

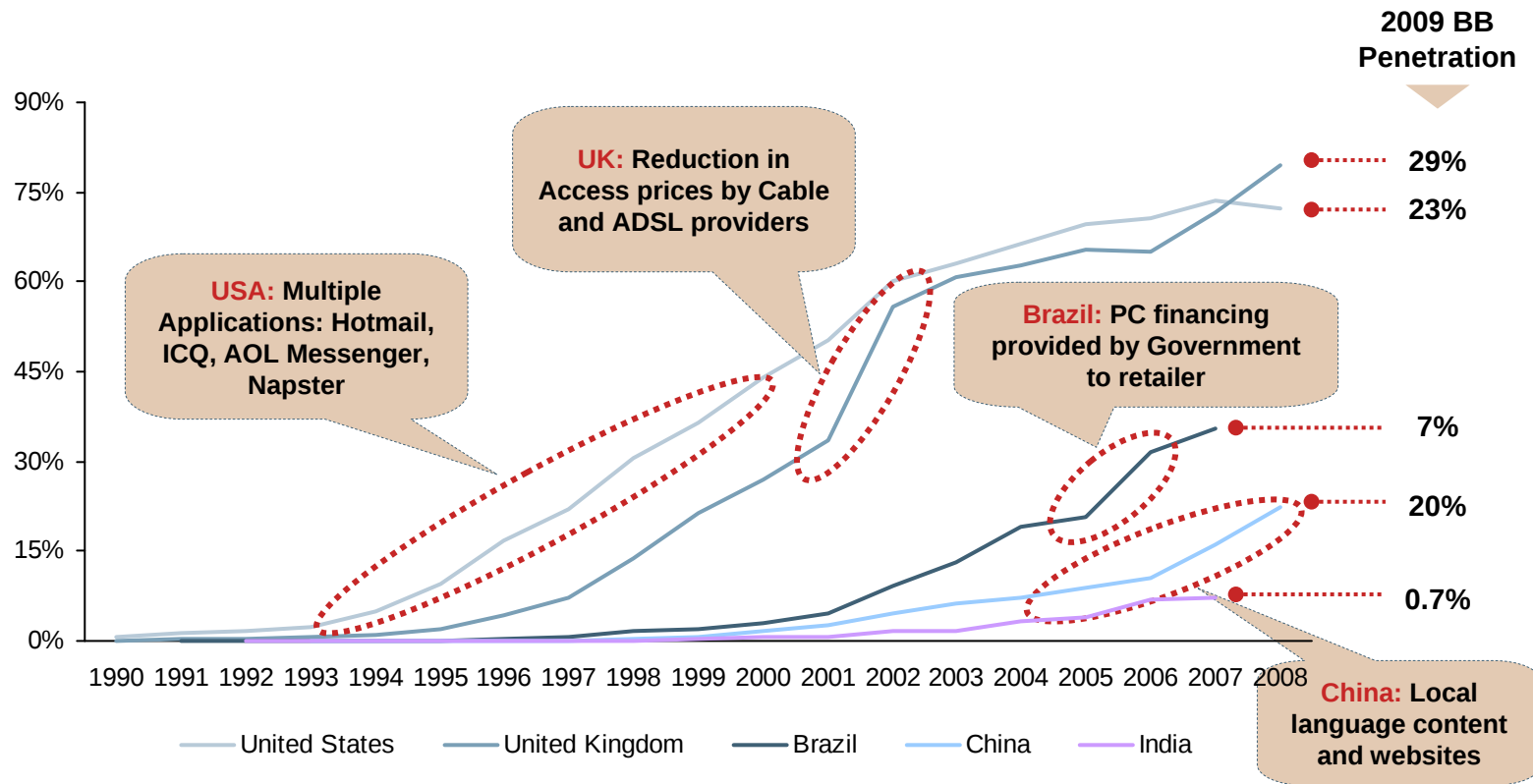
Demand Drivers for Broadband: Global Experience and Learnings for India

National Broadband Initiative Workshop

16th April 2010

Inflexion points in Internet / broadband growth across markets have been triggered by different drivers

