The Future Internet: Can we get there from here?

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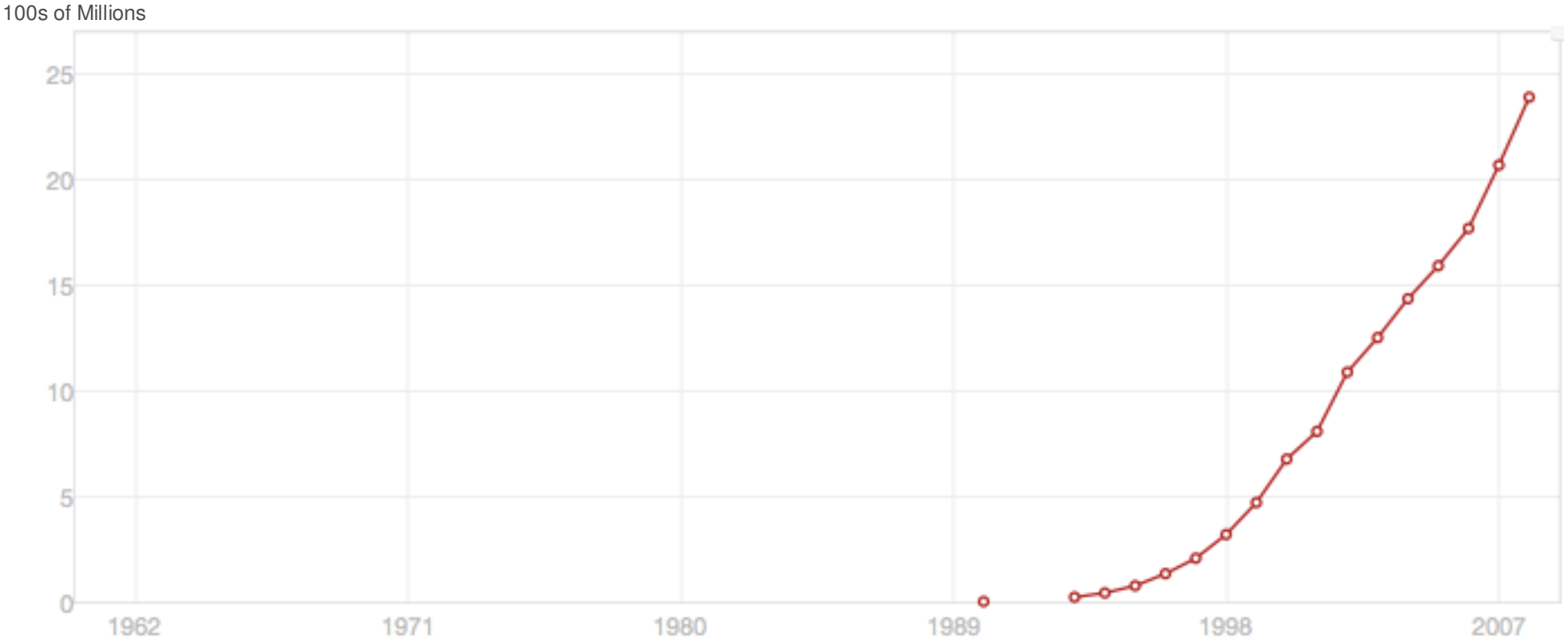
This presentation is not about

