

Welcome to the Gigabit Age

By Steven S. Ross ■ *Broadband Properties*

Google's announcement in early February that it is looking for municipal partners to build some "trial" 1 Gbps fiber-to-the-home open-access networks serving 50,000 to 500,000 households shook up the industry. It also caught the notice of the Federal Communications Commission, which is on track to miss (by at least a month) its February 17 deadline for release of a national broadband plan.

The idea benefits Google – and, at least in the short term, consumers lucky enough to get the service. It also gets more of the network-building industry back to work. As a bandwidth hawk, I applaud it. There's no question Google can afford it. At \$700 a dwelling unit passed (Google says it can do it for less), 50 percent take rate (the FTTH average) and \$300 to wire a customer's home, a 500,000-household build would cost \$425 million for the network itself. At \$400 a year per customer gross profit, that's \$100 million a year – more than enough to cover overhead and cost of capital and make a good profit. And, of course, Google has the money in the bank. In fact, Google has enough money in the bank to build out to 10 million households. Presumably, its "partners" would add to the kitty.

Some key points:

- Google *has* to do this, not simply because it is pushing cloud computing for the masses. Google had about \$22 billion in revenue last year, almost all from advertising. This is about half of all revenue from Internet advertising in the United States. Regulators have taken notice. If Google is going to grow, the growth has to come from other activities. Sources say that the gigabit initiative comes right from the top – co-founder Sergey Brin. We believe it, despite the fact that Google's ad-supported free muni Wi-Fi went nowhere beyond its headquarters town, Mountainview, Calif.
- Google has clearly been shopping for technology. Calix, Occam and others have been shipping optical network terminals (ONTs) with 1 Gbps capacity in both directions simply because the added cost is so low that telcos and other ISPs have been willing to pay it. Occam alone says it has shipped 100,000 1 Gbps ports. PacketFront announced end-to-end 1 Gbps in January. Huawei is supplying Singapore with a Gbps network that is well along to meeting its 2013 completion deadline.
- Google's online application form (at www.google.com/appserve/fiberrfi) looks similar enough to the Round 1 stimulus application that many unsuccessful entrants in the stimulus lottery will find it easy to port their projects to Google's requirements.
- Qwest, whose stock has been falling for months, is toast. Here's a competitor that could build out all Qwest's broadband-starved urban areas in the next few years. Neither AT&T nor Verizon is willing or able to buy Qwest as is, so Google emerges as one of the few thin hopes people in the Qwest service area have for decent broadband.
- Verizon can match Google's network speeds with FiOS, which has enough backhaul capacity to deliver 1 Gbps, although it will have to swap out many of its older ONTs. Many smaller telcos can match Google as well, as long as their on-ramp connections to the national network aren't too expensive – but fortunately, the focus of the initial group of stimulus funding awards has been on building the middle-mile links that will reduce the costs of these

connections. Cablecos and AT&T, by contrast, will be under enormous pressure to upgrade their networks.

One flaw in Google's plans: Even though there is no question that open-access networks are more likely to make big profits in the long run than are the walled gardens that major telcos and cablecos have built in the United States, they face hurdles in getting started. Yes, Google itself is riding Verizon's rails and has collocated in Verizon central offices along with mutual partner Akamai. But in the United States, pure open access has not worked well at all. The incumbents control so much video content that new open-access nets have had to create their own in-house video services to compete.

Smaller telcos see plenty of interesting new services they'd like to offer – distance learning, telemedicine, teleconferencing and so forth – but do not have the staffs to manage them all. An industry to aggregate myriad third-party services is just being born now.

Our forecast: Many of the big incumbents will try hard to sabotage this project at the state level – the federal government is too smart to fall whole-hog for the incumbents' short-term agenda. And they will succeed in many cases. They spread a great deal of money around the dung heaps that politicians have to wallow in to collect funds for elections. And thanks to the Supreme Court's utter "brilliance" in allowing corporations to marshal unlimited funds to pull the politicians in line, they can now appeal directly to a gullible public.

But five years down the road? All the incumbents will be paying to ride Google's open-access nets. And Google could have far more than 500,000 households hooked up. **BBP**

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