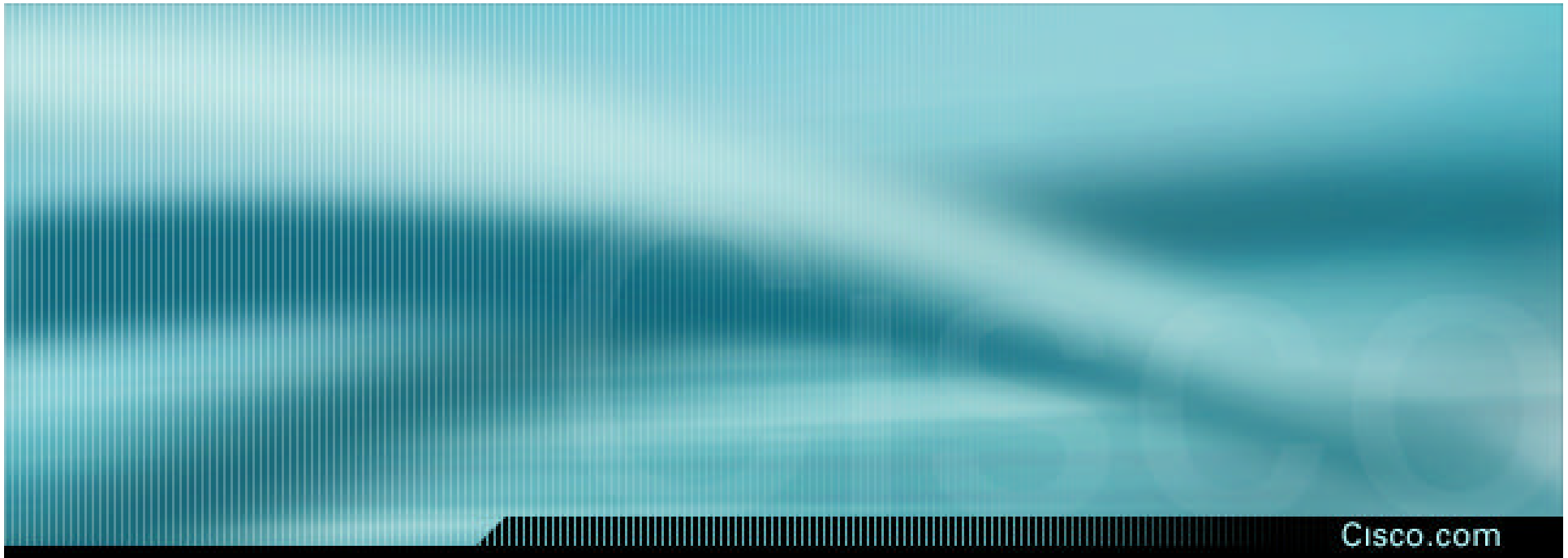


The IETF

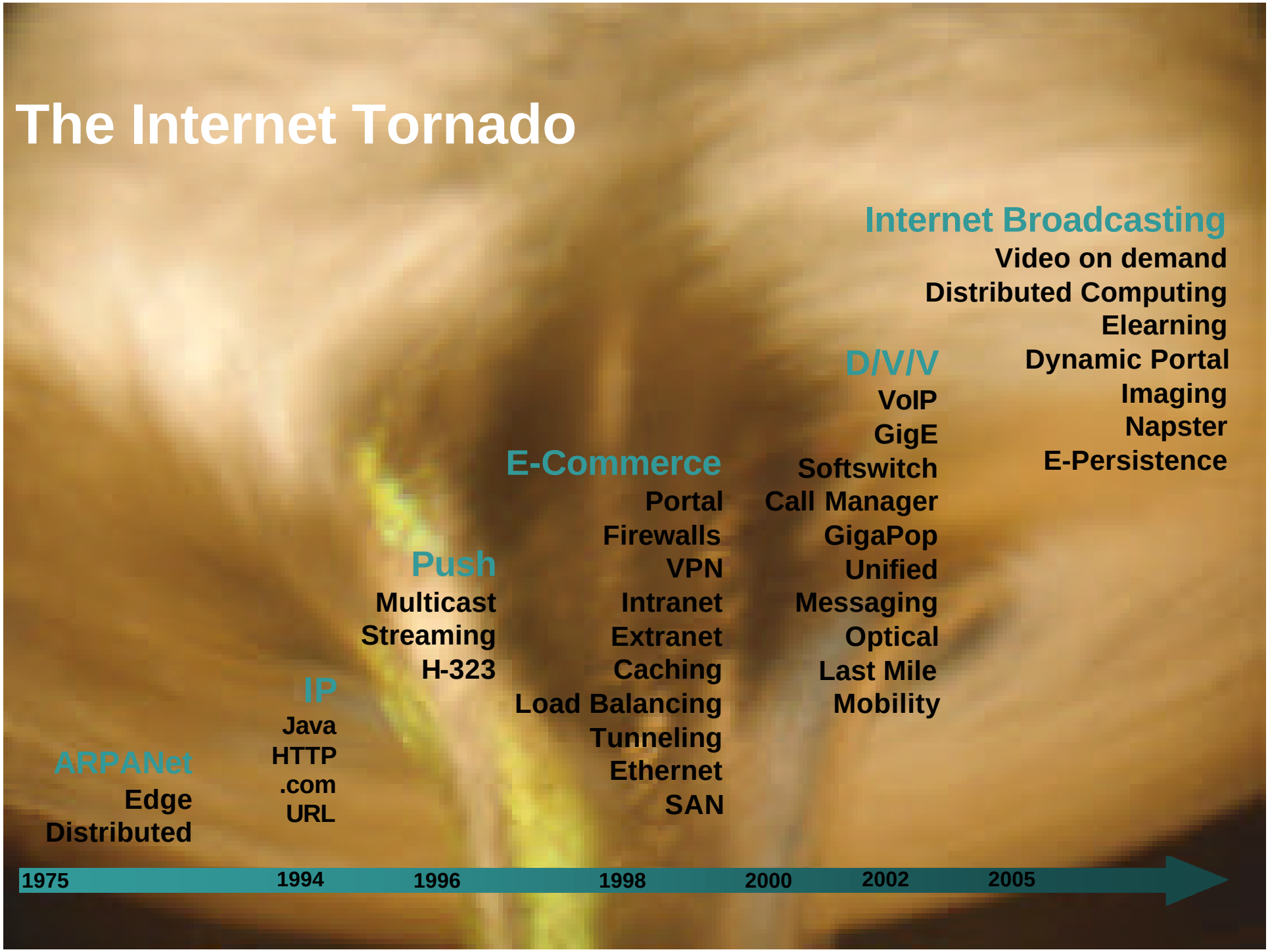
Harald Tveit Alvestrand

IETF Chair

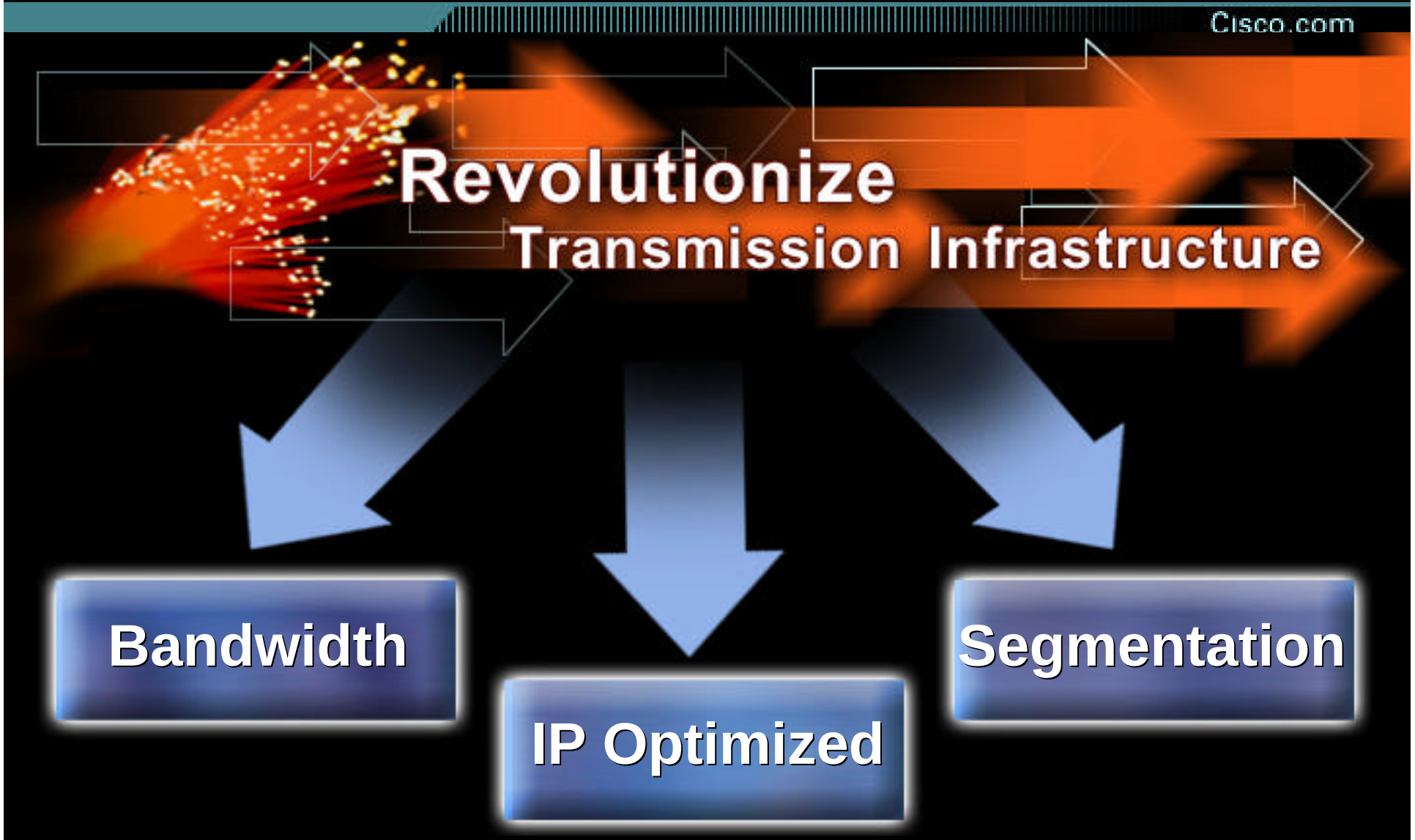
Cisco Fellow

What is the Internet?

- Shared context
- Communications veichle
- Social interaction place
- Information superhighway


The Internet Tornado
Internet Broadcasting
Video on demand
Distributed Computing
Elearning