IPv6

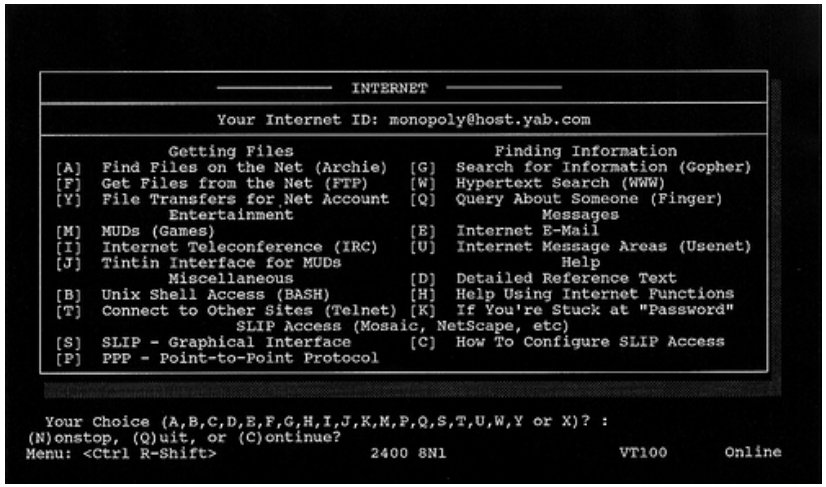
on its own

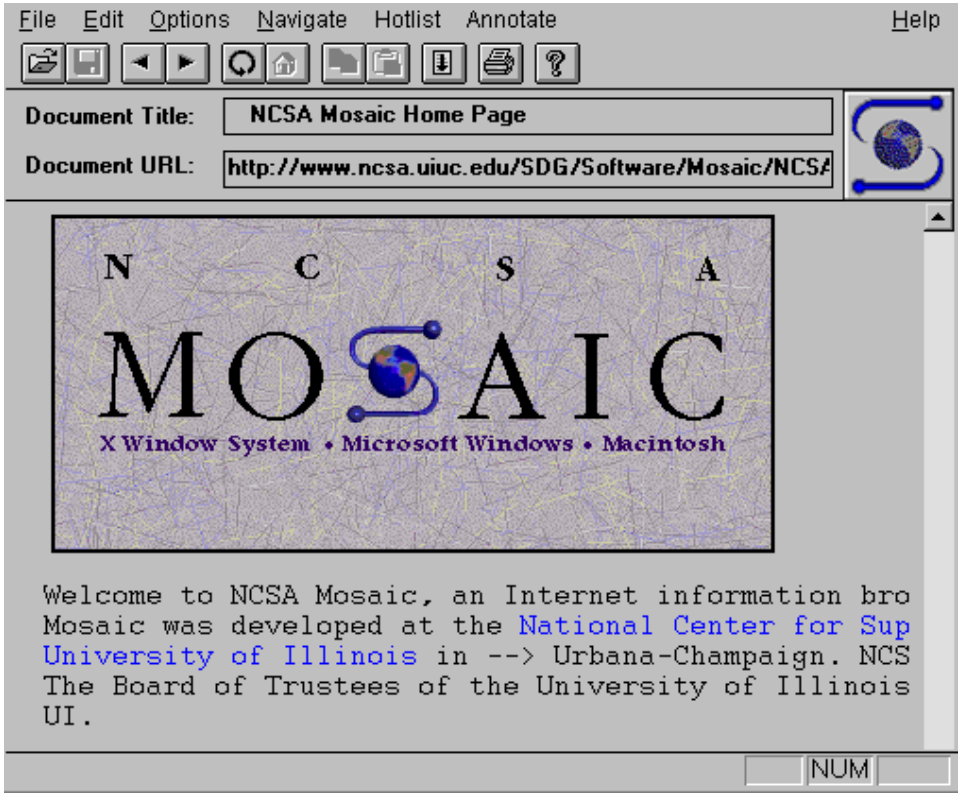
People on the Internet



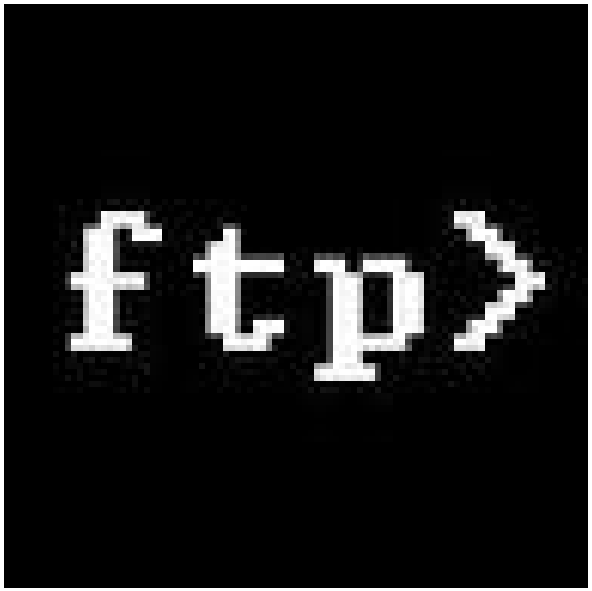
Source: World Bank

Gopher to Web





FTP to Web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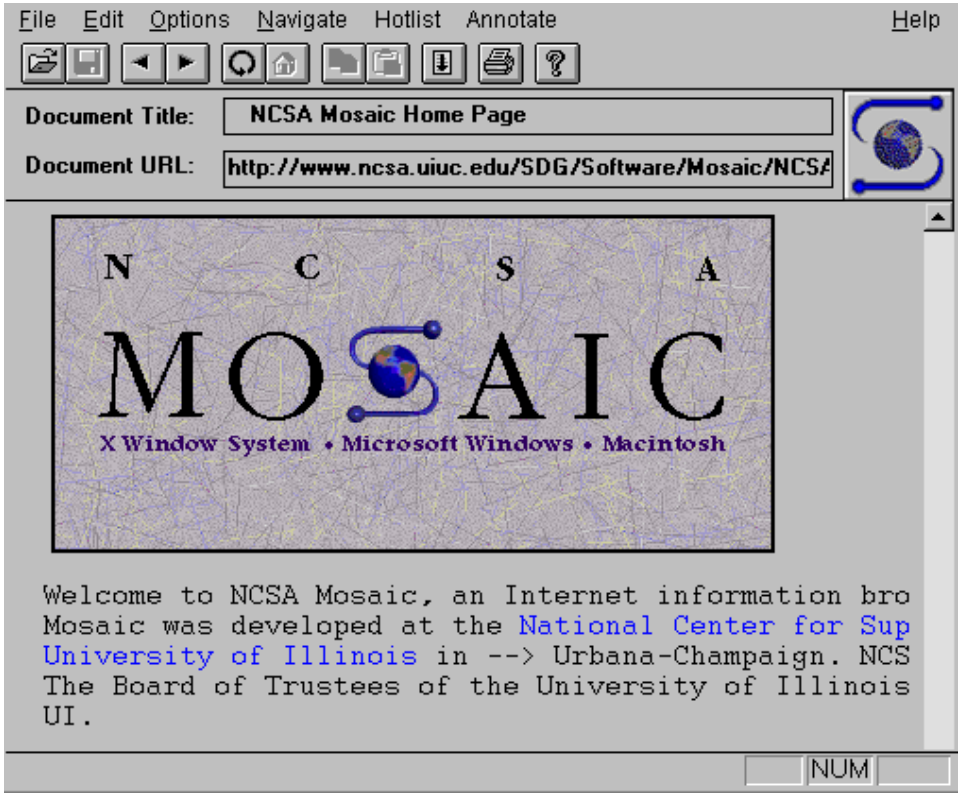

File Edit Options Navigate Hotlist Annotate Help
Document Title: NCSA Mosaic Home Page
Document URL: http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/NCSA
N C S A
MOSAIC
X Window System • Microsoft Windows • Macintosh
Welcome to NCSA Mosaic, an Internet information bro
Mosaic was developed at the National Center for Sup
University of Illinois in --> Urbana-Champaign. NCS
The Board of Trustees of the University of Illinois
UI.
NUM

192.52.179.024

2001:0db8:85a3:0000:0000:8a2e:0370:7334

Facebook IPv6 Address

2620:0:1cfe:face:b00c::3

The only constant is change...

