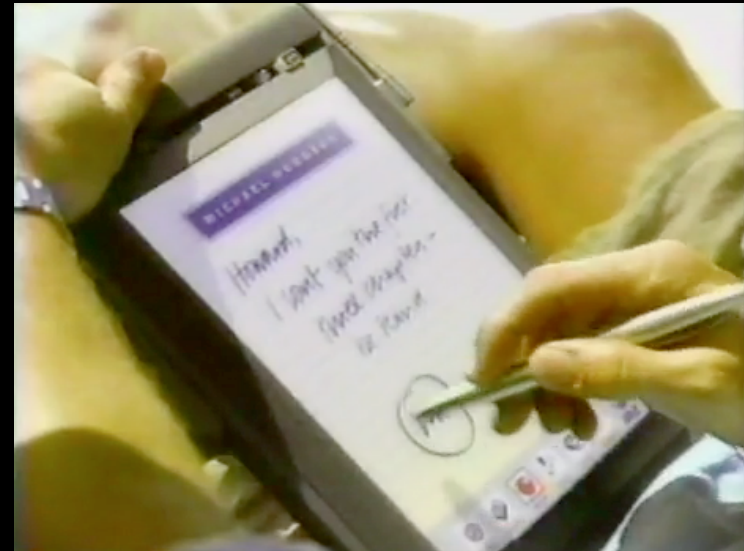
Brazil (1985)

Pick one of the following moments in Internet History: (a) the building of the National Science Foundation's NSFNet for academic use, (b) the creation of the World-Wide-Web at CERN, or (c) the development of the Mosaic web browser for Macintosh and PC computers. Assume that the event never happened and describe how you think that the current network environment would be different today.

<http://www.youtube.com/watch?v=4Vh2bIeZFUM>



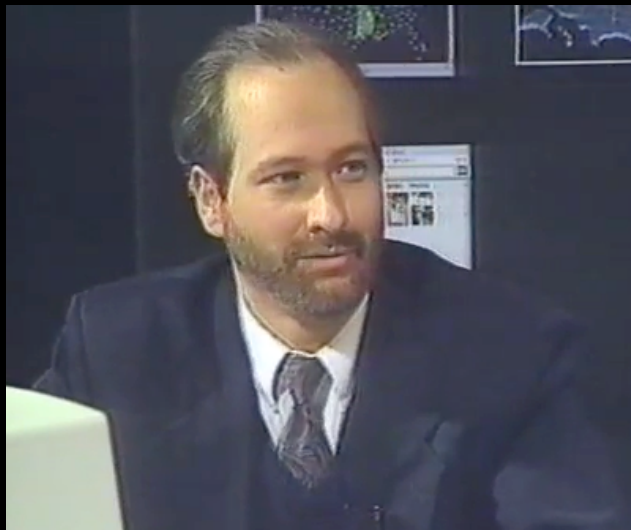
What year was this ad on  
Television? What  
company made the ad?