Dynamic Portal
Imaging
Napster
E-Persistence
D/V/V
VoIP
GigE
Softswitch
Call Manager
GigaPop
Unified
Messaging
Optical
Last Mile
Mobility
E-Commerce
Portal
Firewalls
VPN
Intranet
Extranet
Caching
Load Balancing
Tunneling
Ethernet
SAN
Push
Multicast
Streaming
H-323
IP
Java
HTTP
.com
URL
ARPANet
Edge
Distributed
1975
1994
1996
1998
2000
2002
2005

Optical Networking



Wireless Internet

- Internet—anytime, anywhere
- Internet for everyone

The Internet is Communications

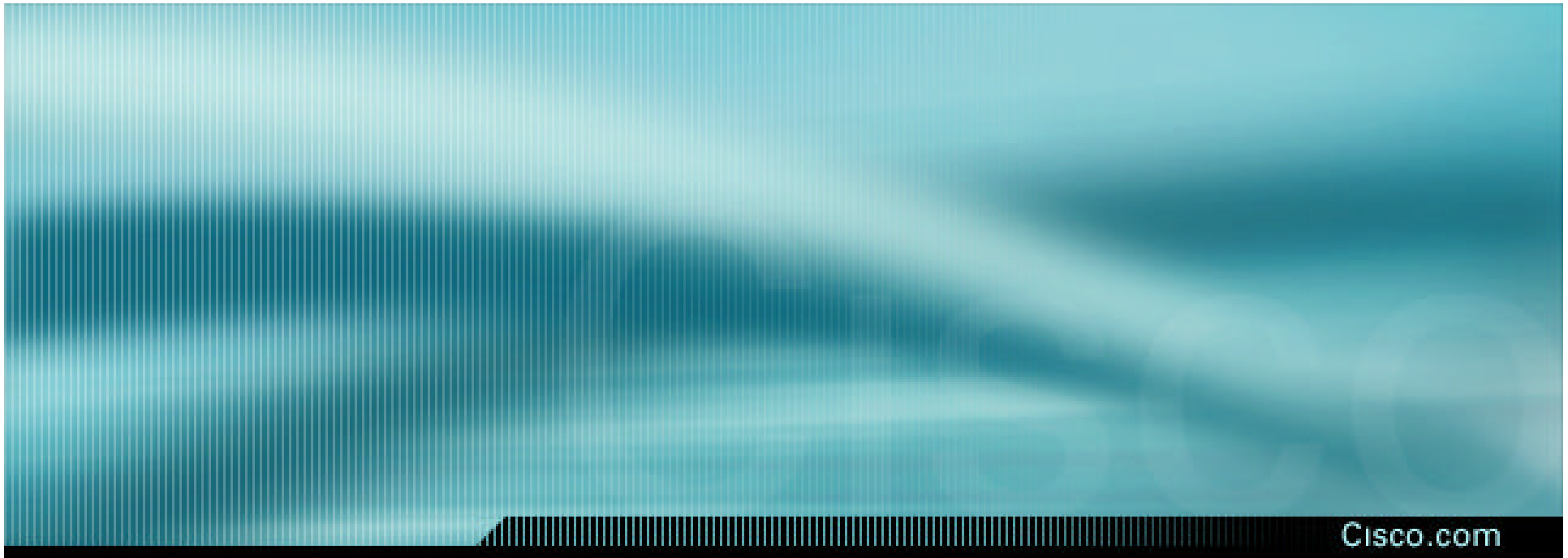
- Business to Consumer
- Government to Business
- Individual to Government
- Friend to Friend

The Internet requires standards

- Defining Common Languages
- Avoiding monopolies and control
- Making it possible to work together

What is the Internet Engineering Task Force?