— Isaac Asimov

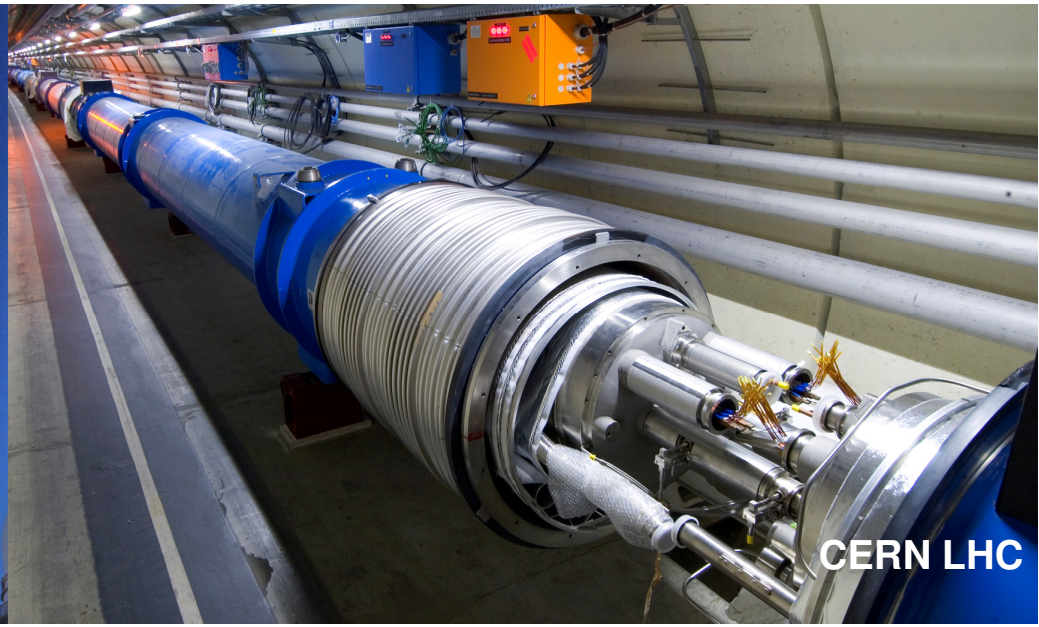
Why do we want the Internet to continue evolving?

- **More new stuff**
  Innovating without permission
- **More people**
  Enjoying the same Internet we enjoy today
- **More devices**
  Supporting sensor nets and concepts like “smart grids”
- **Independent and collaborative networks**
  Evolving in their own right

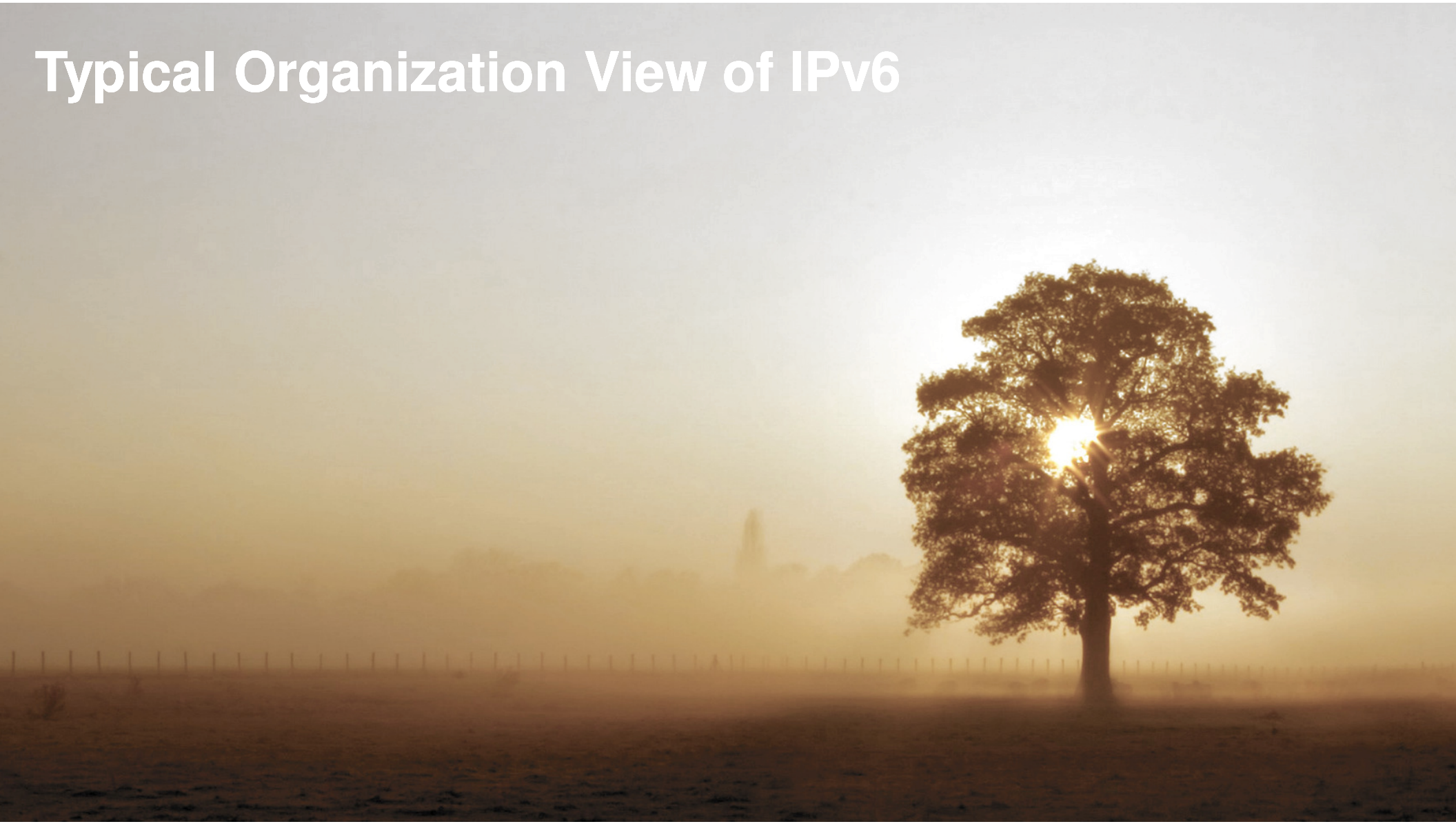
Internet Evolution has brought us:

Internet Evolution in Research and Education

Gemini Observatory


CERN LHC

Typical Organization View of IPv6



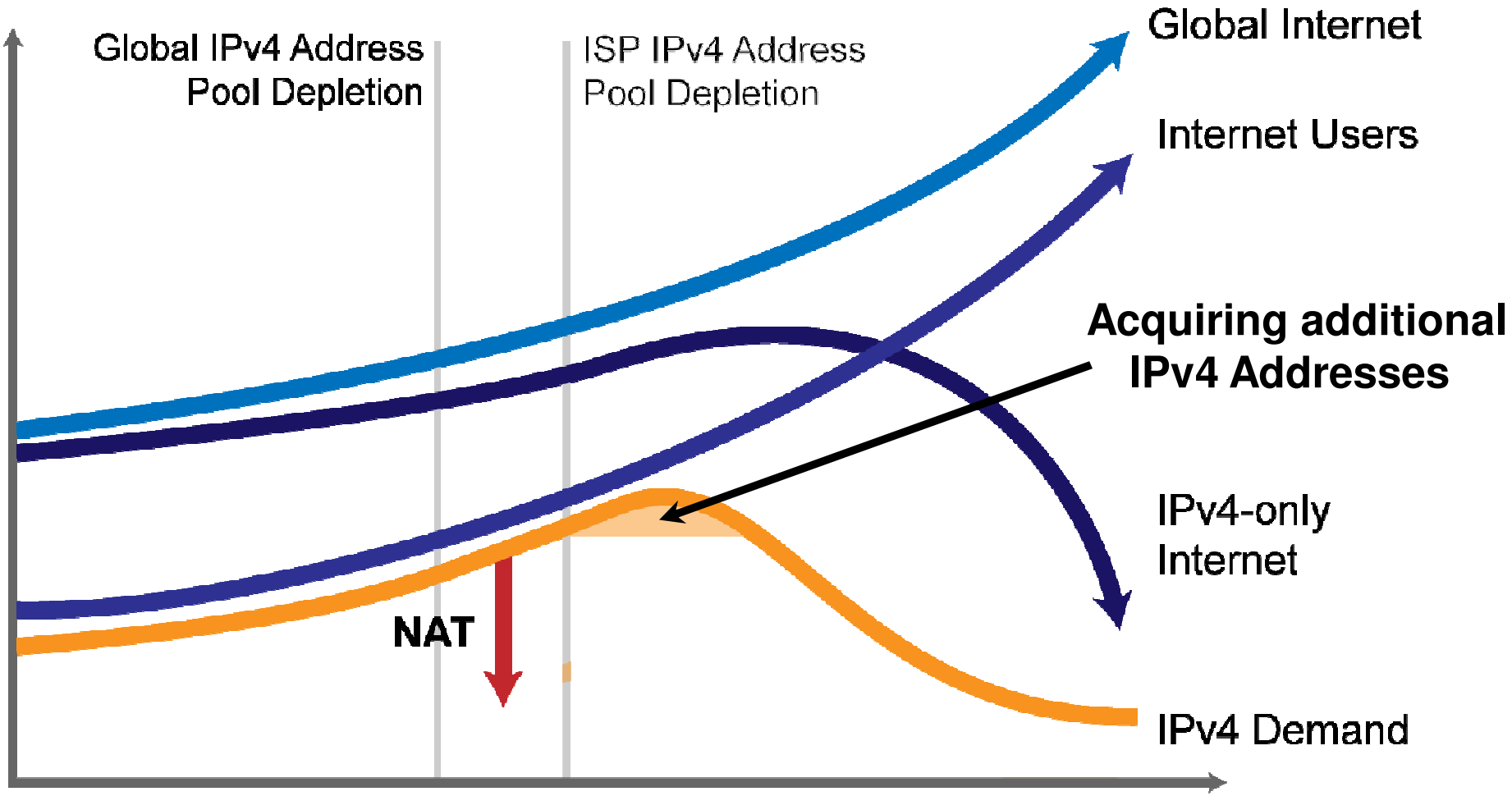
The Internet’s Future Innovation is the Forest

