Keep it Simple
The Cost of (too many) Standards

Ross Callon
July, 2016
Too Many Options

• Note: Opinions expressed here are the author’s personal opinion

• We are seeing multiple options, multiple ways to do the same thing
  – Diversity in approaches is inevitable and valuable
  – Too many options damages interoperability
  – Beware of creating a “Tower of Babble”

• There are many examples, I will pick on one...
Example: VPNs and Encapsulations

• VPNs must support private addresses
  – Encapsulation is essential

• Connection oriented approach: MPLS
  – Control plane (LDP, RSVP, BGP), OAM (LSP Ping, BFD)

• Connectionless approaches
  – IP in IP; IP in UDP in IP; IP in GRE in IP; IP in GRE in UDP in IP; L2TP; IPsec; MPLS in IP; MPLS in UDP in IP; VXLAN; LISP; …
  – Result: lack of interoperability
A Perspective...

• The Internet is the largest “machine” ever made.
  – Billions of computers and billions of users
  – Perhaps hundreds of vendors
  – Still growing explosively

• No one vendor could have done this

• No one service provider could have done this
A Perspective, continued...

• The Internet exists because of multi-vendor and multi-service-provider interoperability
• This requires REAL, and EFFECTIVE standards
• Many companies and many individuals have done well due to the growth of The Internet
  – This would never of happened without standards
  – This would never of happened if we had too many choices for every standard
What about private nets?

• Do private networks and datacenters need standards?
• Internet technology has revolutionized private networks and data centers
  – Performance / cost (Internet scale has driven high performance)
  – Multivendor interoperability
• This requires effective standards
Summary

• The IETF needs to find a way to avoid frivolous standards

• This can’t be imposed from the top
  – A few IESG and IAB members can’t simplify encapsulations, OAM, security, routing, virtualization, SDN, web applications, ...

• We all need to take up the challenge to do what is best for the Internet and its technologies