<http://www.youtube.com/watch?v=sYNUcFMClzw>

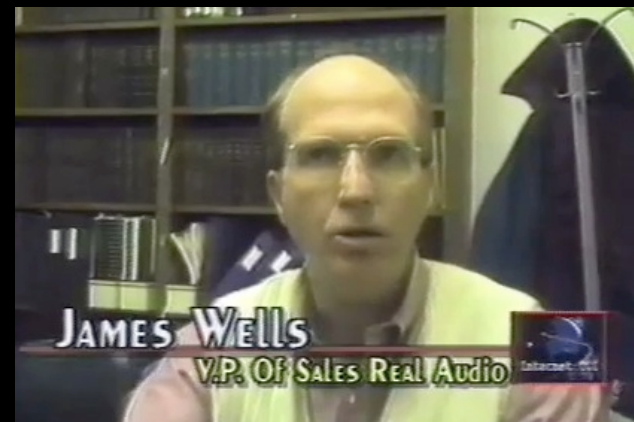
0:30

Internet: TCI Show 08  
<http://www.vimeo.com/4275919>



December 11-14, 1995

<http://www.w3.org/Conferences/WWW4/>

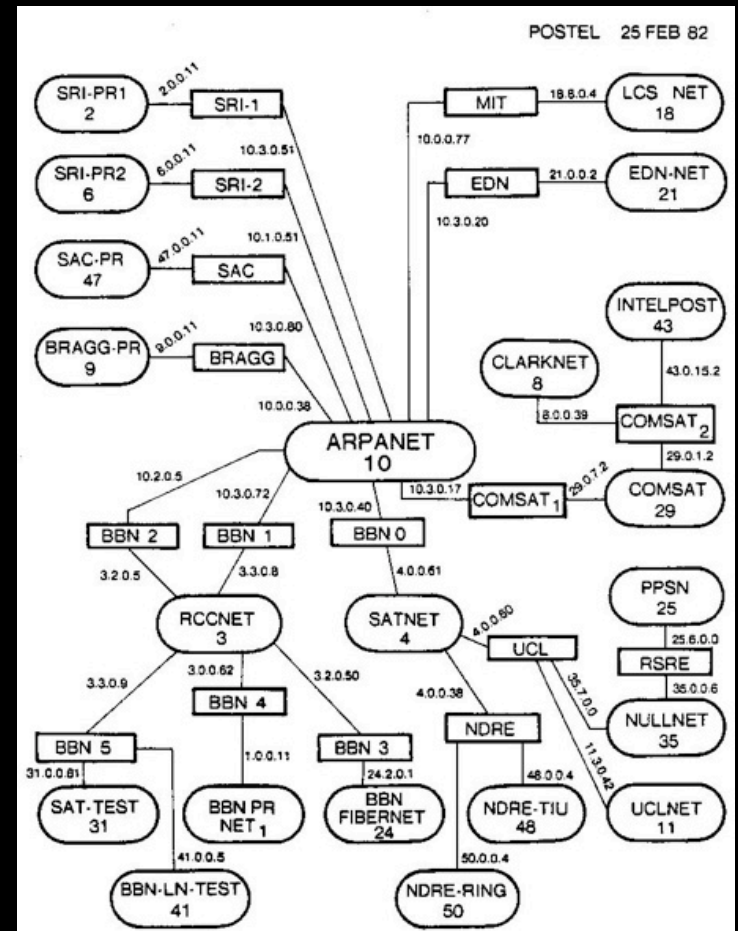


1:22



# Research Networks

- 1960's - 1980's
- What is the best protocol fairly to solve all of the competing needs?
- Should we go with commercial solutions from IBM or Digital Equipment? Or should we build something “open”?
- ARPANET was an exclusive Club



Source: Unknown



A map of the United States with state abbreviations. The state of Illinois is highlighted in red. The text "University of Illinois at Urbana-Champaign" is overlaid in blue. The map also shows parts of Canada, Mexico, and the surrounding oceans.

University of Illinois  
at Urbana-Champaign

# Supercomputers...

- As science needed faster and faster computers, more universities asked for their own Multimillion dollar supercomputer
- The National Science Foundation asked, “Why not buy a few supercomputers, and build up a national shared network?”



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# NCSA - Innovation

- We now “assume” the Internet and the Web - it was not so easy...
- A number of breakthrough innovations came from the National Center for Supercomputing Applications at Urbana-Champaign, Illinois
- High Performance Computing and the Internet were deeply linked



<http://www.vimeo.com/6982439>

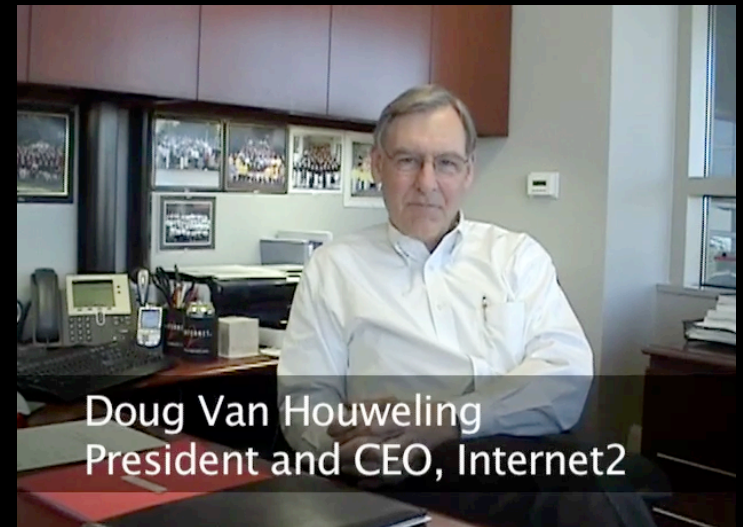
(2:51)