The IPv6 Challenge
20% by 2012

Why is 20% the goal?

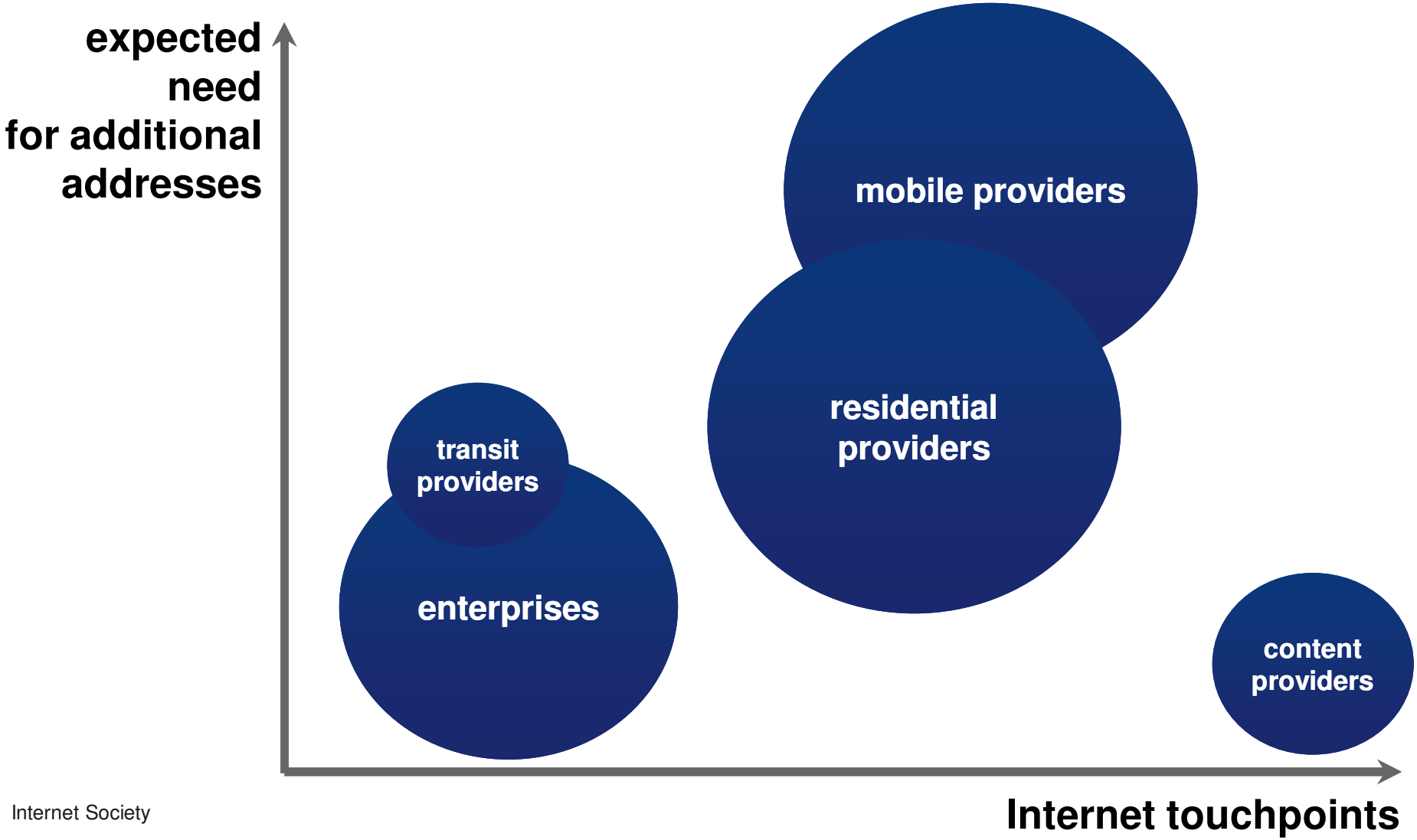
- Not **just** because more is better...
- We need a tipping point big enough so that:
  - IPv6 is part of “standard” Internet access
  - Content providers recognize that IPv6 is important
  - Technology providers can't ignore IPv6
- We’ll prove that the Internet can still evolve

