

What Do You Do With the World's Fastest Internet Service?



The Google Fiber Space showroom in Kansas City, Mo.

Courtesy of Google

One afternoon in January, I went to visit some Google employees who'd offered to show me one of the company's latest and greatest innovations. This isn't unusual: I live about 10 minutes from Google's headquarters, and I regularly stop by its campus to see its cool new stuff. This time, though, my trip involved two flights, a lengthy layover, and a suspicious wife: "Why do you need to go to *Kansas City* to write about Google?"

It was a good question. In March of 2010, Google announced its intention to build super-fast fiber-optic Internet service in “a small number of trial locations across the United States.” A year later, after receiving more than 1,000 applications from cities and towns across the country, Google chose Kansas City as its first location. Last November, Google began installing service in people’s homes. For \$70 a month, the company offers Kansas City residents a 1-gigabit Internet line—the fastest home Internet service available anywhere in the world, about 150 times faster than the average American broadband speed of 6.7 Mbps. (You also get 1 terabyte of online storage as part of the deal, something Google normally sells for \$50 a month.) For \$120 a month, you get the 1-GB line plus cable-like TV service, as well as a Nexus 7 tablet that you can use as your remote. There’s also a “free” plan: After you pay a \$300 construction fee—which you can split into 12 payments of \$25—Google will provide your home with a 5-Mbps Internet line for “at least seven years,” and probably indefinitely. (Legally, the company needed to provide an end date for service.)

These are amazing services at unbelievable prices. For about the same fee that many Americans currently pay for cable, Google is offering Internet speeds that, until now, were available only to big companies for thousands of dollars a month.

Therein lies the mystery. Google’s gigabit initiative, called Google Fiber, has sparked a round of questions across the tech industry. Is Google looking to become an Internet service provider? Does it simply want to spur other ISPs into providing faster service? And why wire Kansas City rather than, say, Silicon Valley or New York? And, finally, why gigabit Internet—what does Google expect people to do with the world’s

fastest broadband service?

In this piece, I'll focus on the last two questions: What has it been like for the people of Kansas City to live and work with the world's fastest Internet? In my next column, I'll examine Google's strategic interests in Fiber—why is the search company building its own Internet lines?

One of the first places I visited in Kansas City was the Fiber Space, a lavish showroom that Google built to show what's possible with a 1-GB Internet line. (The space is on State Line Road, which divides the Missouri and Kansas sides of Kansas City; last year Google began deploying Fiber on the Kansas side, but this year it will launch service to houses on the Missouri side, too.) The Fiber Space is an odd place—an effort to render visible and fun something that you can't really see. It looks a bit like a futuristic Ikea, with TVs, laptops, and tablet computers tastefully arranged in several stylishly decorated mock living rooms. (If, as rumored, Google is thinking about building retail stores of its own, I bet they'll look like the Fiber Space.)

At Fiber Space, I sat beside Carlos Casas, one of the company's community outreach managers, on a couch in front of a big TV connected to a laptop. To prove that we were connected to a real Fiber line, one of Casas' assistants loaded up Google Fiber's speed test page. A few seconds later, we saw the astounding results: The computer was getting 938.24 Mbps download speeds, and uploads were at 911.67 Mbps. By comparison, my AT&T U-Verse home Internet line—which costs me about \$60 a month, only slightly less than Google Fiber's 1-GB plan—gets downloads of about 22 Mbps and uploads of 3 Mbps. Google's download speeds are 42 times faster than mine and its uploads are 303

times faster. When I saw those numbers, I had to stifle a few tears.

Casas' assistant pulled up a high-definition video on YouTube. It started playing immediately. Then he opened another browser tab and launched another 1080p video. Then another and another and another—he kept going until he had five videos playing simultaneously. (He'd muted the sound.) Next he clicked on each tab and fast-forwarded each video to a random spot in the middle. They started playing from that spot instantly, with none of them sputtering or slowing in any way. "I hate racing that little gray bar when I'm watching videos on YouTube," Casas said. "You're always like, 'Oh, it's going to catch up, it's going to catch up!' With this, it's never going to catch up. Your video isn't going to stop playing."

To be sure, this was pretty cool. And yet it wasn't mind-blowing. Indeed, it felt a little underwhelming. After all, who needs to play five HD videos at the same time? If that's Google's best demo of its superfast service, what does it suggest about what regular people will do with it? What's more, the demo didn't even begin to approach the limits of Google Fiber—with five HD videos playing simultaneously there were still hundreds of megabits left on the pipe. When I got back home a few days later, I replicated the same test on my home broadband line and experienced only a few hiccups.

And this gets to the fundamental problem with Google Fiber: It's totally awesome, and totally unnecessary. During my time in Kansas City, I spoke to several local businesspeople, aspiring startup founders, and a few city boosters. They were all thrilled that Google had come to town, and the few who'd gotten access to the Google pipe said they really

loved it. But I couldn't find a single person who'd found a way to use Google Fiber to anywhere near its potential—or even a half or quarter of what it can do. It was even difficult to find people who could fully utilize Google Fiber *in their imaginations*. As hard as people tried, few could even think up ways to do something truly amazing with the world's fastest Internet.