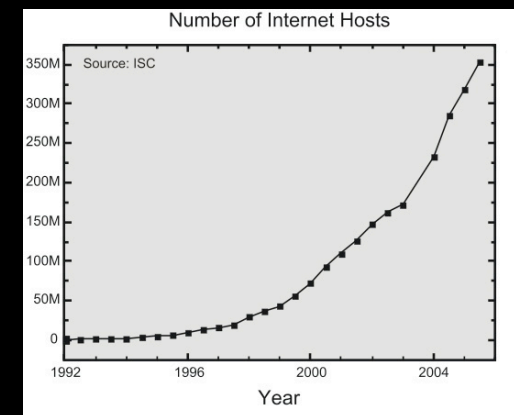
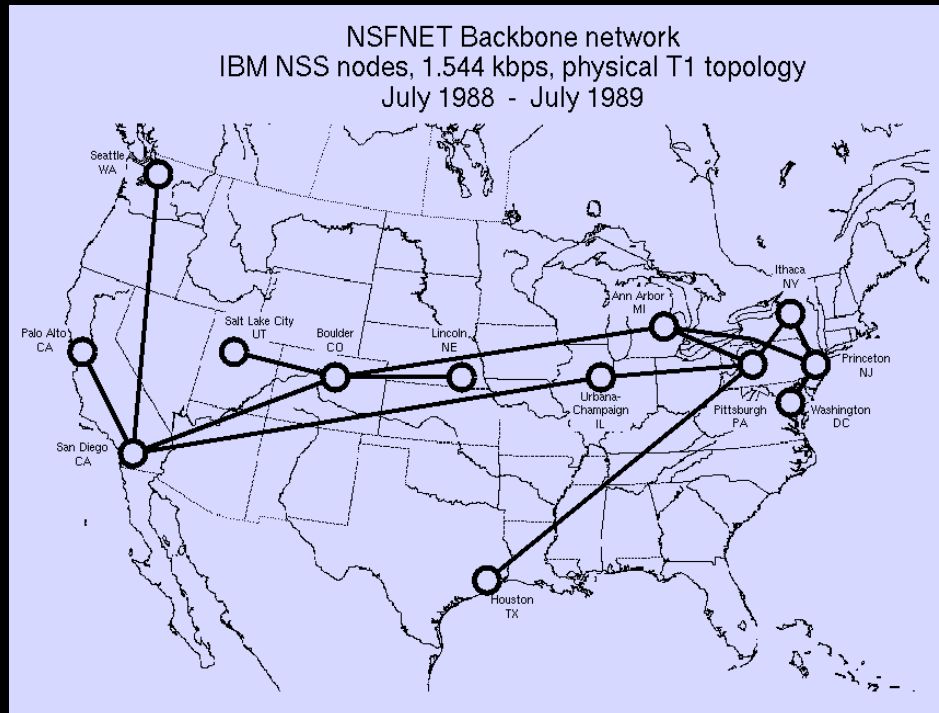


# NSFNet @ University of Michigan

- University of Michigan failed to get one of the five Supercomputer Centers
- Partners: University of Michigan, Merit Network, IBM Corporation, MCI, and State of Michigan
- Proposed a \$55M high-speed network for \$15M
- Operated from 1988-1995



