GOOGLE FIBER

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INTRODUCTION

Google Fiber is Google's fiber-to-the-premises service in the United States, providing broadband internet and television to a small and slowly increasing number of locations.[1] The service was first introduced to Kansas City, Kansas,[2] and is being rolled out to Kansas City, Missouri, with plans for expansion to several other Kansas City area suburbs, as well as Austin, Texas, and Provo, Utah. In February 2014, Google announced they had chosen another 34 cities in 9 metro areas as candidates for future expansion.[3] In January 2015, Google selected Atlanta, Charlotte, Raleigh, Durham, and Nashville as the next markets that will receive Google Fiber deployments.

Google Fiber has been around for a little while, but the concept is still   fairly new to many because the service is not yet offered nationwide. Google Fiber is an advanced fiber optic network designed to deliver Internet speeds up to 100 times faster than standard broadband connections. The Fiber network also offers:

- HD television programming with less compression (meaning clearer pictures)
- DVR (digital video recording) with up to eight simultaneous programs and 2 TB of storage
- Apps for more control over television and Internet

The process promises to be long, however, because Google needs to erect the necessary infrastructure in all cities to which it will deliver Fiber services. Fiber is currently available on just a few U.S. cities, but Google has plans to take the service much further.

THE ROLLOUT

Google promoted the Fiber rollout as a fun bonding experience for communities, encouraging those residents who wanted to receive Fiber to become its unpaid ambassadors, going out on

"Fiber Rallies" to convince their neighbors to pre-register, even if those neighbors didn't necessarily want Fiber (Google noted it would reimburse the $10 pre-registration fee for households that later decided they didn't want the service when it came to paying the full installation and service fees). Google also sent its own employees out in trucks and vans to canvas neighborhoods with fliers and knock on doors.

But as the September 2012 deadline for Google Fiber pre-registrations approached, it became clear that many Fiberhoods, especially those in Kansas City's historically poorer and blacker areas, were probably going to miss their goals. So just over a week before the deadline, Google recalibrated its goals, lowering the quotas for many Fiberhoods to allow 180 out of 202 (90 percent), to qualify for Fiber service. "Our build-by-demand model is unique," wrote Kevin Lo, Google Fiber's general manager, in a blog post explaining the recalibration. "It will keep our prices low by using efficient networking and construction processes."

To that end, Google may have succeeded: while the company itself doesn't break out numbers on Fiber, one independent estimate indicates it may spend as "little" as$94 million on the Kansas City network in 2013, far less than the tens of billions in revenue Google reports each quarter.

But when it comes to who actually has Fiber today, and who's on track to get it, things start to get murky. When asked by *The Verge* to provide an exact number of households it has connected with Fiber so far, Google declined, pointing instead to the maps on its Google Fiber website, which show just 12 completed Fiberhood installations. "We don't have a number of households to share, but we're currently building and installing Fiber in 60-plus Fiberhoods throughout Kansas City, Kansas and Kansas City, Missouri," Wandres says. Another independent estimate by internet traffic monitor Akamaipegs the number of total Google Fiber customers somewhere below 830.

Google Fiber has also been installed in a few local restaurants and cafes. And several optimistic, wealthy tech entrepreneurs from out of state have also purchased Fiber-connected houses in Kansas City that they're renting to local startups, creating a small, insular community known as the "Startup Village." But even those users say they haven't noticed much of a difference when using Fiber's top-tier, gigabit-speed connection. "It saves me a few minutes in a day," says David Hulsen, a co-founder of local startup RFP365.

And for many of those in Kansas City's poorer, historically black areas, Google Fiber never really seemed like an option. "When they came into the community, there was a lot of excitement, but then when the criteria came down, we knew that this wasn't us," says Dixon.

Money was an issue, but Dixon says the minimum pre-registration requirements were also barriers to adoption, because they necessitated that people in the neighborhood work together, even if they didn't necessarily know or like each other, let alone have similar incomes: "[Google]'s saying, I've got to get 10 square blocks of my neighborhood together before I can get this, and then everybody's to come up with $300 — it can't happen like that in this community."

A TAIL OF TWO INTERNET

There were other factors that prevented Google Fiber from being as well-received as it could have been among lower-income areas: a significant subset of the population in the Kansas City metropolitan area lives in apartments or housing complexes; many are below the poverty line

and many are black, according to US census data for both states. In apartment buildings, Google has to physically bring Fiber cables up to each separate unit, so the company won't provide any service unless the entire complex is on board. That means either every unit owner or renter has to agree to pay their own installation fee, or the landlord has to agree to pay the costs for all the units.

Google employees who are working on the Kansas City Fiber project admit that they had difficulty in trying to penetrate all of Kansas City. "We had to do a lot of learning on the fly when we launched this," says Carlos Casas, the Kansas City field manager for Google Fiber sales and marketing, who was hired just two weeks ahead of the official launch. "I don't think we knew the magnitude of how much we were going to have to be out there in people's neighborhoods, talking to them about it, in order to get them to sign up." But the company learned quickly: Casas says that since Google started in Kansas City, he and his team have held over 600 different local events, from block parties to ice cream socials, to try to spur adoption and educate people about Fiber.

