

UltraBroadBand Drivers

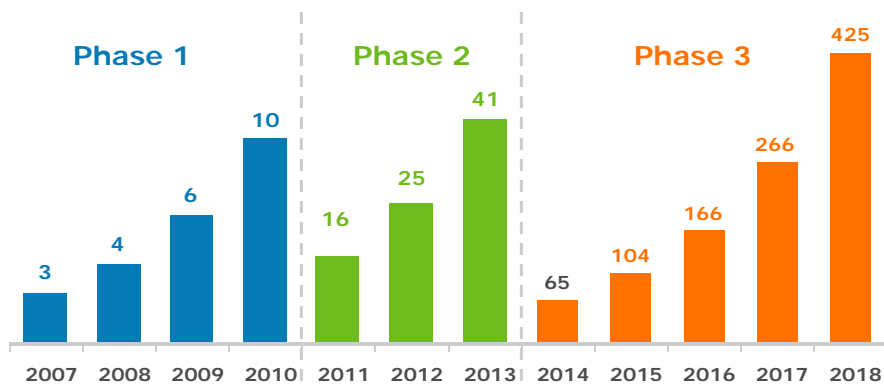
Dr. David Belanger
Chief Scientist;
V.P. Information, Software & Systems Research
AT&T Labs



© 2007 AT&T Knowledge Ventures. All rights reserved. AT&T and the AT&T logo are trademarks of AT&T Knowledge Ventures.

Driven by Video and Applications, AT&T Backbone Traffic is Projected to Grow 60% Annually

Exabytes per year (1 Exabyte = 1 million Terabytes)