<http://www.vimeo.com/11044819>



Source: <http://hpwren.ucsd.edu/~hwb/NSFNET/NSFNET-2007II/Summary/>

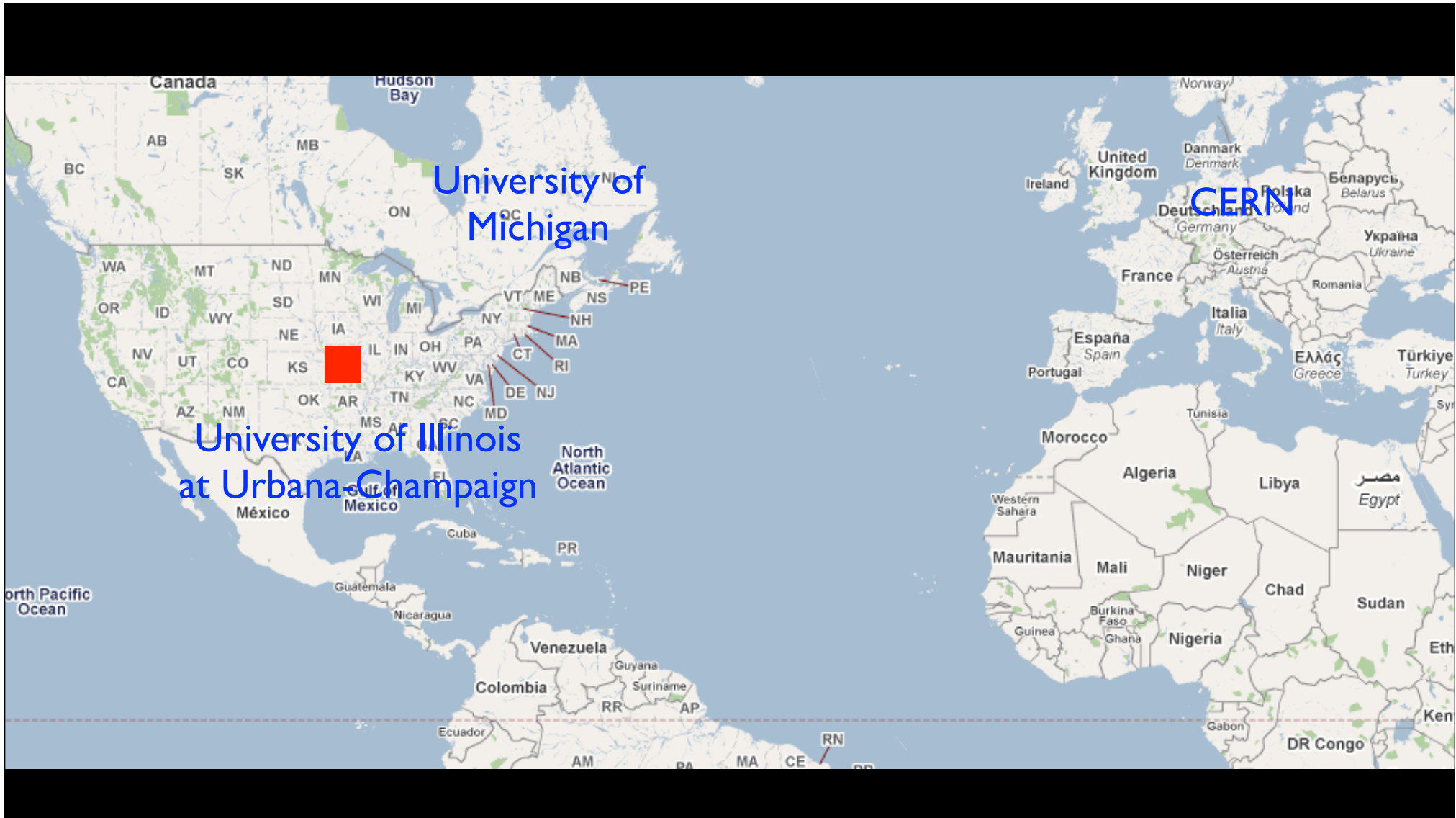
# NSF Net

- NSFNet was the first network that was “inclusive”
- Standardized on TCP/IP
- Initially the goal was all research universities
- In the early 1990's commercial companies (Internet Service Providers) could join and resell service

NSFNET T1  
Backbone and  
Regional  
Networks, 1991



[http://virdir.ncsa.uiuc.edu/virdir/raw-material/networking/nsfnet/NSFNET\\_1.htm](http://virdir.ncsa.uiuc.edu/virdir/raw-material/networking/nsfnet/NSFNET_1.htm)





