Millimeter wave tech eyed by Facebook for serving rural populations

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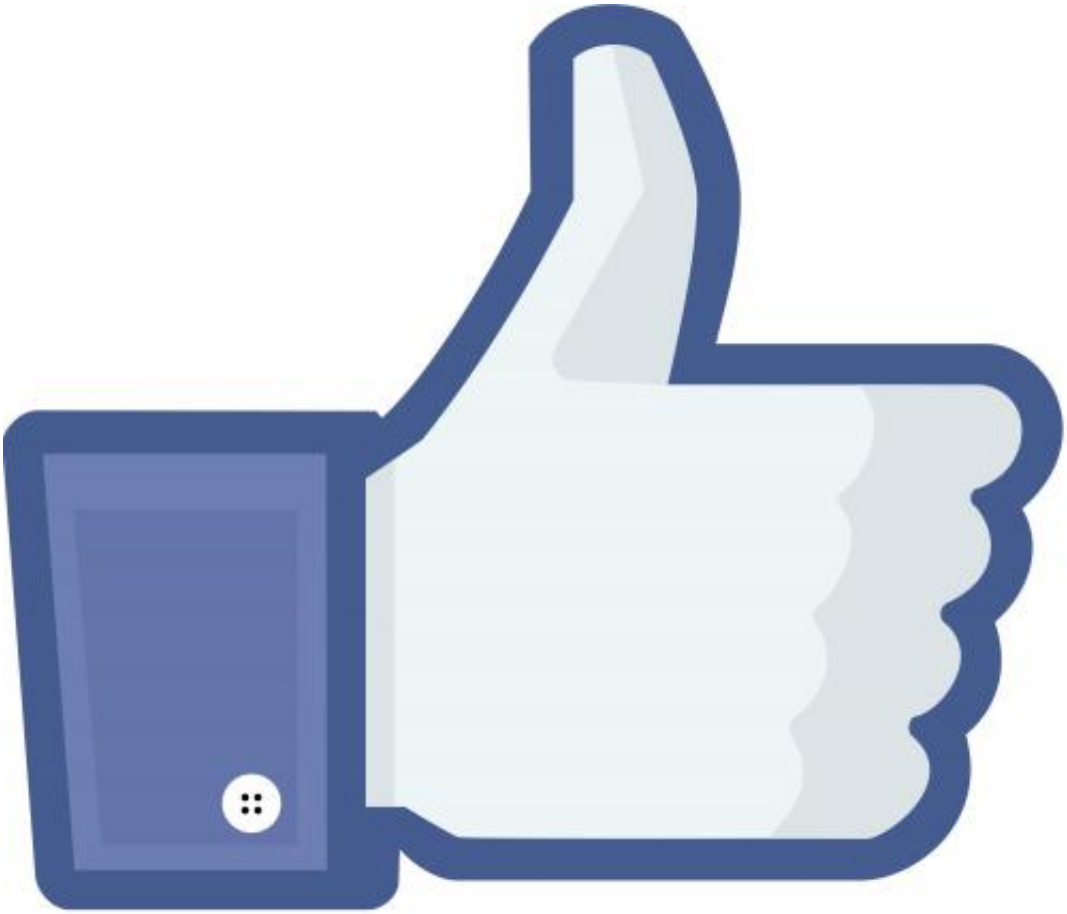

In 2013, Facebook and other tech companies launched Internet.org. The idea was to have a global partnership for a unified goal in making the

Internet available to billions of people without access.

In 2014, Facebook introduced the work of the Connectivity Lab; its team was working on "developing new platforms for connectivity on the ground, in the air and in orbit."

Mark Zuckerberg said their work was about building drones, satellites and lasers to deliver the Internet to everyone. In 2016, it's clear Facebook is hardly backing down from its vision of being in the front line of expanding connectivity. This week comes patent news that says Facebook is developing millimeter-wave networks.

Russell Brandom in *The Verge* saw a similarity in the initiative from Starry which had announced a venture for gigabit mesh networks in January, Well, said Brandom, looks as if Starry isn't the only company developing the technology.

Engadget Senior Editor Devindra Hardawar in January wrote about the new company Starry using high-frequency millimeter-wave technology to deliver gigabit speeds to homes wirelessly. Hardawar noted that this was the first consumer company to use millimeter wave technology to deliver wireless internet access. "Up until now, that's been a technology mainly used by the military for radar and other purposes."

Might these sorts of millimeter-wave networks signify a real turning point in the way poorer and rural populations are able to connect to the web? Abhimanyu Ghoshal in *The Next Web* said Facebook employee Sanjai Kohli has two patents that described a next generation data network.

One of the two was filed by Kohli in October, said *The Verge*. That one described a next-gen data network connecting computers via millimeter-wave radio links deployed as a mesh network.

The other patent filed described the network in more detail, "as a kind of centralized, cloud-based routing system," said Brandom.

The Next Web referred to it as a new kind of data network making use of millimeter wave bands and delivering Internet connections without the need to build out extensive infrastructure.

The Verge said Facebook confirmed the millimeter-wave research. It was part of the Internet.org's efforts to build out Internet access for rural and poor populations. The Facebook representative said the work was part of the Connectivity Lab, which supports the Internet.org mission of connecting billions to the Internet.

Ghoshal's comment: "It'll be interesting to see how far Facebook takes this technology, particularly since it might conflict with Starry's ideas for expanding internet connectivity."

Looking at the two patents: The patents were titled "Millimeter wave non-line-of-sight" and "Distribution node and client node for next generation data network."

The latter presented an argument for why the Facebook approach made sense. "Data networks have traditionally been wired, either copper or fiber. Wireless spectrum has typically been used for subscriber links, not Data Infrastructure. The advent of micro cells, pico cells, nano cells, and hotspots has made the provisioning of wired Data prohibitively expensive. This is a result of inflexibility of wired networks; cable has to be run to add new points of presence. In many cases, this requires that streets be torn up."

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