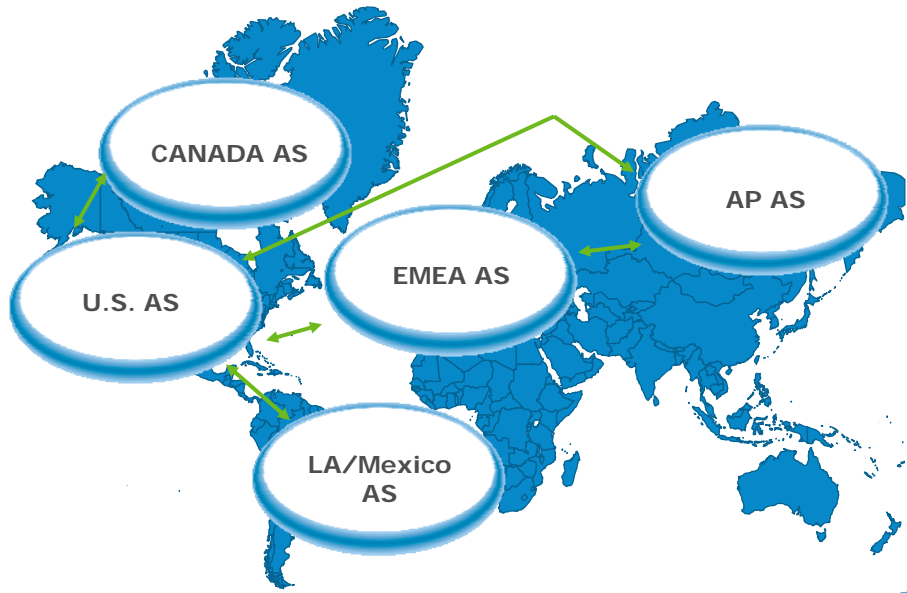


Page 2

Page 2



AT&T Global Network



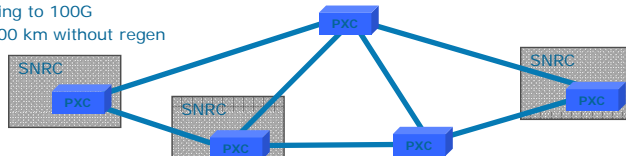
Page 3



AT&T's Global Photonic Network

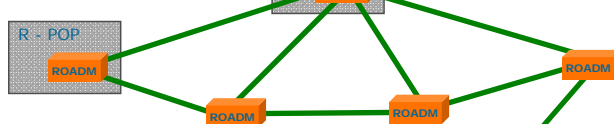
Ultra-Long Haul Backbone

40G moving to 100G
80 | - 1500 km without regen



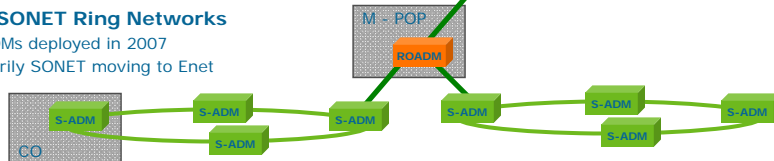
Regional Optical Network

10G moving to 40G
40 | 1000 km, 8 degrees



Metro SONET Ring Networks

ROADMs deployed in 2007
Primarily SONET moving to Enet

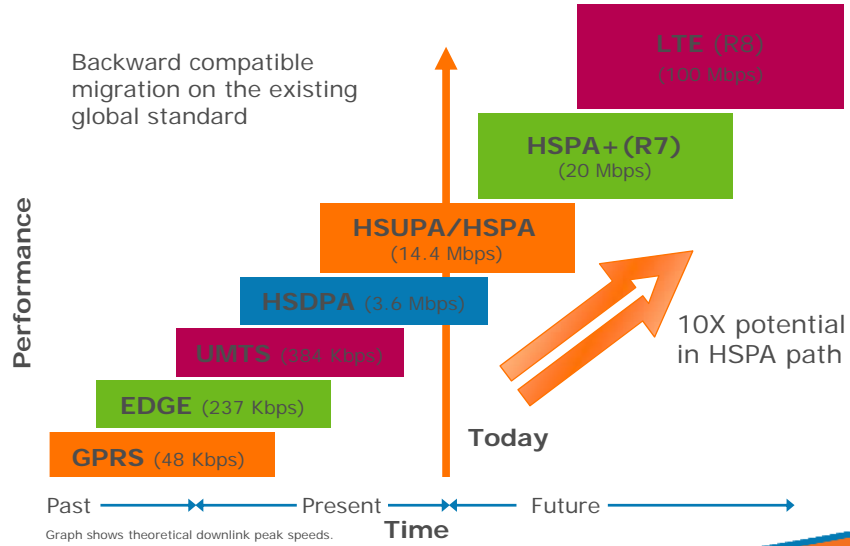


Page 4



Expanding Ubiquity of Mobile Broadband

More Efficient Path to 4G for GSM Providers

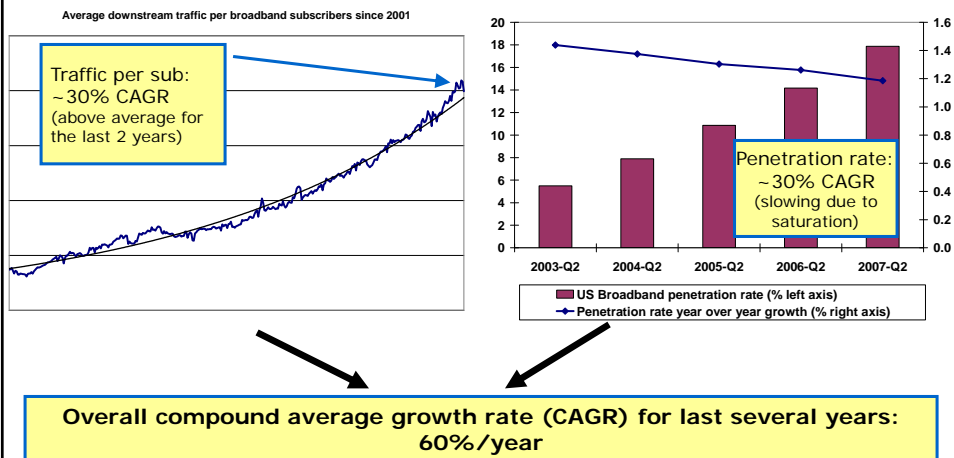


Page 5

Page 5



Two Components of Internet Growth: Penetration Rate & Traffic per sub



Page 6



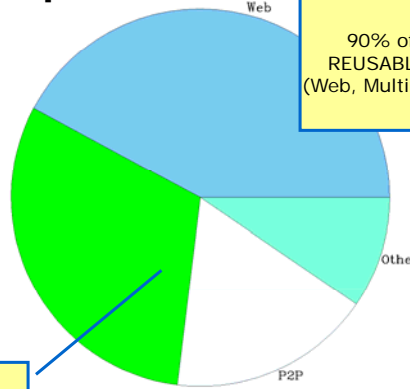
Current Application Mix on the Internet (U.S.)

