

Innovation, Service Delivery and Impacts



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INDIAN TELECOMS LAST MILE: SO NEAR YET SO FAR

Decade of Innovation (2010-2020)

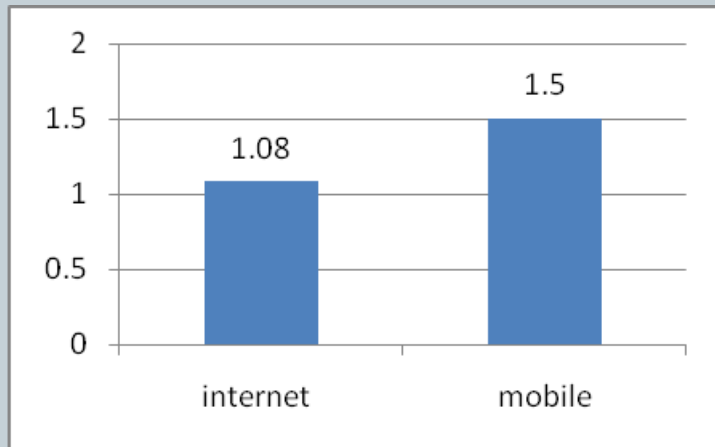


- Birth of mobile innovation, app economy, and use of IT to overcome infrastructure inadequacies and enable delivery of essential services
- Government Intervention
 - Establishment of the National Innovation Council
 - Establishment of State Innovation Councils
 - Science, Technology, and Innovation Policy 2013
 - National E-Governance Program
 - National Knowledge Network
 - Industry Innovation Clusters
 - National Optical Fibre Network and so many more...
- Motivated by the documented impact of telecom on growth and development

Telecom's role in growth and development



- According to ICRIER's Report in 2012, *India: The Impact of Internet* (2012) Indian states with higher Internet penetration can be expected to grow faster, and by **1.08% points for every 10% increase in the number of internet subscribers**



Given the low internet penetration levels in India, it is not surprising to find a lower growth dividend for internet than for mobile (1.08 versus 1.5). Increasing internet penetration will add significant percentage points to state level growth

Growth impact of telecommunications in India (GDP percentage point increase due to 10 percentage-point increase in penetration)

The Case for Mobile Innovation



- India is a 'Mobile First' Economy
- High Service Deficit + High mobile tele-density (144% urban, 42% rural, 73% overall)
- Mobile technology can be leveraged to achieve financial inclusion, deliver education and health services, improve agricultural productivity, empower rural communities, and other special services such as power distribution (smart grids), e-courts, etc.
- Technology limitations and absence of last mile connectivity, especially in rural areas will inhibit the growth of mobile enabled service delivery

Innovation in Technology Deployment



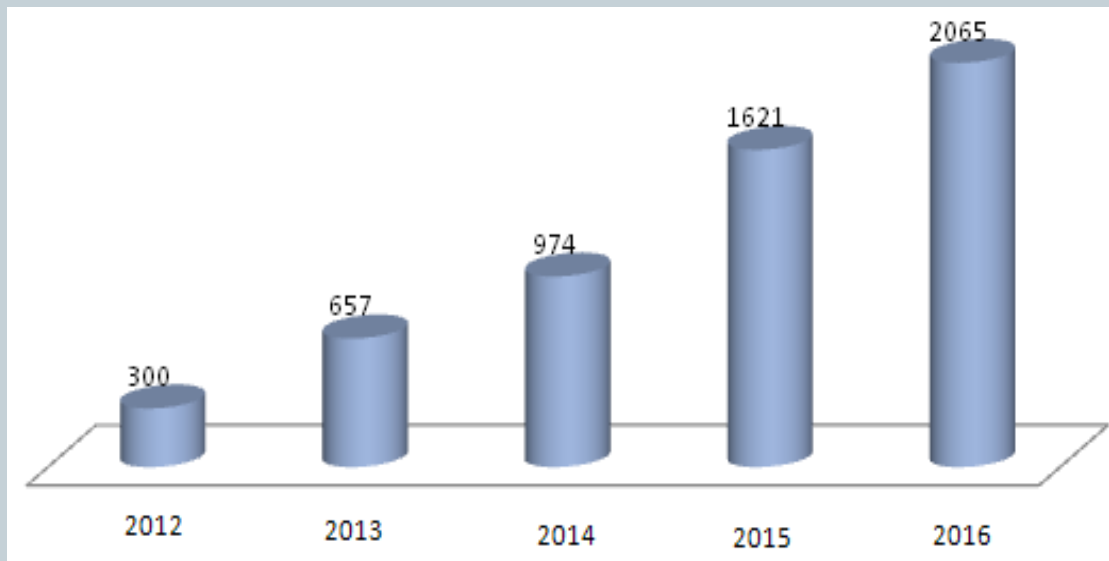
- Use of **Wireless mesh networks** can increase connectivity in rural areas (Quadri et al 2011). It allows rural communities to deploy a dedicated wireless network which is connected to a local server. Shared ownership brings down the cost of deployment
 - In a pilot mesh project launched in Gazipur, Bangladesh a satellite link of a GSM/CDMA-based network was used to connect the local mesh to the global network.