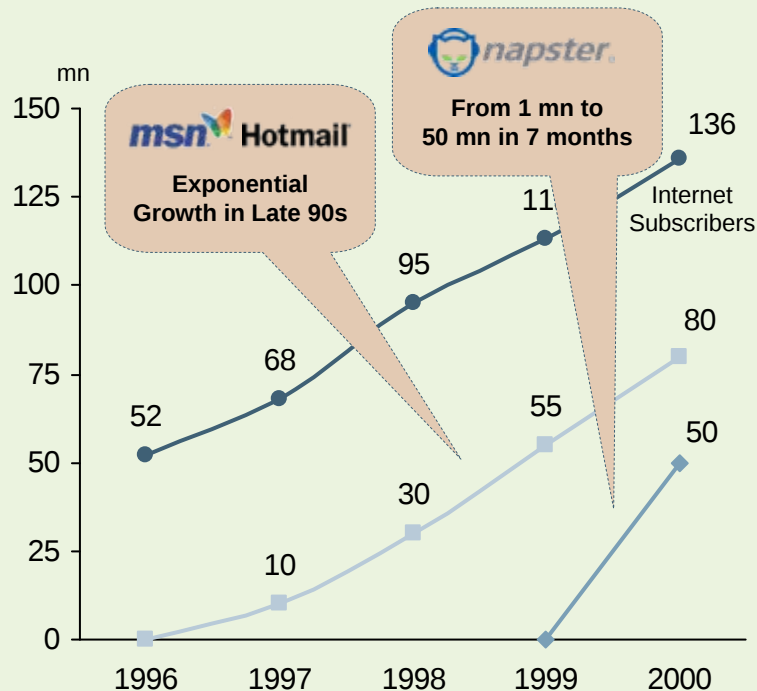
Internet / Broadband Penetration, Inflexion Points and Primary Drivers
(USA, UK, Brazil, China and India)



Internet adoption in late 1990s in the USA was driven by emergence of variety of web-based applications

Applications

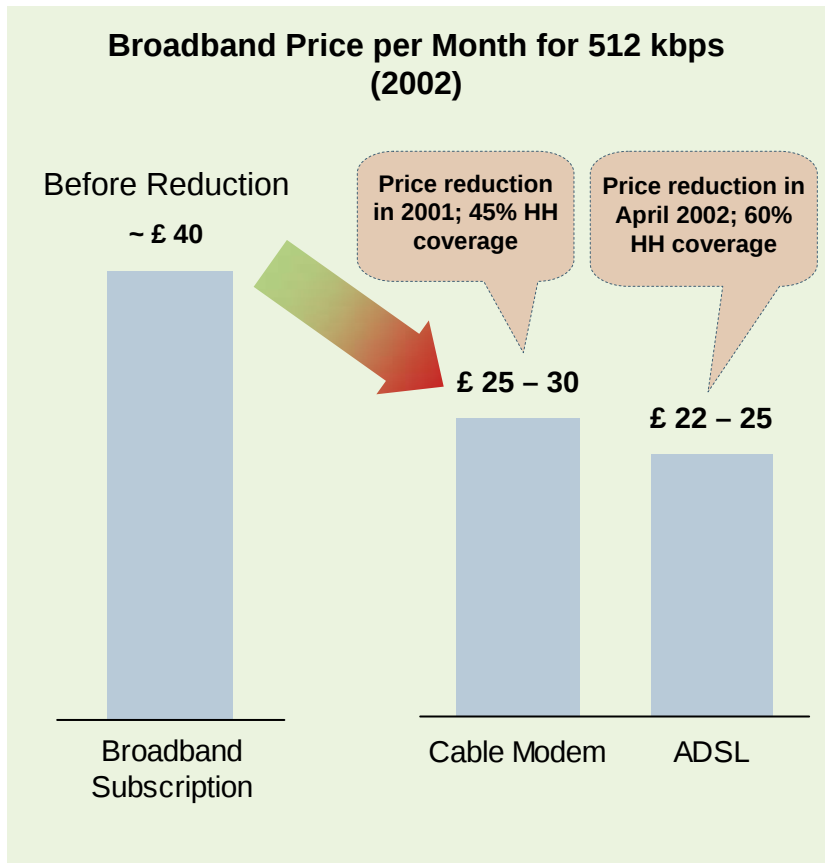
Adoption Trends of Different Applications in 90s¹



- In the mid to late 90s, multiple applications and services emerged - webmail (Hotmail), instant messenger (ICQ / AOL Messenger), file sharing (Napster), shopping (Amazon)
- These applications saw immediate adoption as consumers saw the convenience in being able to communicate / share / transact instantly
- In addition, there were other enablers such as graphical user interface OS (Windows), that enabled a layman to use a PC, together with declining prices for PC making them affordable as a household item

In UK, ~40% reduction in access charges triggered a 25% increase in internet penetration in one year

Access Price



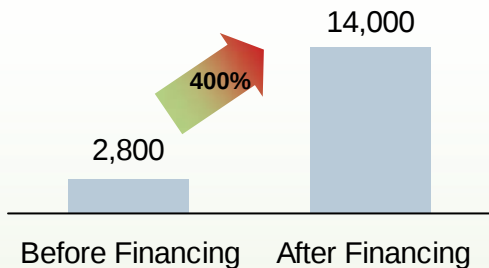
- Broadband subscription prices were reduced by up to 45% in 2001 / 2002
 - ♦ Cable modems gained nearly 60% of UK broadband subscribers due to 2001 price reductions
 - ♦ April 2002 reductions in BT's wholesale prices (by 40% for its main residential product) encouraged the ADSL market
- In addition, self-installation kit with instruction manual increased user convenience and decreased dependence on engineer and truck-roll cost for service providers