Busy hour is 1/3 Explicit Multimedia

Web: HTTP traffic with a non-video mime type.

Explicit Multimedia: Video/Audio HTTP traffic and streaming video protocols such as RTSP, RTMP.

P2P: File Sharing applications such as BitTorrent, Gnutella, etc. (at least 50% video: next slide)



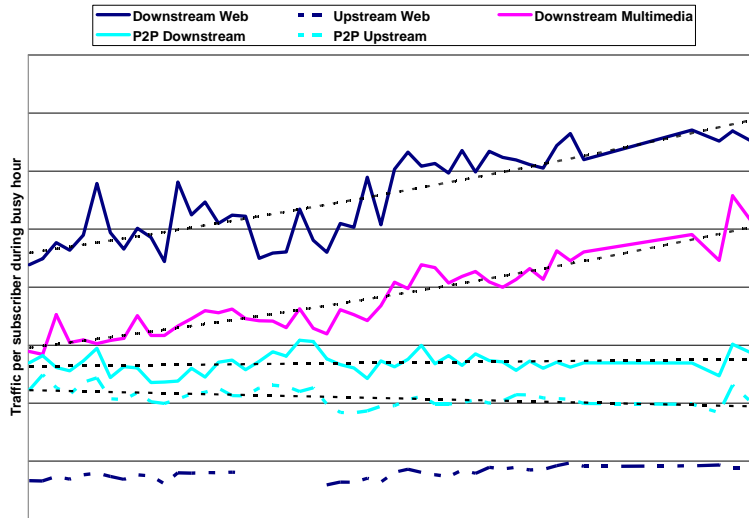
90% of total is REUSABLE content (Web, Multimedia, P2P)!

Explicit Multimedia: already 31%



Content Growth over the last Year

Multimedia/sub: +76% CAGR

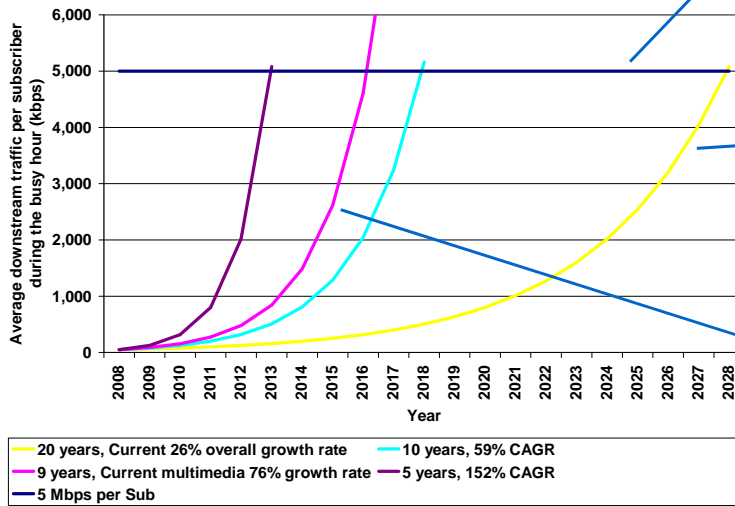


Strong growth of Multimedia and Web traffic per subscriber. Multimedia: +76% CAGR



Potential video content explosion

How much? How fast?



Page 9

Target: 50% of households simultaneously watching a 10 Mbps HD video stream = 5 Mbps av./sub

Target is reached in 20 years at current overall growth rate

If current multimedia growth continues, target is reached in 9 years and the overall growth will be 3 times faster

Video Everywhere

- Mobile Video
- Portable Video
- Desktop Video
- Standard Definition Video
- High Definition Video
- Immersive Video
- Live and On-Demand Enterprise Broadcast Video
- Internet Video Streaming / Publishing
- Thin Client Video Conferencing
- Digital Cinema / Networked Theatre
- Virtual Reality



Page 10

