

INDIA

THE IMPACT OF INTERNET



India: The Impact of Internet

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Objective of the Study

- Internet and broadband are topical issues in India given their crucial ramifications on the socio-economic development of the country
- The government has shown keen interest in developing an 'IT mandate' for India, the reflections of which we find in the actions of regulators and policy making bodies. Examples:
 - *TRAI Recommendations on a National Broadband Plan-December, 2010*
 - *Budget 2011-12, Ministry of Finance*
- With regard to the above, this study aims to estimate the impact of internet on the economic growth of India and provide recommendations on building an eco-system to enable the growth of internet and broadband



Scope of the Study

- Discuss the existing literature on growth impacts of internet and broadband in developing and developed countries
- Emphasize the need to increase broadband coverage in India
- Provide an estimate of impact of internet on the economic growth of the country – **the first analysis at a sub-national level**, across 19 states of India
- Provide micro – level assessments based on case studies
- Compare the growth dividend of *internet* with that of *mobile* in India
- Provide policy recommendations that can create the requisite ecosystem for the growth of internet and broadband in India



Estimated Economic Impact of internet

The estimates are based on a model, which is an adaption of the endogenous growth model of Barro (1991)

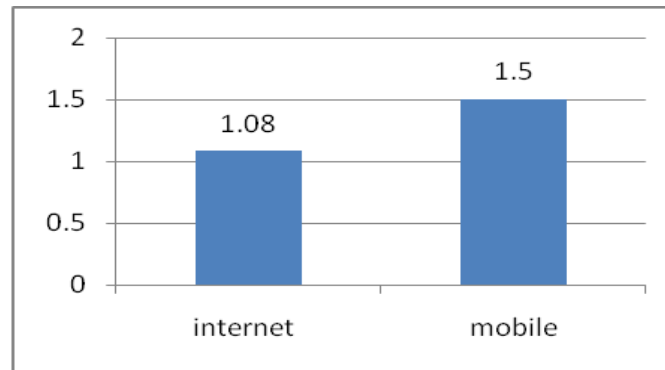
A major finding of our report is that Indian states with higher Internet penetration can be expected to grow faster, and by **1.08% points for every 10% increase in the number of internet subscribers**. The econometric results are provided in the table below

Variable	Co-efficient	t-stat*
$\ln \text{Invt}_{it}$ (β_1)	0.2455	10.04
$\ln L_{it}$ (β_2)	0.101	2.22
$\ln \text{Internet}_{it}$ (β_3)	0.108	5.4
Constant	4.14	5.82
R-squared .8565		Number of observations: 189
* At 95% confidence intervals		

States with higher penetration rates show a greater growth dividend. The developed states (with higher per capita income and level of internet penetration) will grow at **2.36% for every 10% increase** in the number of internet subscribers