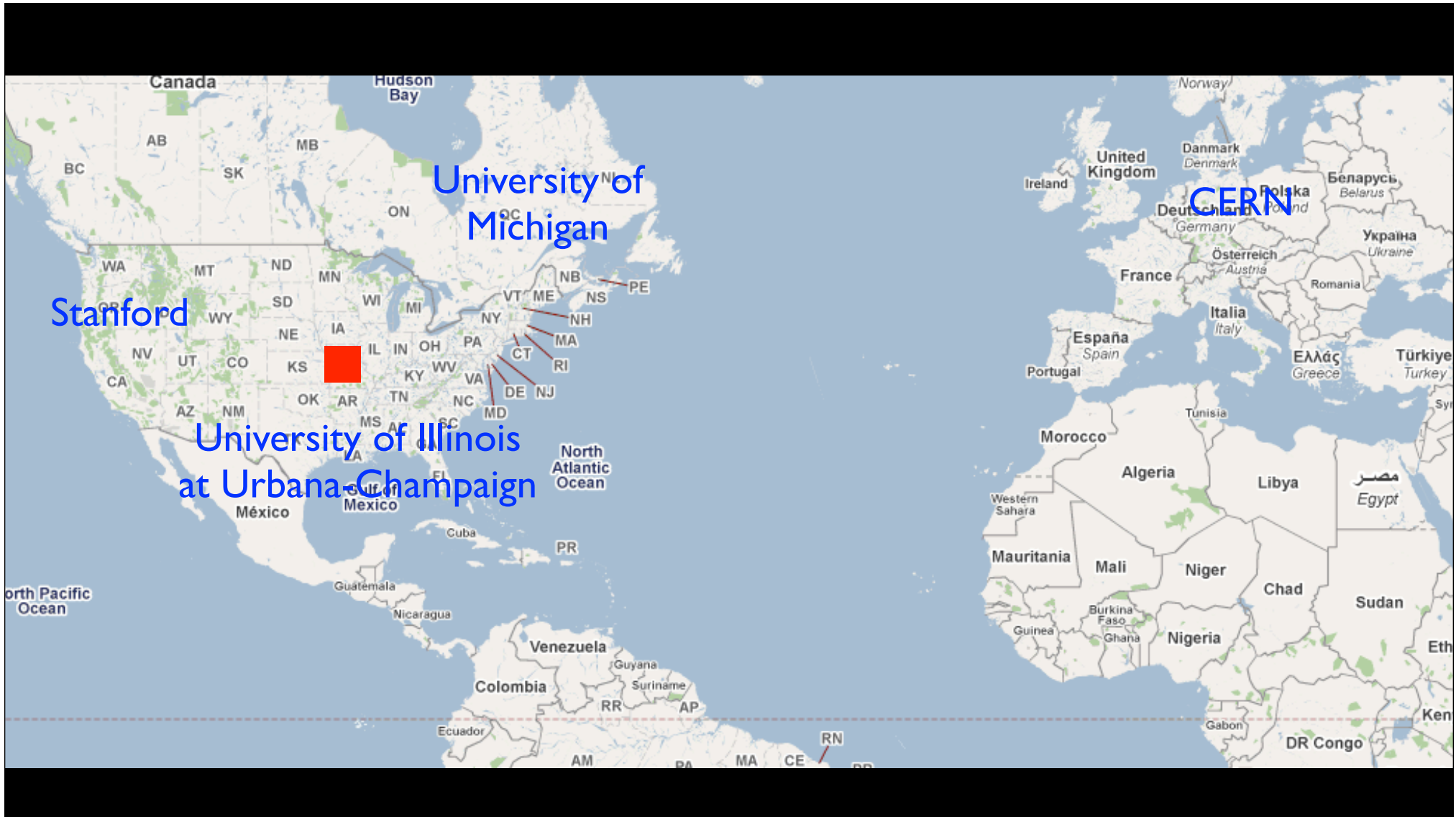
# The Beginning of the Web: CERN

- The Internet was infrastructure - the web gave the Internet a “user interface and URLs
- The Web was invented at CERN by Tim Berners-Lee and Robert Cailliau
- CERN developed browsers and servers - with a goal of worldwide hyperlinked documents



<http://www.youtube.com/watch?v=x2GylLq59rl>

(1:59)



# The First Web Server in America

- Stanford Linear Accelerator (SLAC) - Dr. Paul Kunz
- It was a database of 300,000 research papers
- December 12, 1991
- The first "search engine"?



