

# CON101: Digital Divide and Net Neutrality

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## 1 About and description

### 1.1 Google Loon

“66providing reasonable to high speed internet access to rural areas of the world via a balloon like structure. The project uses a special balloon like structure which takes energy from solar energy. They are located in stratosphere.

The users of the service will connect to the balloon using an antenna attached near their place. The signal will travel through the balloon network then to a station connected to the internet service provider then to the internet.

The balloons are made of sheets of thin, strong polyester film, with height of 12m and width of 15m. These are capable of withstanding high pressure than a normal weather balloon. These run on solar energy and solar panels of 100W are attached to them. It is enough for the day and also enough to charge a battery (600W) to use at night.



Figure 1: Google Loon balloon

## 1.2 Starlink project

Starlink aims to solve the two big problems which are lack of affordable connections and non-acceptable lag between distant locations. Currently, we internet through optic fibre connections(cables). But the optic fibre is a bit expensive and not easy to lay, especially between two places which are far away from each other.

This may not be a problem for common people but for big enterprises, even small time intervals can create a big issue. SpaceX tends to solve this problem by using satellites which will be close to earth.

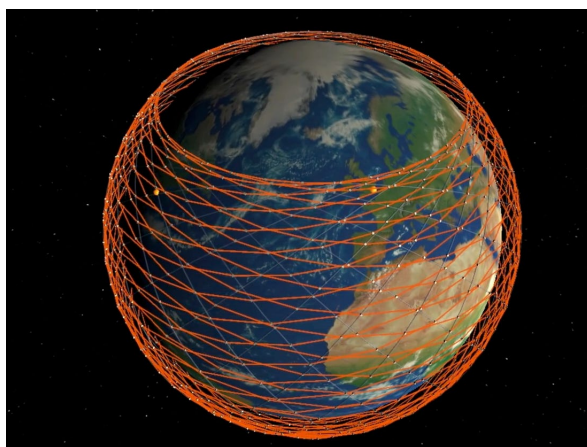


Figure 2: Satellite Network

As of now, the plan is that around 16,000 satellites will be required. SpaceX has filed the request of 42,000 satellites so far. The satellites look something like this -



Figure 3: Satellite

The Starlink terminals look something like this -



Figure 4: Terminal

These will cost around \$200 and it is not clear who will pay the cost.

Estimated cost of the internet plan will be \$80 / month.

It is decided that SpaceX's first goal is to bring high speed internet to US and Canada.

## 2 Potential problems

### 2.1 Google Loon

One of the big problem is hardware failure. If some problem arises, we cannot access the balloons. They might go into unwanted places.

Although the balloons fly above the stratosphere so that it could be safe from weather conditions, there have been reports where balloons have failed because of cyclones.

### 2.2 Starlink project

Starlink satellites are more compact and therefore if it were to collide with a debris in space, it would cause a big issue, although the probability of it happening is less.

We would have to go through a long process if one of our satellites go out of control. We will have to bring it back, and sent another in it's place if that's even possible. Either way, it will consume lot of time.

There is not much to say other than this as the technology is so advanced that it is expected to perform its job perfectly.

## 3 Conclusion

Both the projects are highly potential as well as extremely well planned. Although there are some high take risks involved, the pros outweigh the cons.

## References

1. Starlink
2. google-loon
3. wiki/starlink
4. wiki/Loon