- Standards for the Internet
- Enabler of communication
- Keeper of ideals
- A Cool Place To Be



IETF process

Fundamental working principle

“We reject kings, presidents, and voting.
We believe in rough consensus and running code.”

Dr. David C. Clark,
Massachusetts Institute of Technology

Membership

- IETF members are people
  - As opposed to nations or companies
- Communications tend to be among people
  - As opposed to working groups, boards, etc.
  - Have trouble understanding “liaison”

Fundamental perspective of enlightened self-interest

- Most of the good people don't work for Cisco
  - Good ideas that help our markets come from everywhere and anywhere
- Growing the Internet is good for all of us
  - A larger Internet creates larger markets.
  - Larger markets create cheaper products.
  - Cheaper products create more end-user value.
  - More end-user value makes the Internet grow.

Two types of documents

- Internet drafts
- RFC - “request for comments”

Internet drafts

- **Most analogous to ITU “contributions” and “working papers”**
  - **Not necessarily work items**
  - **Half of all Internet drafts are simply documents people have chosen to post**
  - **Nine out of ten I-Ds do NOT result in RFCs**
- **Types of drafts**
  - **Working group documents**
  - **Submissions to working groups**
  - **Individual submissions**

RFCs

- Historical archive
- Many kinds of documents
  - Informational
  - Historical
  - Experimental
  - Standards
- Standards
  - Proposed, draft, full
  - Best current practice

Development process

- **Bottom-up**
  - **Working Group charters are developed to support work people want to do**
  - **IESG review to make sure charter addresses important issues and fits with other work**
- **Development process**
  - **Working groups develop**
  - **IESG reviews**
  - **RFC editor publishes**

So what is the IETF doing today?

- Maintaining the current Internet
- Developing the new Internet
- Trying to make the Internet more useful
- Some examples will follow.....

IP Telephony

- SIP is now the dominant call protocol for new products on Internet telephony
- IPv6 and SIP are at the heart of the 3GPP Release 5 mobile telephony protocol suite
- The basic SIP protocols are useful in any Internet context

IP version 6

- Back to a flat Internet
- Addresses for everyone
- Autoconfiguration at the end sites
- Mobile IPv6
- More fun things being worked on
  - V4 interworking, for instance

Security

- Making sure communication happens where we want it to happen – only
- Security configuration is the hardest part of an already hard problem
- WEP showed the cost of not doing a thorough job. Other initiatives show the cost of making the job too complex.

Optical Control Plane

- There's a fiber out there.
- The fiber's got lots of bandwidth.
- Someone's got to tell the stuff at the endpoints how to deal with it.
- The method of telling is called GMPLS.

Aside: Sushi Truck Control

- There's a XXXX out there.
- The XXXX's got lots of YYYY.
- Someone's got to tell the stuff at the endpoints how to deal with it (using IP).
- The method of telling is an IETF standard.
- Why?

Internationalized Domain Names

- Enabling a wider character set in places where we currently use domain names
- Requires support in the client for wider character sets and domain-name decoding
- Lots of issues with copy/paste and so on
- Approved in October 2002

What does the IETF mean for me?

- The Internet is good for you
- Standards enable the Internet
- The IETF enables standards
- Openness means you can see
- Openness means you can be heard

Moving value to the participant

- Traditional telco: Define service, find value, set price.
- Internet: Set price, ship packets.
- An ISP does not know what his customer values about the Internet – and shouldn't
- Empowering the end-user.

Societal effects: The Global Villages

- Anyone can reach anyone
- Groups form that don’t respect geography
- Information exchange doesn’t respect organizational structure
- People can play very strange games.....

Societal: Squeezed Time

- Travelling time is laptop time.
- Home time is dial-in time.
- Electronic deadlines are shorter deadlines.
- The info torrent fragments your world picture
- This makes life faster. But not simpler.

Other Challenges

Role of Regulation

Conflicting National Policies

Intellectual Property Rights

Censorship

Digital Divide

Globalization of Language & Culture

Privacy

What can I do?

- Walk with care on the Internet. Understand what you are doing.
- The reason the IETF is open: You can be heard if you speak up!
- If it is Not Right, *you* are the one responsible for fixing it.


Are You Ready?