

JIO'S INTERNET REVOLUTION IN INDIA

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Reliance Jio Infocomm Limited, commonly referred to as Jio, a subsidiary of Jio platforms and owned by Reliance Industries is an Indian telecommunications company launched in December 2015 and became publicly available in September 2016. India is now the second largest telecommunications market in the world with the telecom subscriber base reaching 1.15 billion by the end of year 2020, as per a report by Statista in February 2020. India has also become the world's second largest internet consuming country with the average data consumption of 9.8 GB as the country's internet subscriber base has now increased from 250 million to 550 million in just three years. Reliance Jio's contribution to this surge in India's telecommunication and internet market has been pivotal.

To comprehend the upswing of Jio Platforms it is important to understand the rise of Reliance Industries.

Reliance was founded in 1966 by Dhirubhai Ambani as a trading business, which over the span of nearly four decades expanded into the manufacturing sector, petrochemicals and oil, gas, and petroleum industries. As a result, Reliance from a small trading business became an industrial powerhouse despite India's restrictive policies during the period of fantasizing socialism. Following Dhirubhai Ambani's death in 2002, the Reliance industry was under major threat due to the power struggle between Mukesh and Anil, Dhirubhai's sons. In 2005, Mukesh Ambani and Anil Ambani reached an agreement to split

the group as per which Mukesh Ambani got the ownership of the core petrochemicals business, Reliance Industries Ltd while Anil Ambani took over Reliance Communications, the telecom arm of the group which had been established recently along with bunch of other entities and thus forming the Reliance-Anil Dhirubhai Ambani Group.

The brothers signed a non-compete agreement for a decade, but it fell apart mid-way. This paved the way for Mukesh Ambani's Reliance Industries Limited to enter the telecom sector. This evolution of RIL following the non-compete agreement break up would go on to become the reason of India's internet revolution a decade later.

The Journey towards Jio Platforms

In 2010, India decided to take the next step forward in the development of its telecommunications sector. The government started auctioning the high-speed data access 3G and 4G spectrums. Multiple telecom companies were operating in India at this time, focusing their efforts around upgrading their infrastructure and services only to the 3G spectrum, and thus did not buy the 4G spectrum. Instead, the 4G, also referred to as the Broadband wireless-access (BWA) auction was swept by a completely unknown company named Infotel Broadband Services Limited having just \$32,000 in revenues and a single subscriber. The very next day, RIL announced having acquired Infotel, marking the return of Mukesh Ambani into the telecommunications sector

Box 1: What makes LTE so desirable?

Long-Term Evolution, commonly referred to as LTE is the fourth generation or 4G wireless standard aimed at increasing network capacity and cellular devices speed. LTE is the technology used for wireless broadband communication between cellular devices and data terminals, making use of GSM and UMTS technologies.

LTE offers a higher peak data transfer as compared to the 3G technology, with reduced latency, stable bandwidth capacity and backward compatibility with existing technologies being used in cellular devices. LTE also has an active role in the development of 5G technology. Summing, LTE can be referred to as the technology being employed in 4G telephone services.

Voice over LTE (VoLTE) is an upgrade on the LTE technology, as it uses a much more standardized system, especially for making high-definition voice calls. As a result, users can make voice calls while using data services at high speed without changing the voice quality in the call. On the contrary, the LTE technology carriers have introduced a circuit-switched fallback mechanism as per which cellular devices using LTE technology fall back to 2G or 3G networks for the duration of the call.

following losing his dream project Reliance Infocomm to brother Anil Ambani in the 2005 demerger. RIL also put its energies in establishing a base for high-speed optical fiber 4G network across the country.

The Wall Street Journal penned down RIL having established itself as the sole owner of 4G spectrum in India as: "By the time Mukesh Ambani builds a 4G wireless business, rivals will have had the chance to sign up millions of customers for 3G services, leaving a smaller pool of potential broadband subscribers. Also, 4G technologies are still being fine-tuned, whereas 3G networks have been up and running for years in other parts of the world. And 4G devices will likely be more expensive than 3G ones in the initial stages due to

there being a smaller universe of manufacturers."

