Indian Millennials' expectations to 5G

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Millennials defined

- There is no agreed definition of Millennials, but it is usually applied to the group who reached adulthood around the turn of the 21st century.

- William Strauss and Neil Howe are often credited with coining the term in Generations: The History of America's Future, 1584 to 2069, Strauss and Howe where they defined *Millennials as being born between 1982 and 2004*

The Millennial expectations in a 5G context

- Existing outlook (March 2017, Outlook number 18)
- Focus on Western Millennials' expectations
  - **Internet and 5G**: Millennials generally expect continued, fast developments in technologies/networks. They do not see 5G as anything special – it is only special for the IT savvy people. It is expected that 5G as a network will exist as a combination of different types of networks. 5G is seen as the real implementation of IoT. Millennials generally do no have a manifest need for higher data rates.
  - **Price**: It is expected that 5G can be offered to the customers through different network combinations and that this can open for service providers to offer different price combinations to the customer. The 5G networks and services must generally not command higher prices than 4G - The Millennials will only pay extra for 5G if it is directly useful for them.
  - **Privacy/trust, security**: Millennials do generally not trust app developers. The service developers must earn the Millennials' trust in some ways – the trust is not there as default. Privacy is important for the Millennials. In 5G services, privacy must be easy to handle and be present by default. Millennials expect to be in control of their data in the future. Many of the IoT services relating to the 5G vision hinge on privacy and this must be solved (for example the self-driving cars and tracking of foot-prints generally). Security is a factor that is expected to be addressed and dealt with.
  - **Battery**: The Millennials prioritize longer battery life/ capacity over data rates.

5G and India

- Indian Government has set-up a committee to lay down the roadmap for unrolling 5G in India by 2020

- Vision: Fast wireless connections which open for Internet-connected smart devices. More speed, less latency, higher density of broadband users, optimized for IoT

- India do not want to be left behind as it happened with the enrolment of 4G

  - http://www.livemint.com/Industry/icJdOdAaAclQMr2Er7kOsL/5G-services-Govt-sets-up-panel-eyes-rollout-by-2020.html

Survey in Pune India September 2017

- 10 surveys distributed in 5 different classes and amongst younger teachers
  - Paper based survey to secure as many as possible responses
- A total of 50 responses

- Analyses are on-going – however trends can be seen

Starting point 4G: what does it mean and which possibilities do you have

- What does 4G mean?
  - Network should not be a problem for what I want to do
  - Fastest Internet
  - Quick search
  - Service with high speed, consistent quality

- Possibilities:
  - Online studies, lectures, fast access of videos, social media, surfing, downloading, e-learning, e-commerce

How satisfied are you with 4G?

- Use it to survive
- Technology is good but price is too high
- The access speed is sufficient but not up to the mark
- It gives high speed only in restricted areas – video calling is not up to the mark
- Poor connectivity - can be inconsistent and only if more efficient it is worth the price
- Very few devices are compatible with 4G
- The technology has not been able to provide efficient services – not easy assessable in slum areas

What do Indians envisage from 5G?

- Expectations:
    - Speed (min 1Ghps to max 10 Gbps)
    - Various features and advantages that can make it better for usage
    - No buffering on video watching
    - Better speed and more stability
    - Support of virtual reality
    - No interruptions, no buffering, not interference, affordable
    - Will work on any Android smartphone, does not require any special settings on software or new handset

- Will it be more expensive for you?
    - Maybe because the data providers need to give more data
    - Yes it will be more expensive
    - It should not be more expensive – should be within affordable price range

Challenges?

- There will be a huge maintenance process
- In rural areas it will not be possible to use 5G – and few devices will support
- The main challenge is the time it will take for implementation of the service

Challenge in respect to security/privacy?

- 'I think so but I am not aware since I do not have have knowledge in that area'
- Yes using data service would always be subject to challenges in security
- 'Yes'
- 'I think the use for smart home and smart driving is subject to cause problems for humans'

Summarizing Indian Millennials views on 5G

- Based on a draft look at the responses it seems that the Indian Millennials are sceptical towards the implementation process of the 5G networks
  - Perhaps this can be seen as a reflection of a challenged 4G implementation process in India. India was not part of the setting of standards for the 4G
    - http://economictimes.indiatimes.com/news/economy/policy/india-to-deploy-5g-by-2020-sets-up-high-level-forum-of-telecom-and-it-ministries/articleshow/60839946.cms

- Expectations are speed and robustness and not so much special use cases

- Challenges are seen with security and privacy but do not know very much about this – and therefore it seems that they are not really concerned

- Concerns are particularly on the different device manufactures to make sure that adaptability, cables and network can go together

Update of Outlook

- An update of the existing Outlook will be made with the data from the Indian survey

- It is planned that the update will also include results from a similar survey in Russia