Mounting Peer-to-Peer Pressure for Comcast

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Comcast's traffic-filtering efforts are the subject of FCC complaints and a lawsuit. At issue: ISPs right to control the flow of data over their networks

by Peter Burrows

Comcast (CMCSA) is overstepping its bounds when it comes to controlling the flow of certain kinds of traffic over its high-speed Internet system. That's the assertion made by a growing number of consumers and advocacy groups fighting practices they consider illegal via the courts, regulators, and some controversial, behind-the-scenes methods for masking Internet content.

The brouhaha followed an Associated Press report that Comcast has been interfering with particular sorts of bandwidth-hogging traffic. Within days of the Oct. 19 story, consumer advocacy groups lodged a complaint with the Federal Communications Commission to force Comcast to stop. And on Nov. 13, San Francisco Comcast subscriber Jon Hart filed a class action claiming a litany of charges, from breach of contract to computer fraud. The suit demands that Comcast end the practice and pay damages to subscribers who got less than the "mind-blowing speeds" Comcast advertised.

At issue is how Comcast, under Chief Executive Brian Roberts, treats peer-to-peer traffic, so named because it is passed among millions of PCs owned by people who agree to share their bandwidth rather than by way of a company's servers. Comcast denies it has blocked any traffic outright, but admits to using "network management" techniques to handle the rising tide of peer-to-peer traffic, and thereby maintain service for all of its other customers. "What we're doing is pro-consumer, because we're protecting the many users whose experience is degraded by heavy peer-to-peer congestion," says Comcast spokesman Charlie Douglas.

LEGITIMACY OF CONTENT FLOW
The Comcast controversy strikes at the heart of some of the biggest debates engulfing technology, including how much control network operators should have over the flow of information and entertainment over their systems and how aggressively they ought to monitor content and adjust delivery speeds. Comcast's moves reflect a basic assumption that peer-to-peer networks are primarily used to send pirated material, including songs, TV shows, and full-length movies. Specifically, charges have focused on Comcast's throttling of files sent using a peer-to-peer standard called BitTorrent that by some measures is as popular for sending video today as Napster (NAPS) was for sending music in the late 1990s.

But reaching conclusions over the fairness of Comcast's moves and the legitimacy of peer-to-peer content won't be easy, since not all peer-to-peer traffic is made up of ripped-off tunes and flicks. Companies such as Joost, Vuze, and even BitTorrent—whose founder, Bram Cohen, created the original peer-to-peer protocol—have struck deals to use peer-to-peer technology to distribute programming by dozens of mainline content owners such as CBS (CBS), PBS, and Viacom's (VIA) Showtime. These content owners see peer-to-peer techniques as a promising means to go from today's grainy YouTube-quality content to deliver full high-definition resolution to consumers via the Internet.
What's more, many experts contend that Comcast and other network owners will never succeed in accurately filtering out peer-to-peer traffic, and certainly not just the illegal stuff. Files can be easily disguised to avoid detection with a few programming tricks—say, adding some descriptive bits to make a movie clip look like an e-mail.

**BLOCKED BY ENCRYPTION?**

Some players go further still. When it began to see increased filtering by Internet service providers (ISPs) such as Comcast a year ago, Vuze started including encryption code in its software that essentially makes it impossible for any network—or potentially a movie studio or even law enforcement—to know the nature of what's traveling over the Internet, says CEO Gilles BianRosa. Today, Vuze uses only a thin layer of encryption, enough to throw off Comcast's bit-sniffing technologies. Think of it as the software equivalent of Groucho Marx glasses, rather than, say, plastic surgery and admission into a witness protection program.

However thin the disguise, the inclusion of encryption in a technology used by millions could make peer-to-peer networks an even greater haven for the distribution of pirated or other illegal content, especially if peer-to-peer companies were to move to more industrial-strength versions as ISPs take countermeasures.

**NET-NEUTRALIZING EFFORTS**

All of this is creating fodder for Net neutrality advocates, who argue that Comcast's methods show how big network owners can use their pipes unfairly. "Vuze provides a very concrete example of the kind of harm [throttling by ISPs] can create," says Fred van Lohmann, a staff attorney for the Electronic Frontier Foundation, which has also criticized Comcast's actions. "Too many people have relegated this to piracy, when even more it's about the future of innovation. If you're trying to build a video service that might compete with Comcast, it's very difficult to do that when they're altering the network and not telling you how they're doing it."

Even BianRosa thinks there's a better way. "We think the game of cat and mouse is the wrong way to go about things," he says. That's why Vuze filed its own petition to the FCC on Nov. 14. The goal is twofold. First, it wants the FCC to set rules about what ISPs can and can't do to manage, filter, or shape traffic over their pipes. This includes a requirement that ISPs disclose their policies and tactics publicly. He also hopes the petition for rulemaking will spark increased conversation between ISPs and the peer-to-peer crowd, whose technologies suck up as much as 50% of all U.S. bandwidth, by some accounts. "This isn't just a regulatory approach," he says. "We intend to have a constructive dialogue with the ISPs. It's a case of, 'Help us help you.'"

BianRosa believes it's time for ISPs to embrace—rather than demonize—the leading peer-to-peer players. As peer-to-peer traffic grows apace, ISPs will increasingly be forced to throttle delivery speeds or consider video fingerprinting techniques that anger consumers, lead to lawsuits, and create PR imbroglios. Privacy advocates already are crying foul over news that AT&T is considering use of one such fingerprinting system (BusinessWeek.com, 11/7/07).

**ADDRESSING NETWORK STRAIN**

No doubt, the peer-to-peer crowd is working hard to become more legitimate, so as to find profitable business models that let them make the most of their innovations. Case in point: Vuze. It was founded by the engineers who created Azureus, a BitTorrent program that is the most popular tool for sending video files—many of them pirated—over peer-to-peer networks. This January, the company launched the Vuze site, for the express purpose of using the Azureus tool to distribute content licensed from content owners.

So far, some 13 million people (more than 2 million in October alone) have downloaded the Vuze player, and the pace is accelerating. The site offers mostly obscure fare to appeal to the college crowd, such as sci-fi fantasies and outdoorsy reality shows featuring babes in bikinis. But the deals with Showtime and PBS show that mainstream media
is catching on.

BianRosa says there are plenty of ways for the Vuzes and Comcasts of the world to work together. "There are techniques we can implement with them to address the strain on their network," he says. An ISP like Comcast could use the same software tools Vuze uses to find the quickest route between all those PCs. That could help an ISP minimize the strain on its own pipes, right down to shifting prime-time traffic onto peer-to-peer networks to make sure delivery of Comcast's own exclusive content isn't degraded at all.

But that's going to be a hard sell to network operators that also sell TV services, and could be threatened by anything that aids in the delivery of free video services over the Internet. The Comcast controversy is unlikely to be settled amicably any time soon.

Burrows is a senior writer for BusinessWeek, based in Silicon Valley.

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