Time has shown, RIL's investment in the 4G infrastructure was as fruitful as it could be. In September 2016, RIL's new telecom service called Jio was formally launched, with special focus on high-speed data instead of just voice and messaging services. Jio offered customers 4G internet with data plans amounting to 1GB per day at a time when all other telecom operators were offering 1GB data per month. Moreover, they set the price during the initial days at just INR 05 per GB while other companies offered in the range of INR 250-300 per GB. Jio also became the first network in India to provide 4G LTE services and VoLTE services. All the prime members were offered free voice

calling and 100 free SMS per day by RIL. This proved to be quite a miracle in India's price sensitive telecom industry. Jio at the time of its launch was already covering 18,000 cities and towns along with over 200,000 villages in India, aiming to make Jio's services accessible to 90% of Indian population in not more than six months. Mukesh Ambani was vocal about his objective to gain 100 million customers as soon as possible, and Jio, whose entry into India's telecom sector has been nothing but revolutionary, by mid-2020 had gained about 388 million customers while also carrying 70% of 4G traffic in India during the year 2019. Consequently, India's average data consumption rose to 12GB per month in 2019, up from 90MB in 2014.

Box 2: Why Swim Against the Tide?

When the Indian government started auctioning spectrum for 3G and 4G, all telecom companies at the time put their money on 3G, while 4G was bought by a small sized firm called Infotel Broadband Services Limited. RIL bought that company and started its journey in the field of telecommunications. The real question is: At a time when all established Indian telecommunication companies were focusing on 3G, why did RIL become so interested in investing the 4G segment?

In 2011, when Isha Ambani – daughter of Mukesh Ambani – was a student at Yale and had come back to her home in India for vacations. She was, however, unable to properly submit her coursework due to poor internet connectivity. This was when Mukesh Ambani, the head of RIL realized that the problem being faced by her daughter was not an isolated experience, but a shared problem in all of India. Alongside poor internet connectivity, Indian population was faced by overpriced data charges, making internet unaffordable for a significantly large number of people.

Instead of just trying to install a better internet connection at his residence, Mukesh Ambani initiated his plans of working on the Jio Platforms to provide high speed internet facility to all of India at affordable rates.

A simple realization from a father that the problem faced by my daughter is a problem faced by every Indian national became the basis of India's telecom and internet revolution.

More than just a Telecommunication Service Provider

Jio was launched as a telecommunication service provider, focusing primarily on Broadband Wireless Access (BWA) - commonly referred to as the 4G LTE and VoLTE services. Over the following few years, Jio widened its artillery by offering multiple products and services.

In 2016, Jio launched its first smartphone device through RIL's electronic retail outlets, Reliance Retail. Till now, Jio has launched three different mobile series targeting different segments of the society. These mobile phone series have been named as LYF, JioPhone and JioPhone 2. Another series of phone called as the JioPhone

Next, co-developed with Google is expected to be launched in September 2021.

JioNet Wi-Fi is the free Wi-Fi hotspot service that the company provides in cities throughout the country. JioNet was started even before the Jio cellular services were available to all of India. This way,

Jio managed to make a mark in the market for itself even before it had fully operationalized its cellular services. As part of JioNet Wi-Fi, Jio was able to provide free wi-fi facility to spectators in six cricket stadiums across India hosting the 2016 World T20 cricket championship.

Jio has also launched multiple mobile phone applications. These include a web browsing app for android phones, instant messaging and video calling applications, entertainment apps, online payments app and a few others focusing on various services for the users.

JioFiber is the initiative by Jio Platforms to connect all of India with high-speed broadband internet through fiber optic cables. Since 2015, the company has been expanding its fiber optic cable network and began testing the service in 2018. It has been given the name Jio GigaFiber.

Box 3: FTTX- What is the all the hype?

