



Saankhya Labs





Role of Academia in 5G globally

- 5G is a complex mix of various technologies – compared to earlier mobile network standards
- Many academic institutions started early research and technology development to and creating test beds. (source – sdxcntral.com). Some of the earlier academic leaders in 5G
 - University of Surrey
 - UT Austin
 - New York University
 - UC Berkeley Wireless Research Center
 - Tokyo Institute of Technology
- In India IIT's and IISc are taking the lead in creating a 5G test bed and partnerships with innovative Indian startups to develop specific solutions



India Innovation opportunity for 5G

- India has unique problems in connectivity that can be the basis for innovation and newer solutions for India and the world at large
 - Large number of rural population with no exiting connectivity solution
 - Lower APRU (in Both Rural and Urban)
 - Available spectrum Vs huge data consumption especially Video.
 - Scope for innovation and newer solutions due to the heterogenous nature of 5G network and diversity of user needs
 - New technologies such as – Massive MIMO, millimeter (mmWave) high frequency spectrum, and distributed cloud architectures.
 - Further scope for innovation to solve unique use cases.
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India Eco system Opportunity

• Current Scenario In India

- The wireless technology development eco system in India is at a nascent stage with several small start-ups.
 - Lack of funds to do serious research and development
 - Limited Opportunity to 'Pilot' solutions to mature the solution technology
 - Limited Clout and bandwidth to influence in standards body to build a case for newer standards
- No mechanism for Government to provide funds to private organizations to do research or product development
- Lack of funds in standards body to support smaller start-ups to take-up standardization of their ideas and technologies.

• Role of Academia

- Has access to Government funds and grants to carry out research
 - IIT's IISc – 5G test bed
- Pool of researchers and experts available to carry out serious research
- Academia alone will not be able to deliver 'deployable' end solution to the market
 - Closer collaboration with industry especially innovative start-ups needed for better utilization of resources to realize a deployable solution or product

• Standards Body

- Gives a common platform for exchange of ideas and build a consensus on a newer technology
 - Has so far supported several new technology standardization efforts at 3GPP
 - E.g. Saankhya Labs initiated 5G broadcast, LMLC by XXXX, NAVIC by XXXX, etc
 - Need to strengthen the Standards body to be able support innovation and start-ups
 - Access to more Government funds to support standardization activities of small start-ups
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Thank you

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