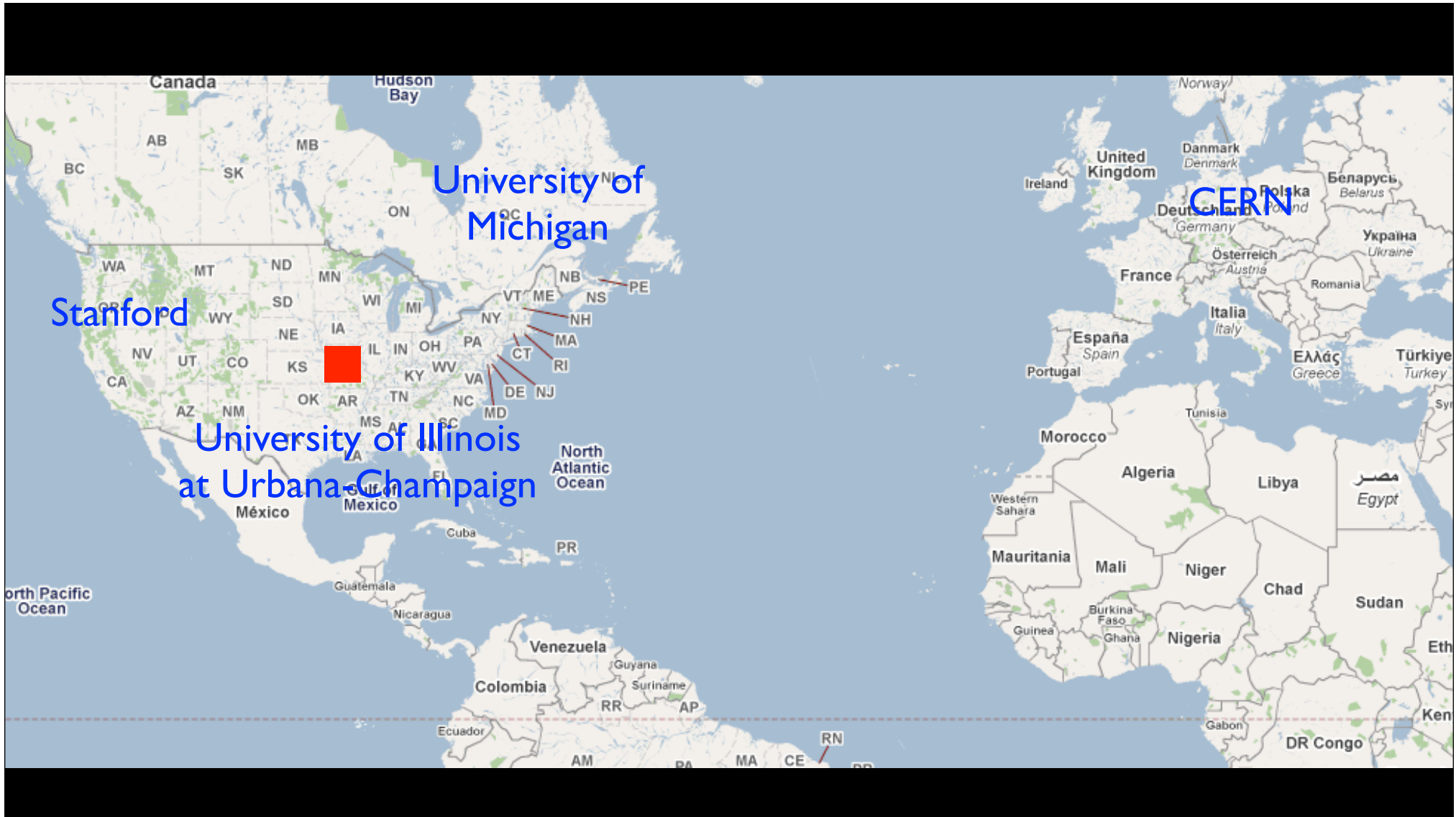
<http://www.youtube.com/watch?v=IOgqP2yoKwc>

(2:22)

# 1993: Gopher is Dominant

- Internet Engineering Task Force (IETF) Meeting
  - March 29-April 2, 1993 - Columbus, Ohio, USA (638 attendees)
  - Gopher BOF - 200 attendees
  - World-Wide Web BOF - 15 attendees including Tim Berners-Lee
- P.S. DVD is invented this year

<http://www.ietf.org/proceedings/26.pdf>





# Mosaic - Netscape - Mozilla - Firefox

- Mosaic was developed at NCSA - Unix / Windows / Mac - Easy Install
- NCSA created the httpd web server which is the basic for the Apache web server
- While most of the NCSA programmers formed Netscape and made their fortunes, NCSA released their browser for free and focused on building standards to keep the web open with the World-Wide-Web Consortium

<http://www.vimeo.com/7053726>



3:11

# 1994: Year of the Web

- Netscape Founded - April 4, 1994
- WWW Conf: May 25-26-27 1994, CERN, Geneva (Switzerland)
- WWW Conf: October 17-19, 1994, Chicago, IL
- October 1994, Tim Berners-Lee founded the (W3C) at MIT
- November 8, 1994 - Windows 95 beta 2

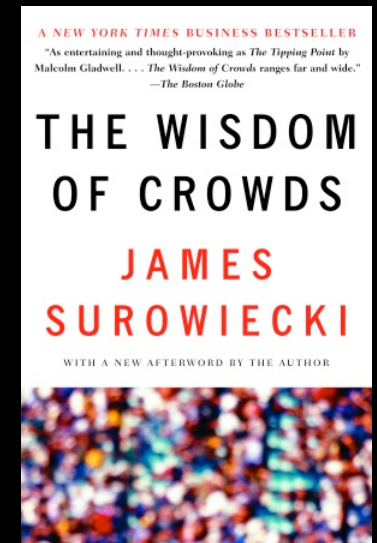


0:49



0:54

- Larry Smarr wanted to make supercomputers available to physicists
- University of Michigan snuck in 1.54Mb/sec instead of 56kb/sec backbone for the NSFNet
- Tim Berners-Less and Robert Cailliau were building a system for network hosted documentation
- Paul Kunz was trying to make his article database easier to use
- Joseph Hardin wanted to make supercomputers more user friendly