Fiber to the X (FTTH), is the term used for internet services where broadband internet is provided to a home, building, residential area, organization etc., referred to in the name as X, through optical fiber cable. The optical fiber cable can carry a much larger quantity of data at higher speeds as compared to not only the conventional copper wires used in older broadband systems, but also in comparison with the telecommunication service providers.

It is capable of transferring data at speeds of 1Gbit/s, or Gigabits per second, to a much farther range of area, even as far as tens of kilometers. This is not only quick as compared to all other available data transfer technologies, but over long distances also prove to be more economical. As a result, FTTX is now being preferred by all major communication providers globally in cases.

With rising fame of high-definition, on-demand video streaming applications as well as following the onset of pandemic the realization of cost-effectiveness and efficiencies in online or work from home set ups, FTTX is the go-to technology for high quality internet provision.

Courtesy of Jio's quick expansion not only of its cellular services but also of the Jio GigaFiber initiatives, India is now well seated at the foothills of an internet revolution and in coming years will reap the fruits of these initiatives by Reliance Jio.

Reliance Jio, India's Telecom Sector, and the Economy

Jio's rise in Indian telecom sector has changed the dynamics of the industry in the country. High quality and affordable telecom services especially internet across India is no longer a dream, but a rapidly materializing reality. Jio has positively impacted the telecom users in India and managed to radically alter the dynamics of the industry. Ignoring predatory prices and making use of consumer-friendly pricing in a price sensitive industry played a major role in people's adoption of the new service provider. This has not only significantly reduced the profits of other telecom sector competitors, but also forced small network

operators to shut down as they failed to reach the standards now set by Jio. Gupta, Raghav, & Dhakad (2019) analyze the impact of Reliance Jio's introduction on the telecom sector and consumers well-being. Gupta et. al (2019) reached to the conclusion that Jio successfully managed to completely disrupt the telecom market of India forcing established network operators to either exit the market or merge with other firms. On the other hand, the consumers have responded positively to the new entrant and thus the market witnessed a significant shift from other operators to Jio by the consumers. Madhavan and Chirputkar (2020)

focus on the various ways in which Jio's sudden rise has impacted the Indian economy. They concluded that despite the world coming to a standstill due to the pandemic, Jio never halted. Instead, Jio has managed to exploit the situation and become the flagbearer of digitalization in India as the company focuses on achieving its long-term goal of enabling home automation in all of India's households. Noorul (2017) and Mukherjee (2018) also analyze the disruptions caused by Jio in the telecom sector of India and how that changed the dynamics of the industry.

Lesson for Pakistan from Jio's Success

Realization, Opportunity, Boldness: three words that are key to the success of Jio in India. Mukesh Ambani's realization that the problem faced by his daughter is the problem of every household in India formed the basis of the revolution that came next. In that, Mukesh Ambani's Reliance Industries Limited saw the opportunity of an untapped market of internet in India, and especially the 4G standard. While all other well-established companies focused on 3G technology, RIL made the bold move of investing all its money and energies in establishing a network of 4G data transfer in India prior to its launch in 2015.

While some critics of RIL claim that this was possible due to the close

ties of Mukesh Ambani with the Indian government, others argue that the government is responsible for acting as a facilitator in all the markets in the country instead of creating hurdles.

Currently, Pakistan employs 3G and 4G technologies in major parts of the country where internet access is available. The internet quality, however, remains severely constrained in major cities even today. The 3G and 4G internet facility remains restricted to limited regions in the country, while optical fiber connections to homes are scarce even in the few major cities of the country.

It is time for Pakistan to learn from India's Jio experience and realize

the need for a high-speed quality internet across the country. The government must step forward and not only facilitate the private sector telecommunication companies to increase internet access in the country but also encourage them to expand their service areas.

Internet for all is not just a need in today's times, but considering the manner in which the post-pandemic world is evolving, Internet is slowly evolving into a fundamental right of every individual across the globe. This is the perfect time for Pakistan to take the necessary steps to realize the dream of Internet for All, else we might not be able to catch the train once it has left the station.

Lesson for Pakistan from Jio's Success

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