Business Model Innovation: The Indian App Economy



- Total estimated worth: 150 million USD
- 100 million app downloads per month
- 300,000 app developers
- Steady Growth; Android dominated landscape

**Projected Revenue from Paid Apps in India
(rupees crore)**



Source: Avendus Analysis

Small Innovation - Big Impacts: Apps Daily



- Apps Daily addresses the problem of mass dissemination of mobile app content
- **Constraint:** Low Digital literacy at the Bottom of the Pyramid, unfamiliarity with online content
- **Innovation:** Establish offline app stores which have a physical presence
 - The stores have a physical attendant who helps less tech-savvy mobile users acquire and gain awareness of useful apps.
 - Cumbersome m-payment regulation is circumvented by permitting cash payments.
 - The model provides an alternative to the 'Do it Yourself' culture. This makes the process less intimidating for first time users.
- **Achievements:**
 - Over 1 million apps have been sold since 2009
 - 10,000 outlets over 140 cities
 - Available on a variety of devices including Micromax, Samsung, Nokia, HTC etc.
 - Pilot programmes in Bangladesh and Saudi Arabia

Several other examples



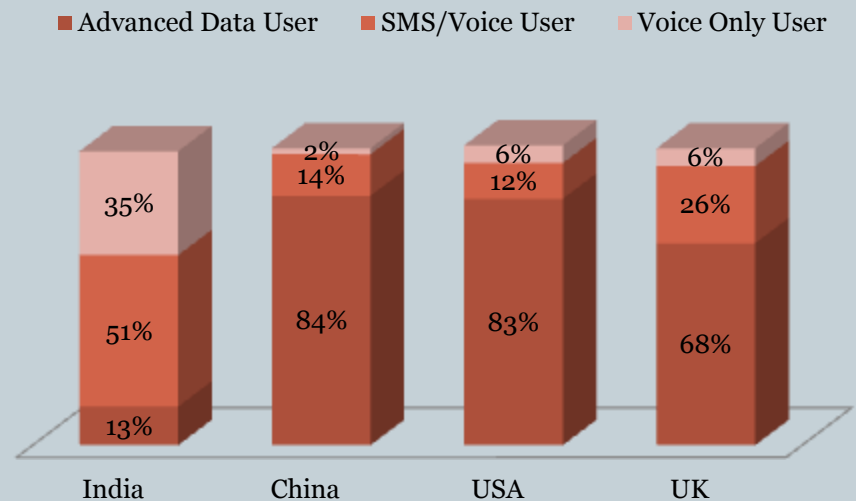
- Mobiles for financial inclusion (Nachiket Mor Committee Report).
- Public Distribution System in Chattisgarh – technology enabled disintermediation.
- Sarvajal - business model based on the use of M2M connectivity for clean water access.
- Help-Me – Consolidates the most sought after emergency services e.g. police, fire and ambulance with a phone app and operator console.
- Good Governance App – ‘I Paid A Bribe’ – an app which permits citizens to report when they have been forced to pay a bribe by public officials for services that should otherwise be free e.g. getting a birth certificate, driver’s license, registration of property etc.

Challenges



- Scalability of business models – innovation only in pockets
- Inadequate infrastructure and last mile connectivity – delay in implementation of the National Optical Fibre Network
- Language barriers and absence of locally relevant content
- Smartphone penetration, is still low (10%), albeit growing rapidly
- Policy impact confined to the technologically enabled
- Inertia - young entrepreneurs and app developers follow the traversed path

Penetration of Advanced Data Users (Age 15-24)

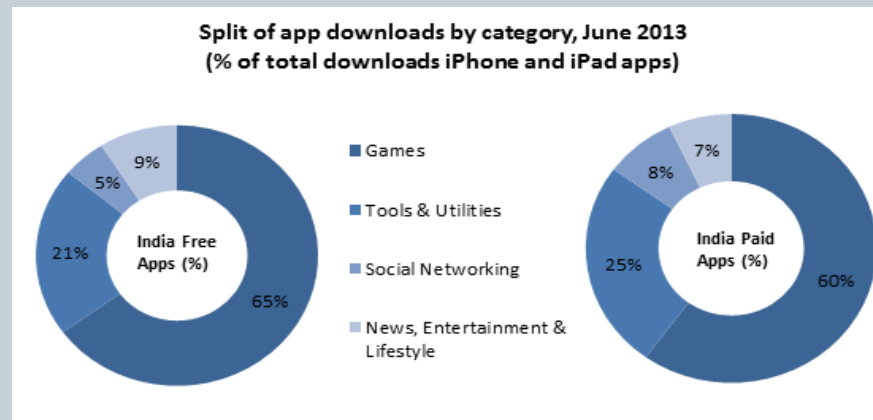


Source: Mobile Youth Around the World, Nielson (2010)

Low Hanging Fruits



- Acknowledge the heterogeneity among Indian consumers – service/product customization for segmented markets
- Innovation may not necessarily be path breaking, ‘frugal’ is a good starting point
- Enable knowledge and information sharing through initiatives like the NKN
- Utilize institutional and technological complementarities
- Increase consumer awareness on utility of apps
- Moving beyond *mobiles for entertainment* to *mobiles for development*



The Future



- Network Infrastructure – optical fibre network connectivity cutting across the country
- Smartphones supporting regional languages
- A smooth M-payment regime
- A digitally literate and aware India
- A vibrant hub of locally relevant content that addresses development and business needs

Thank you!
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