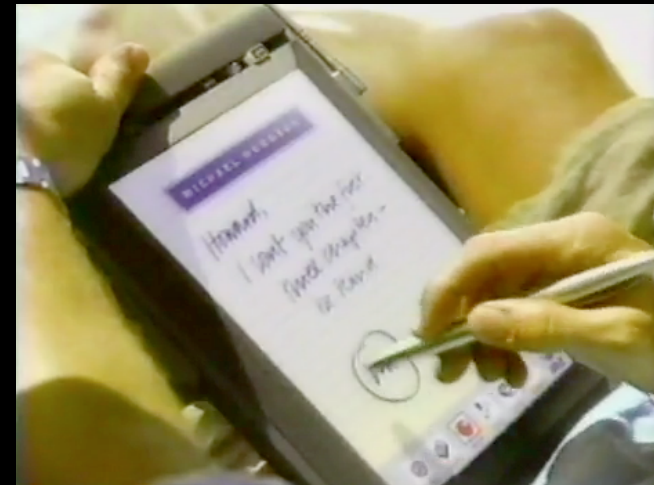




<http://www.youtube.com/watch?v=sYNUcFMClzw>



What is the flaw of  
the logic of the 'You  
Will' commercials?



<http://www.youtube.com/watch?v=sYNUcFMClzw>





Monopoly and  
innovation are seldom  
co-located.



<http://www.youtube.com/watch?v=sYNUcFMClzw>

# My Dystopian Present

- The network would be from AT&T
- Our laptop would be from AT&T
- Our PDA would be from AT&T
- E-Mail addresses would be numeric and have an area code (517) 684-0982-4016 - there would be no spam - caller id for e-mail
- We would be charged for every byte we transferred



# My Dystopian Present

- Hardware would work flawlessly
- Hardware would be seldom be upgraded
- Technology hardware would be very uniform
- No user-servicable parts inside- repairs would be at a AT&T service center
- There would be no free Wifi at airports - nothing would be free



# 1997: The Web Land Rush...

- In the late 1990's there were many fortunes to be made - simply by being first in a market
- Many things were “novel” when it was re-invented on the web
- New brands were quickly established and became dominant



<http://www.vimeo.com/7048422>

# The Modern Internet

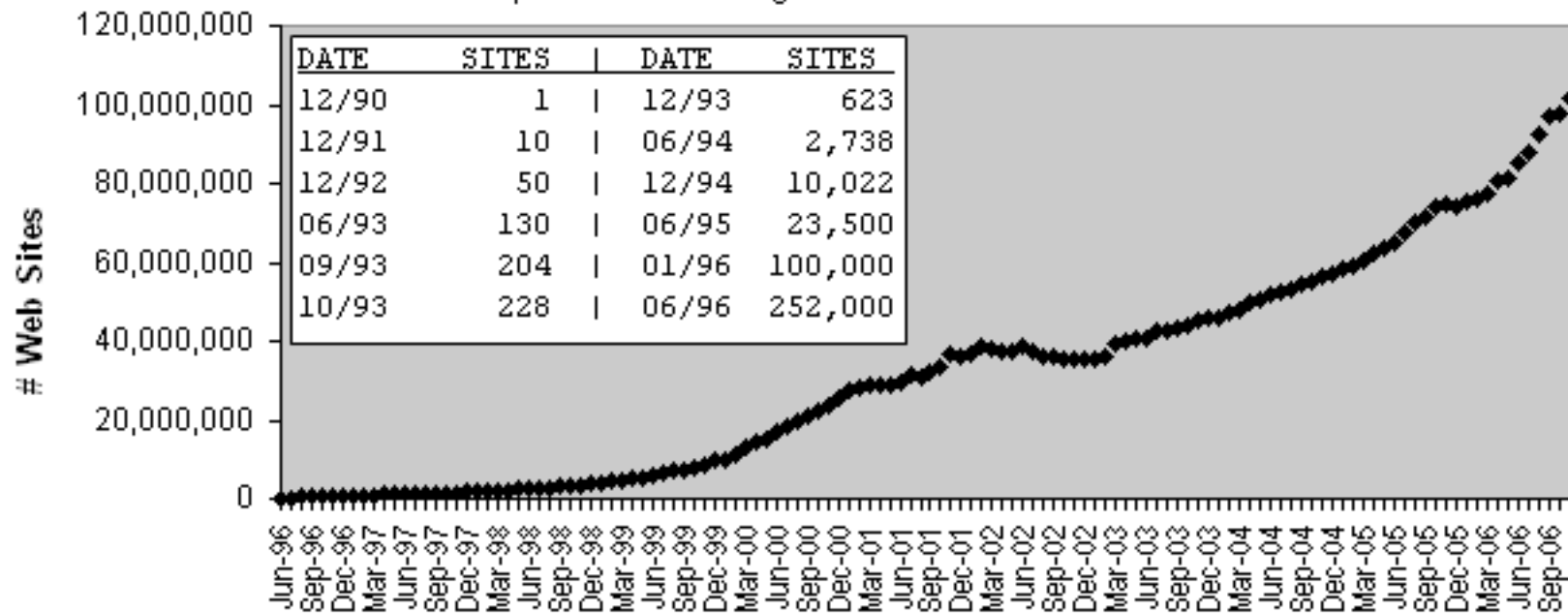
- In the late 1990's in the boom there was a great deal of Fiber optic that was installed in the US
- High speed and long distance were cheap and common
- Many national backbone networks emerged - commercial, government, academic, etc
- These networks swap data at “peering points” so we see one seamless Internet - after about 1999 - this was all pretty boring - it just worked

