CON101: Digital Divide and Net Neutrality

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Google Loon is a part of google's X - The Moonshot Factory under which google tries to make new technologies to solve a few of the worlds most challenging problems. Currently, every 1 out of 2 people worldwide does not have access to the internet (the majority of them being in rural areas or underdeveloped nations). For internet access in rural areas, the cost of infrastructure is high(compared to dividends they will receive), not giving telecommunication companies the incentive. Google claims that project loon can provide internet to the most inaccessible and rural areas at a fraction of a cost as compared to launching satellites or laying infrastructures such as fibre optics. Building satellites take millions of dollars, and launching it takes a similar amount while laying of fibre optics in rural and inaccessible regions is not feasible (economically and sometimes physically). This project started as a research project but in July 2018 has become a separate independent company called the Loon LLC (Alphabet Inc. subsidiary). During the development phase, they faced many challenges the most significant being popping of balloon in few days only. After a lot of research and development, they were able to make balloons that could sustain for more extended periods.

Loon LLC maintains these balloons in the stratosphere because it remains unaffected by natural disasters like hurricane, tornado and storms. A Loon balloon can cover over 5,000 km square of area (which is nearly the size of New York City). These balloons have LTE antennas installed which make them equivalent to floating mobile towers. Loon LLC claims that people will be able to access the internet through the balloons five minutes after a natural disaster like a hurricane or tsunami.

In July 2015 Loon signed an agreement with Sri Lanka's Information and Telecommunication Agency to launch these balloons in mass-scale making it the second country to get full LTE coverage. In October 2017, they provided emergency LTE coverage to the Peurto Rico after Hurricane Maria. In July 2018 with Telkom Kenya, they have pledged internet access to the most inaccessible regions in Kenya.

Another project similar to the Loon is the Starlink under development by the private company SpaceX. It has the same goals, to provide internet to the whole world through a network of light-weight satellites across the lower orbit of Earth (Low Earth Orbit or LEO). These mass-produced satellites will

work with ground transceivers and intend to provide global broadband internet to the most underserved areas as well as the metropolitan areas. As of now, they have already launched 775 satellites and plan to put 30,000 more. (US FFC has requested International telecommunication union for a space of 30,000 satellites).

The concerns with these projects include space debris produced by the large number of satellites placed into earth's orbit, which directly impacts radio and observational astronomy. Other than the specific challenges that these projects have, there is also a problem with low-cost internet services. These services can push local telecommunication businesses out of the market through their low and competitive pricing models. This might degrade the Quality of Service (QoS) in the long run and establish a monopoly in the domain which, is never a good idea in any market (especially for the consumers).