

Inventing a New Internet: Learning from Icarus

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Tetherless Access

Past EE380 Talks

- This will be my 3rd talk
- First in the '90s on wireless MANs
- Second, May 2000, 'Networking Tonga from the Ground Up and the Sky Down'

Personal Log

- Native of Detroit
- Left 1970 to SIU Carbondale & World Game
- User of ARPANet in 1974
- Silicon Valley 1976
- Serial Entrepreneur
- Wireless Internet startup in 1990
- Many wireless projects in developing countries

Personal Log (cont.)

- Member of NSF team that brought the Internet to Mongolia in 1996.
- Dubbed 'Broadband Cowboy' by Wired Magazine in 2002.
- Primary mentors: Bucky Fuller & Paul Baran
- Back to Detroit in 2010

Myth of Icarus

- Historical perspective: Start before 19th century
- Icarus framing & narrative courtesy of Mike Liebhold, Senior Fellow, Institute for the Future (IFTF)
- Little is really new...
- James Burke's 'Connections' methodology
- The Adventure Begins...

First Premises

- First comes a technology
- As time passes it becomes more accessible/
affordable
- “Good Enough” is acceptable for most folks
- More than we know is always happening
under our ‘radar screens’
- Wireless is one of our technologies which is
most akin to magic (Clarke’s 3rd Law)

As fast as it gets



Telegraph - 1830's



From 'Foot Speed to
'Light Speed'

Early “Wire Head”



The Victorian Internet

Tom Standage

Subterranean Telegraph

Example of startup proposal to the Congress in 1854

<https://dl.dropboxusercontent.com/u/52479790/>

Telegraphic Networking

- Access
- Infrastructure
- Networking Protocol Suite
- Internetworking
- Costs

Telephonic Network

- Deployed in the latter part of the 19th century
- Similar access and architectural issues as telegraphic
- Major difference was access to network provided by a 'network access device' deployed at the home or business

First signal across Atlantic - 1901

St. Johns,
New Foundland



Cornwall,
England

**Wireless Commercial
Service started in 1903**

Early “Wireless Heads”



**“From Lightspeed to
Lightspeed”**

Wireless Networking

- Access
- Infrastructure
- Networking Protocol Suite
- Internetworking
- Costs

Commercial Internet

1995

'From Lightspeed to Warpspeed'

Internet Networking

- Access
- Infrastructure
- Networking Protocol Suite
- Internet networking
- Costs

'Internet'

'You keep using that word and I don't think it means what you think it means!'

At only 45 years old... the Internet will be laid to rest in 2014. And Silicon Valley is thrilled. Because they know... *The Economist* believes the death of the Internet "will be transformative."

In fact, the CEO of Cisco Systems -- one of the largest tech companies on the planet -- says somebody's going to bank "\$14.4 trillion in profit... from one concept alone." And this FREE video gives you what you need to capitalize on the little-known company behind this concept...

**R.I.P Internet -
1969-2014**

What the Internet Is, and Should Continue To Be

By David P. Reed

<http://www.reed.com/blog-dpr/?p=132>

Second Curve Internet

- Free Network Foundation (FNF) - Innovation under Austerity
- New America Foundation - Open Technology Institute (OTI) - Commotion Project

Darknet

- Another 'loaded' word...
- More going on there than you're aware
- "All for one and one for All" protocols
- Innovation w/o permission
- Example of second curve Internet

Person of Interest

- Top rated CBS TV show
- Produced by JJ Abrams (Lost, Fringe)
- Using approach pioneered by Roddenberry with Star Trek
- Explores how a global surveillance state might evolve
- NSA on a trajectory to build 'The Machine'

Person of Interest

"You are being watched. The government has a secret system: a machine that spies on you every hour of every day. I know, because I built it. I designed the machine to detect acts of terror, but it sees everything. Violent crimes involving ordinary people; people like you. Crimes the government considered 'irrelevant'. They wouldn't act, so I decided I would. But I needed a partner, someone with the skills to intervene. Hunted by the authorities, we work in secret. You'll never find us, but victim or perpetrator, if your number's up... we'll find you".

Questions?