Growth Impact of internet versus mobile

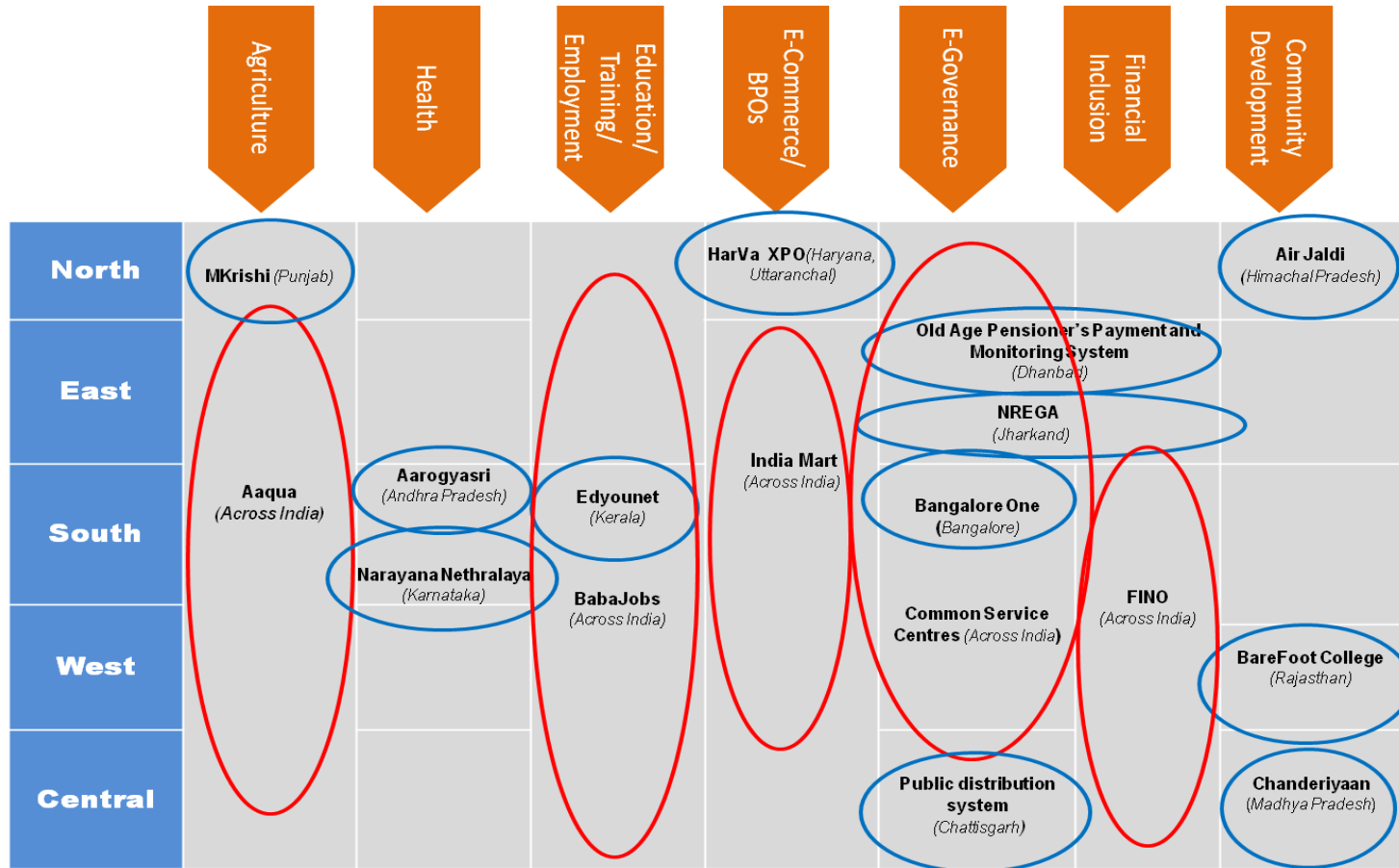


Growth impact of telecommunications in India (GDP percentage point increase due to 10 percentage-point increase in penetration)

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 as demonstrated by the growth impacts seen for the relatively developed states.***



Micro assessments using case studies trace the pathways that translate into growth at the macro level



Our case studies cover 7 key impact areas across five regions India



Examples of impact analysis for a few case studies

Impact in a Box : Public Distribution System in Chattisgarh

One estimate of benefit to the government is the savings of Rs. 180 million as a result of minimising corrupt practices. **With a recurring cost of 90 million per annum and a set up capex of 50 million depreciated over a 3 year period, the direct economic impact could be said to be of the order of 1.69* times the investment i.e. the project has more than paid for itself.** To this however one needs to add the attendant benefits of improved monitoring, greater transparency, elimination of irregularities (100,000 duplicated ration cards have been tracked and deleted), to derive an accurate estimate of the spillover created by the new ecosystem around paddy procurement and PDS in Chattisgarh. Moreover, the use of the SMS alert system and citizen interface website has encouraged citizen participation in the monitoring of the PDS, which is a cost-effective and efficient means of reducing malpractices. For example, the call centre has had many successes in controlling diversion as a result of receiving complaints. In addition, assigning allotments to FPS, and communicating the details to the shops and distribution centres, has been reduced from 7-15 days to just 2 hours.

*This ratio has been calculated by dividing the total savings from the project per annum (180 million) by the fixed and recurring cost per annum (106.67). Capex has been depreciated using fixed line method over a period of three years

Impact in a box: HarVa (XPO) – Process Outsourcing in rural areas

Teekli centre is the main hub that houses 30 employees and 4 trainers. The Teekli centre required Rs 25 lakh to set up. It has a running cost of Rs 4.5 lakh a month, as is earning about Rs 5 lakh in revenue per month. The internet cost (using data cards) is between Rs 10,000- Rs 20,000 depending on usage. **The revenue numbers are likely to go up with time but even at this early stage the impact is positive. A back of the envelope calculation estimates a ratio of close to 1***, essentially meaning that the project is self-sustainable. However, this is a lower bound estimate given that the revenues will only increase over a period of time and the fact that this number does not incorporate the spill over effects to the rest of the village community (e.g. rising income of households as women find employment at these XPO centres) In addition, impacts are being felt on several other dimensions such as boosting confidence among women, while at the same time promoting computer literacy and empowerment.