[http://en.wikipedia.org/wiki/Internet\\_Exchange\\_Point](http://en.wikipedia.org/wiki/Internet_Exchange_Point)



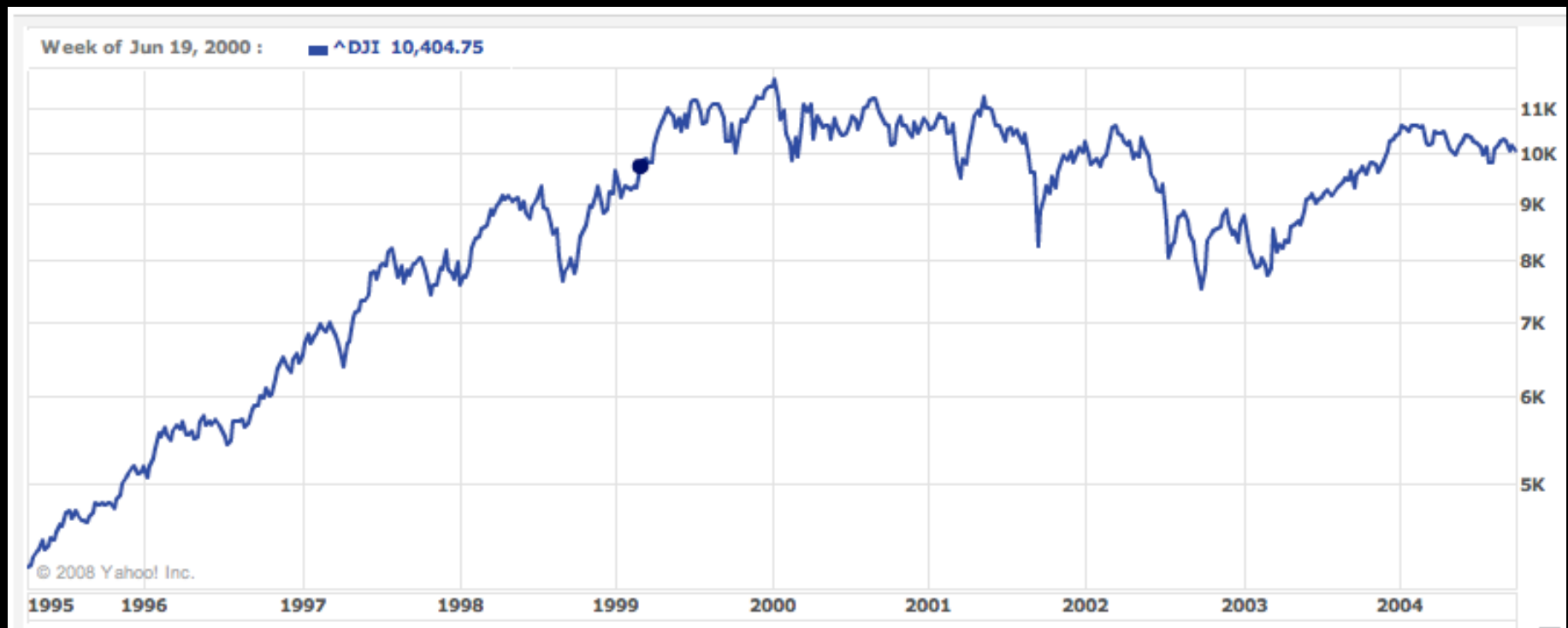
Hobbes' Internet Timeline Copyright ©2006 Robert H Zakon

<http://www.zakon.org/robert/internet/timeline/>



<http://www.zakon.org/robert/internet/timeline/>

# The “Web Effect”



# Moar Dr. Chuck Videos...



<http://www.vimeo.com/7307422>



<http://www.vimeo.com/6215179>





# Thank You

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