Responding to the Exaflood

At a session in New York last month, the Internet Innovation Alliance highlighted the possibility of dire consequences if network investment continues to lag traffic growth; it seeks tax breaks and regulatory relief.

By Lawrence Kingsley ■ *Contributing Editor*

There is little disagreement that Internet traffic is approaching what Brett Swanson and George Gilder have called an Exaflood of data.

According to Deloitte Telecommunications Predictions, Internet traffic doubles every 12 to 15 months. The Associated Press reports that YouTube users download more than 100 million videos a day. Professor Andrew Odlyzko of the University of Minnesota calculates that if YouTube traffic were converted to HDTV format, the downloads would equal all other traffic traveling on the Internet in 2007. Current Netflix traffic, Odlyzko says, would amount to 5.6 exabytes per year if Netflix videos were delivered online in high-definition Bluray format – about 10 percent of current IP traffic in the US. The *San Francisco Chronicle* calculates that by 2010, only 20 typical homes will generate as much network traffic as the entire Internet produced in 1995.

IIA WARNS ON TRAFFIC GROWTH

To warn of the coming Exaflood and to get some idea of how high the Internet "waters" will rise, the Internet Innovation Alliance (IIA) held a conference in New York last month moderated by Bruce Mehlman, former Assistant Secretary of Commerce in President Bush's first term.

Odlyzko, who has long resisted being an alarmist, said Internet traffic is growing at 50 percent per year, outstripping the mere 19 percent annual growth in Internet infrastructure – storage, server farms, and transmission facilities. He said the results could be disastrous.

Indeed, there was consensus among Mehlman's panelists that at the moment, the telecom industry is not making necessary investment in plant and equipment despite business opportunities for companies that can exploit the new Exaflood demand for goods and services.

Not only the lower expected return on investment for telecom, but also the memory of the Internet bubble, the uncertainty of new revenue models, and what the IIA claims is overtaxation compared to other industry could be holding back timely network expansion. The investment may yet arrive, albeit closer to the point of gridlock than would be ideal for those who are pushing new broadband-enabled services.

The Internet would crash if all of today's TV traffic went out in IP packets, noted Odlyzko. Other speakers echoed him. Analyst Craig Moffet of Sanford Bernstein concluded that the cost of infrastructure improvements to handle the Exaflood does not remotely match revenue currently generated by the Internet. ROI is still below the cost of capital for Comcast, he said.

COMPETITIVE RETURNS NEEDED

The ROI for Verizon "is horrible," he added, although this magazine has reported that Verizon itself expects to be EBITDA-positive this year on FiOS and profitable next year. That means the issue is less a matter of failure to generate profits than of competing telecom investments (such as in mobile communications) offering an even higher potential return.

Revenue per show on Hulu (a major video streaming service that is a joint venture of NBC Universal and News Corporation) is no more than one eighth of what content providers are getting through traditional distribution, Moffet said, and cable TV can no longer keep raising the cost of carriage billed to affiliates.

Gary B. Smith, CEO of Ciena, a supplier of communications network infrastructure, thus found that networks today are under stress. There is congestion in the network cores and the industry as a whole is grossly underestimating capacity required, he said.

Michael J. Kleeman, founder of the former CLEC Aerie Network and now on the faculty of the University of California at Sacramento, noted problems at peering points. You "find the nearest competitor and dump [traffic] on them and let them deliver it," he complained.

There seems to be no easy fix for the lack of Exaflood preparation. What consumers are willing to pay, whether and how much the Internet should be regulated, and what we can expect both near- and long-term in marketplace behavior are likely to engage public debate even as the events unfold.

But panelists predicted increasing pressure to abandon all-you-can-eat models for volume-based pricing. Faith in net neutrality is a countervailing trend, but AT&T has obtained clearance from the FCC to prioritize traffic from U-verse, and others have said fiber-originated data should be in a separate class from copper and cable TV traffic.

Said Intelligent Communities Forum co-founder Robert Bell last month: "Issues of the Exaflood have not yet made it onto the radar screen of most people and organizations who are users of broadband rather than carriers of broadband or major providers of content over broadband.… It is natural that the first parties concerned would be the network scientists and engineers who have to keep the Net running." **BBP**

About the Author

BBP contributing editor Kingsley has been covering telecom for more than 20 years. He can be reached at to22lk@aim.com. You can watch a Webcast of the entire conference at www.wsw.com/webcast/iia/.