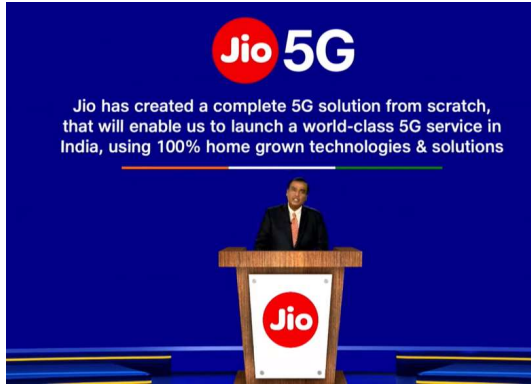


Reliance's 5G claims are short on substance

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When Mukesh Ambani, chairman of Reliance Industries Ltd. (RIL), announced on July 15 that the company's telecom venture, Jio, had developed "world class 5G services", not a single media outlet stirred in surprise at the enormity of the announcement's implication.

During the virtual annual general meeting (AGM), Ambani made the outlandish claim that Jio had "created a complete 5G solution from scratch". Even more astonishingly, he claimed that it would be based "100 per cent on homegrown technologies and solutions".

These claims came at a time when the global telecom industry is still figuring out how to roll out 5G.

But even by the standards of a company with a habit of making at least one big bang announcement at every AGM since 2016, when it launched Jio services, this year's event was truly spectacular.

In 2020, Ambani made a string of announcements such as Google buying a 7.7 per cent stake valued at Rs.33,737 crore in Jio Platforms, RIL's technology venture, and Google partnering in the development of an Android-based phone exclusively for Jio. Of course, the biggest of all was the announcement that Reliance was now completely debt-free, a year ahead of schedule.

Indigenous 5G technology

Ambani made no reference as to how Reliance proposed to lay out its 5G network. Instead, he said Jio was ready for trials with its "made in India 5G solution" as soon as the relevant spectrum was made available. "The company is ready for field deployment next year," he added.

He dwelt on how Jio's "all-network architecture" enables it to speedily "upgrade 4G networks to 5G" and spoke at length on how Jio's platform, equipped with uniquely developed solutions, after testing at scale within India, would position the company "as an exporter of 5G solutions to other telecom operators globally as a completely managed service".

He suitably peppered his speech with the usual buzzwords such as artificial intelligence, big data analytics, cloud computing, block chain and others. Finally, he dedicated Jio's "5G solution" to Prime Minister Narendra Modi's "highly motivating vision of Atmanirbhar Bharat".

Rolling out 5G is very expensive. Most operators are planning a phased rollout, targeting premium customers first before spreading the 5G network wider. This was how 4G was rolled out worldwide, including in India.

More crucially, 5G is not just about faster downloads; it involves setting up a network infrastructure that would enable large-scale networks to function in mission-critical mode on a real-time basis.

Managing a metropolis-wide infrastructure that include traffic patterns, pollution levels, electricity grids or even telemedicine requires a fail-safe network, which 5G is supposed to facilitate. This is the qualitative shift that 5G marks from 4G.

Reliance is not known to have invested anything in building such a network. The "solutions" that Ambani talked about are a distraction in this context. They are what float on a network; the network itself is yet to be built.

Iplytics, a Berlin-based company that monitors technology trends, reported that Huawei of China held the most patents among “5G patent families” in the world. Chinese companies, including Huawei and ZTE, commanded the largest number of such patents, closely followed by Korean companies, including Samsung and LG.

As of November 2019, Huawei held 3,325 such patents; its nearest rival was Samsung, with 2,846 patents. Nokia’s alliance with Alcatel-Lucent was the most significant non-Asian rival, with a combined tally of 2,308.

A lot of grunt work has gone into the development of 5G. Samsung, for example, began work on 5G networks several years ago; in 2013 it announced that it had developed its own 5G system.

Companies have spent several years developing the relevant technologies, which is why many are sceptical of Ambani’s claims. Incidentally, Reliance is reported to have sourced some 5G gear from Samsung.

The long road to 5G

Just two days before Ambani’s announcement, United Kingdom Prime Minister Boris Johnson announced that he was giving British telecom companies time till 2027 to rip out Huawei equipment from their networks.

The decision to grant such an extended timeframe suggests that telecom companies would either risk a partial blackout across their networks or have to bear prohibitively high capital costs if the timeframe were to be reduced.

So, when an Indian telecom company with a mere four-year track record and no significant patents in the relevant domain makes the claim that it is positioned to establish a fully indigenous 5G network, it ought to offer a convincing explanation.

Of course, given the precarious state of finances of operators in many parts of the world, telecom companies are also trying to build a “5G-like” network.

The idea is that if a full-scale 5G rollout is not immediately possible or feasible, patches based on software solutions as well as open source hardware could be built in order to give a “5G-like” network performance, at least in limited markets or geographies.

India’s two biggest operators, Jio and Airtel, are both members of the O-RAN Alliance, a body formed in 2018 with the objectives of building radio access networks (RAN) based on an open interface and tackling issues arising from enormous data flows. Such networks allow smaller vendors to custom-build networks suited to specific classes of users. The second objective implies that human interventions to monitor and direct network traffic in an optimal manner are simply impossible.

It is obvious that telecom operators are aiming to put in place specific features of 5G performance without having to invest the humungous amounts needed for full-scale 5G deployment.

Verizon, the largest telecom operator in the United States, deployed its proprietary version a couple of years ago. It promised its customers high-speed data but its protocols were not in compliance with the 5G NR (New Radio) standards laid down by the consortium that defines 5G standards.

Although Verizon did roll out full-scale 5G services in select cities later, the deviation from globally defined 5G standards indicated the adoption of a lower technology standard wherein the performance would not be on par with a fully compliant 5G network.

It is obvious that Reliance would, at best, adopt such a shortcut to a 5G rollout. That would be a far cry from the lofty claim that it has developed a fully indigenous system “from scratch” and also plans to sell it to the world.