Google Fiber installation van

Courtesy of Google

This was true even of Google employees, both the folks on the ground in Kansas City and the execs who are managing Google Fiber from Mountain View, Calif. “What can you do with Google Fiber?” I’d ask, and I’d often get an answer like, “Anything you want.” Technically, this is true. It’s also singularly unhelpful. During my time in Kansas, when I finally got some free time with a machine connected to Google Fiber, I couldn’t find any better answers for what I should do with it. My first instinct was to try out all the things that strain today’s Internet lines—I loaded up a lot of Web pages, I tried to stream lots of videos, and I even attempted to illegally download some movies. Those things worked perfectly well. And then I didn’t know what else to do. I had finally found the broadband nirvana I’d always dreamed about. So why was I so bored?

The inability to anticipate the utility of Google Fiber is understandable. Thomas Watson, the legendary IBM CEO, is often quoted as having said, in 1943, “I think there is a world market for maybe five computers.” Similarly there’s a story that Bill Gates once declared that “640k is more memory that anyone will ever need.” These are **both mis-**

[quotes](#), but they each get at the way today's technological needs can blind us to tomorrow's possibilities. After all, it was true that, in the 1940s, most people didn't need a computer. In order for us to get to a time when computers could be personal machines, we had to enter a cycle in which computers would gradually offer more and more utility, creating wider demand, which would in turn prompt more uses for PCs, and so on and so forth until we all had Windows.

Gigabit broadband is like that. For it to become truly useful and necessary, we'll need to see a long-term feedback loop of utility and acceptance. First, super-fast lines must allow us to do things that we can't do with the pedestrian Internet. This will prompt more people to demand gigabit lines, which will in turn invite developers to create more apps that require high speed, and so on. What I discovered in Kansas City is that this cycle has not yet begun. Or, as *Ars Technica* put it recently, ["The rest of the Internet is too slow for Google Fiber."](#)

But I also saw small signs that people are beginning to think about ways to get this cycle rolling. Unbeknownst to most techies in Silicon Valley, [Kansas City has a thriving startup scene](#), and a few local entrepreneurs have been trying to attract smart people to the city to make use of Google Fiber. Ben Barreth, a Web developer, recently purchased a modest house in one of the first neighborhoods to be wired with Fiber. He calls it the ["Home for Hackers,"](#) and he's letting smart techie types from outside the city live in the house rent-free for three months.

I spent a day at the Hacker Home talking to two of its current residents. One of them, Synthia Payne, is a middle-aged singer who's working on a company called Cyberjammer, which would let musicians in different

parts of the world jam together live, in real time. The other resident, Nick Budidharma, is a gamer who just graduated from high school and is starting a multiplayer game hosting service. Both of their firms require fast Internet, though hardly gigabit speeds. Still, they said that after living with Fiber, extra-speedy broadband had become integrated into their lives.

For instance, both Payne and Budidharma find themselves relying more on cloud-based services like Dropbox to store their files. Budidharma says that he doesn't spend as much time thinking about which pictures to upload to Facebook, as there's almost no upload delay—"I just throw them all up there." He's also noticed a huge improvement in multiplayer games. In the first-person shooter *Counter-Strike*, "there's a thing called peeker's advantage—if you quickly peek around a corner that someone else is already looking down, the person with the better latency will see the other person first," Budidharma says. With Google Fiber, that "can be close to a 1-second advantage—I can see people a little faster than they can see me. And I've noticed that I've been consistently scoring five or 10 kills higher than I normally do."

Another company that's looking to make use of Google Fiber is [SightDeck](#), a firm started by a couple Hollywood effects gurus that's working on a product to allow people in different parts of the world to meet in a single, virtual workplace. It works like this: I stood in front of a projection screen in Kansas City, while a SightDeck employee stood in front of a similar screen in Los Angeles. Two cameras connected to high-speed Internet lines were aimed at each of us. Then, Clynt Wynn, SightDeck's user experience lead, turned the system on. Now the remote employee was projected on the screen next to me, and I was projected on the

screen next to him. What's more, superimposed on the screen behind us was an image of Google Earth. When either of us reached out to touch the screen, we could interact with the planet—when we swiped the screen, the Google Earth image would scroll or zoom. (Here's a [video demo of the system](#).)

SightDeck, then, is something like a life-size video call with no lag. It was pretty cool, but in truth even this didn't make full use of Google Fiber's power. Indeed, after the demonstration, Wynn pointed out that the building where SightDeck's office is located does not yet have access to Google Fiber. The demo I saw was running on a conventional high-speed commercial broadband line. SightDeck would be even better with Fiber, but it certainly didn't need a gigabit to function.

By the end of my time in Kansas, I'd thus resigned myself to never seeing the full potential of Google Fiber. My next stop would be Mountain View, where I'd try to figure out if Google knows what to do with it.