HarVa cites 40% cost savings to client, a direct result of transferring ICT infrastructure and skills to a rural area. This occurs because infrastructure, salaries, and everyday operations are performed at much discounted rates in the village when benchmarked against urban costs. For example, HarVa's first office cost Rs 3000 per month as rent. This would be unimaginable in a big city today. The rate of attrition is also low in villages. HarVa employs trainers from the city to make employees digitally literate. As a result, skills are transferred to areas where none existed. Depending on how many hours they work, the women at these centres earn anything between Rs 2500 to Rs 7800 a month.

*This is the ratio between revenue per month and cost per month. The cost includes the running cost of 4.5 lakhs per month and the fixed cost of 25 lakhs amortized over a period of 5 years, which results in an approximate addition of 41,000 every month.



Conclusions

- Attaining the targets set by TRAI in the recently released National Broadband Plan could generate an **additional USD 87 billion in GDP during the period 2012-2014**
- Policy recommendations and the corresponding justification is based on our findings, for aiding the development of the internet/ broadband ecosystem rather than simply supply side efforts. If internet takes off, it could transform lives and livelihoods, not just by connecting India's poor to the infrastructure of the digital economy, but by allowing them to become digital producers and innovators
- The focus is on policies that will drive the **development of the core and access networks** along with **restructuring of the corresponding institutional mechanism**



Recommendations - Building the Core Network

- **In agreement with TRAI's recommendation to establish an open access optical fibre National Broadband Network , however adopt of step wise implementation plan**
 - The prudent approach will be to follow a 'top down' strategy starting from cities and urban areas followed by the more remote parts where demand is likely to pick up later
 - Linking the 250,000 Gram Panchayats can **be phased over a period of three years** . Connectivity could be provided through wireless initially; this is proposed as an interim solution, until the 250,000 Gram Panchayats are connected by optical fibre
- **An SPV can be created to manage and augment the core in a Public-Private partnership (PPP) mode**
 - Existing optical fibre network of BSNL, other public sector undertakings like NTPC, GAIL, etc. or any private sector entity can be transferred to this independent and autonomous organization
 - SPV to be treated as providing an **essential facility**. The SPV will function under the regulatory mandate of TRAI and will be subject to the prevailing rules and regulations in respect of non-discriminatory provision of its facilities
- **The value of existing optical fibre chiefly lies in Right of Way (RoW) permission embedded in it. A single window system to expedite clearances and a rationalized tax structure across states will reinforce the commitment towards creation of additional fibre infrastructure.**



Recommendations - Building the Access Network

- We recommend that broadband networks be established to connect schools, government agencies and hospitals, especially rural telemedicine centers
- E-government applications can be a huge driver to promote digital literacy among the population. The **government should become an early adopter and promote creation of digital content, especially in regional languages**
- With regard to the revenue share arrangement between service providers and content developers for **Value-Added Services we recommend a wait and watch policy.**
- TRAI to specify a **standard tariff package which will be available to all consumers.** The package could consist of **basic internet of 256 kbps at a monthly charge of Rs. 200.** The 200 price point is not sacrosanct, but given the experience of mobile and Cable TVs it is likely to trigger brisk demand side expansion
- **Conditional cash transfers (CCTs) to eligible households** in the form of coupons either to be used for purchase of CPE (capital grants) or access to broadband services and internet services (allowances) at cyber cafes.
- Provide for **low-cost computers and other user devices**, in sectors such as education and promote digital literacy programmes
- Expand the **definition of Universal Service to support individual access to broadband**



Recommendations - The institutional framework

- The current institutional mechanism for telecom often results in **overlapping jurisdiction** and conflict between institutions. A case in point is encryption. **Harmonisation** is desirable to avoid conflict and to introduce predictability
 - In the future mobile TV licenses may potentially give rise to conflicts between the I&B Ministry and the DoT; it is imperative to nip these in the bud by clearly defining the roles for each institution in regard to such conflicts



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Thank You