WHAT GOOGLE FIBER CAN AND CAN'T DO

The divide between the haves and the have-nots runs deep in Kansas City: 70% of children on the Missouri side don't have at-home Internet access, and 25% of Kansas City-area residents don't have Internet access at all, according to local nonprofit Connecting for Good.

Those numbers are a lot higher than the nationwide average, where only 9% of adults don't have at-home Internet access, and the 15% of adults across the U.S. who don't use the Internet, according to a 2013 survey from the Pew Internet Research Project.

"What Google did for Kansas City and the digital divide, which already existed, was put a spotlight on it," says Kansas City, Mo., Mayor Pro Tempore Cindy Circo.

"We're damn lucky to have the private sector do it," Circo said. "There was no way I could get a bond issue passed for this."

Google Fiber offers three options to Kansas City consumers. There's a free broadband internet option for seven years after a $300 installation fee or $25 per month for a year; a 1-gigabit per second Internet option for $70/month; or for $120/month, 1-gigabit per second Internet/TV bundle. It's a hell of a deal for middle class consumers who want faster Internet.

COMPETITION AND THE FUTURE

The bigger conversation, both for Google and cities across the country, is: What's next? For Kansas City consumers of means, Google seems to be working.

"Consumers are highly satisfied with Google Fiber service, suggesting its share gains are likely not done yet," wrote Bernstein researchers Carlos Kirjner and Peter Paskhaver. And service is still expanding in the greater Kansas City area. In November, Google announced its launch of a product line for small businesses in central Kansas City, Mo., and Kan. Google will move into consumers' homes in Overland Park, Kan., in 2015.

The power of Fiber seems to have prompted not just activists, but cable companies, to push for better access. In August, both Comcast and Time Warner Cable (TWC) announced that they would be increasing Internet speeds for customers in Kansas City, among other cities, at no additional cost to the consumer. Customers who pay for 25 megabits per second (mbps) service will be upgraded to 50mpbs, customer who pay for 50mpbs will get 105mpbs, and customer who were paying for 105 will now see 150mpbs.

Now that the carnival of Google Fiber's launch has moved to other cities, the underserved in KC are still largely underserved—but some have better access than they had before. The cable companies are offering a little more value to their customers. The business community has become a magnet for talented people across the Silicon Prairie. And the startups those talented people create will probably dictate, in the end, if Google Fiber is as big a deal as Kansas City hoped it would be.

WITH WHOM IS FIBER COMPETING?

The race to create the fastest broadband speeds has pitted numerous Internet and cable companies against one another. In Kansas City, Google Fiber's first test city, other providers have increased Internet speeds for existing and new customers.
The increased competition benefits customers who need faster connections for downloading movies, music, and other large files. Additionally, Google Fiber creates competition among tablet manufacturers because customers want greater integration between their devices.

HOW GOOGLE CHOOSES FIBER CITIES??

So, we know that it started in Kansas City, then moved to Austin, then Provo and now Google Fiber has targeted nine more metro areas. That possibility is beginning to look more like a

reality with Google recently signing a tentative franchise agreement with the city of Portland. That makes Portland the first of those nine metro areas to take the next steps toward becoming a Google Fiber city.

So, how is Google choosing these cities? Are they picking the cities who merely want it the most, or are the most prepared? According to Charlotte CIO Jeff Stovall, his city didn't really have major plans for fiber before they were approached by Google.

"It appears to me the cities that are chosen are ones that have high growth potential and are still small enough, in some respects, to be able to put in this type of infrastructure versus a mega-city like New York City," Stovall said.

We know Google is hiring for the Fiber team, with more than 60 open listings for positions such as "network infrastructure design manager." Although the listing was open in the Empire State, New Yorkers probably won't be getting Fiber anytime soon. Here are the five parameters that Google is using to determine which cities will get Google Fiber:

1. **Existing fiber network** - Google wants wants to move quickly and do it as cheaply as possible so it is leveraging dark fiber and existing fiber networks like the one in Provo. So far, Google has only moved to take over existing buried networks, so there is a possibility that they will install Fiber in cities that have utility poles (like Charlotte), mainly because of the massive price difference of hanging vs. buried cable.

2. **Close to a Google data center** - Google operates data centers internationally to support their products. More fiber running to and from the Google data centers means that it can process requests faster and glean data more efficiently. Proximity to a Google data center is key.

3. **Population size range** - At least in the beginning, Google will be targeting cities that are big enough to be diverse, but small enough that it will be able to avoid the oversight of cities like San Francisco, Boston, and New York City. Again, speed matters.

4. **Willing local government** - Permitting is, perhaps, one of the biggest obstacles that Google will have to overcome in its quest to rapidly build out Google Fiber cities. All of the city officials we have talked to said that they were very eager to work with Google, and some were working to expedite the permitting process to show their dedication to bringing Fiber to their city. So, local government cooperation is huge.

5. **Not in a Verizon FiOS coverage zone** - Verizon is the biggest competitor Google Fiber has at this point. FiOS consistently takes top ratings in customer satisfaction as an ISP. It would be foolish of Google to try to take on FiOS this early in the game, however, they don't seem to have a problem taking shots at AT&T, as evidenced by their brazen move into Austin.

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