Where do we stand?



Challenges for IPv6

- Transit providers
- Enterprise
- Residential providers
- Mobile operators
- Content Providers


expected need for additional addresses
mobile providers
residential providers
transit providers
enterprises
content providers
Internet touchpoints

IPv6 is Beginning to Make Business Sense

- IPv4 addresses now have prices attached
- NATs are hard and expensive
- Party lines don’t work for business
- Certain apps don’t work at all (games)
- New markets are going to be driven by IPv6

IPv6 Deployment Already Underway

- Free (French ISP)
- Comcast
- Japanese ISPs
- Hurricane Electric
- Google
- YouTube

8 June 2011

http://www.worldipv6day.org

World IPv6 Day Participants

Xiphiastec Tagadab.com Mutali Genius Orange, Moldova Ericsson Public Interest Registry Gustavus Adolphus College Rosslyn Analytics Lex Media Interop Tokyo 2011 Tom's Hardware US Department of Veterans Affairs Gigatux Tellabs Seznam.cz DynamicInternet.com Voxel Juniper Networks Meebo 2g2u Telkom Indonesia Verisign Netcetera Astaro mihostcgi www.girlsgogame.nl Midland Computers Arces Cisco netPR.pl sp. z o.o. Terra Host Europe Command Channel Daily Kos NUST School of Electrical Engineering and Computer Science Sprint CCABA Campus Party Beirut Internet eXchange Point OpenDNS Bing Hurricane Labs OfficeScape Sesame Workshop Rensselaer Polytechnic Institute Shazzle, LLC BlueCat Networks LCN Biglobe Laurentian University Internet2 XS Software JSCO Bangzoom Software Inc Universidad Nacional Autonoma de Mexico CESCA New York University Harvard University Server Choice Akanthe Solutions Urban Dictionary Ripple Communications Devoteam Genesis HostingXS BV ULAKNET American Domain Names Twenga Vonage Tata Communications Spil Games Technodyne NIC Mexico Sliqua Enterprise Hosting Infoblox Plurk ISOMEDIA TownNews NTT Hostmaster Ltd Frequence3 Mozilla Exact Abacus Appalachian Wireless Huawei IP-Only Telecommunications Network AB Fortinet Exact Abacus CANARIE Inc. W3C A10 Networks ICT Standards Advisory Council of Canada NYI NET YellowBot Radius Gateway KTS Australia Pty Ltd IG 2020Media Mercury Z HTTrack LemonEntry LUNS Ltd. Outpost10f WeatherCity Services Universidad APEC sapo.pt www.miniclip.com TheHavenNet Nolet5

Who's going to build the Future Internet?

We will.

IPv6 Call to Action

- Make a plan if you don’t have one
- If you have a plan, *accelerate it*
- Let the world know about your plan

Quotes from World IPv6 Day Participants

- “We've turned IPv6 on already.”
- “We want to be the first in our industry to be fully IPv6 capable.”
- “My customers have been calling me because of this thing you're doing.”
- “We switched ISPs so we can use IPv6.”
- “Working together, we can make 2011 an historic year for ensuring the stability, security and growth of the Internet.”
- “...a groundswell of attention.”
- “Another step in furthering the industry’s ability to work together to anticipate and solve real-world issues.”
- “The number of web-connected devices is exploding, and World IPv6 Day is a crucial step in ensuring they can all communicate"
- “In the short history of the Internet, the transition to IPv6 is one of the most important steps we will take together to protect the Internet as we know it.”

The Future Internet:
Can we get there from here?

Only if you take us...

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