Driver for internet adoption in Brazil and Mexico was low cost financing of PCs by Govt. and service providers

Device Price

Government Initiative to Finance PC in Brazil

Sales in 2 weeks for a retailer¹ with financing from state owned bank



- Under Government's Popular PC project, financing is given directly to retailers to be passed on to consumers
- Sales of PC increased by up to 400% for retailers who managed to get the financing from Government (strict ownership condition and computer cost limit were put on the firms for receiving financing)
- Government's promotion had an indirect impact on sales of other retailers (without financing support)

Service Provider Initiative to Finance PC in Mexico

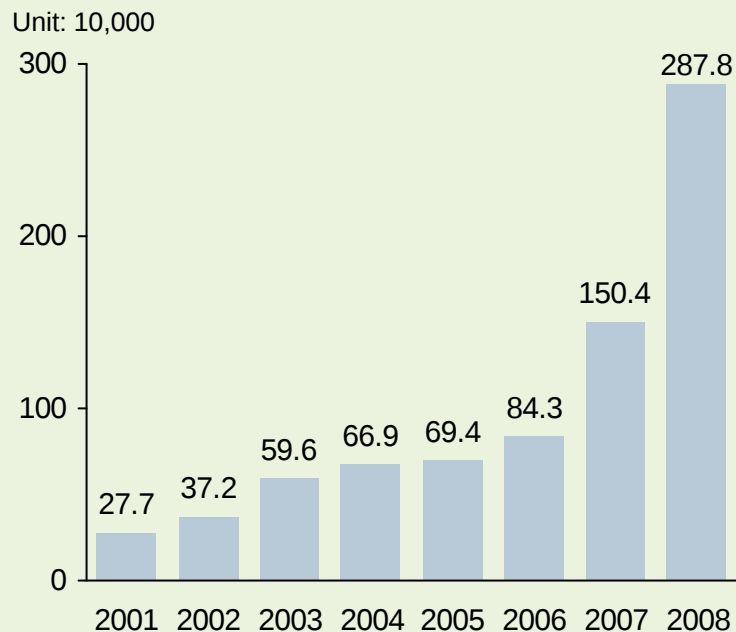


- Telmex, the leading service provider in Mexico, offered PCs at 12, 24 and 36 month plans; no subsidies were offered & PCs were sold at original cost
- Service positioning: Instant credit approval, no credit card is required, reasonably priced PCs with low-cost financing; subscription to broadband optional
- 25% incentive discount given to existing and new broadband customers
- Nearly 100% of PC buyers were converted to broadband subscribers to benefit from the 25% discount

In addition to other enablers, local language sites were a key growth driver for the China internet market

Local Language

Cumulative Number of Websites Registered in China



- Local language is the norm for websites in China; there were 2.87 mn websites whose domain names were registered in China by 2008
- Adoption of leading information search sites such as Yahoo! and Google was slow due to the availability of Chinese equivalents such as Baidu
- Availability of information / content in local language can be seen as a key driver for internet adoption in countries / regions with limited English language capabilities

In summary, the adoption drivers are lower device and access prices in addition to relevant content / apps

1

Device Price

- High PC price is a barrier to internet / broadband adoption by mass market

2

Access Price / Experience

- Access price has to come down, without a deterioration in end user experience

3

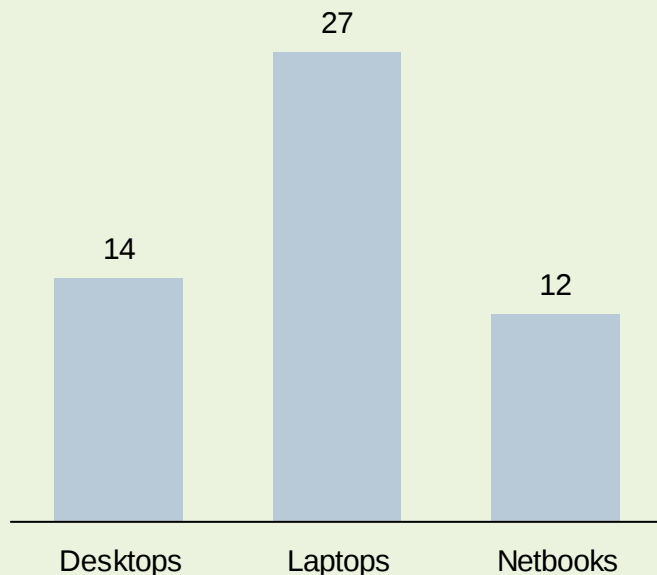
Local Content / Applications

- Availability of locally relevant content will increase the utility of internet / broadband

Device financing, bundling and shared access could be the mechanisms to increase device affordability

1

Entry Level PCs and Netbook Prices
in India (INR '000s)

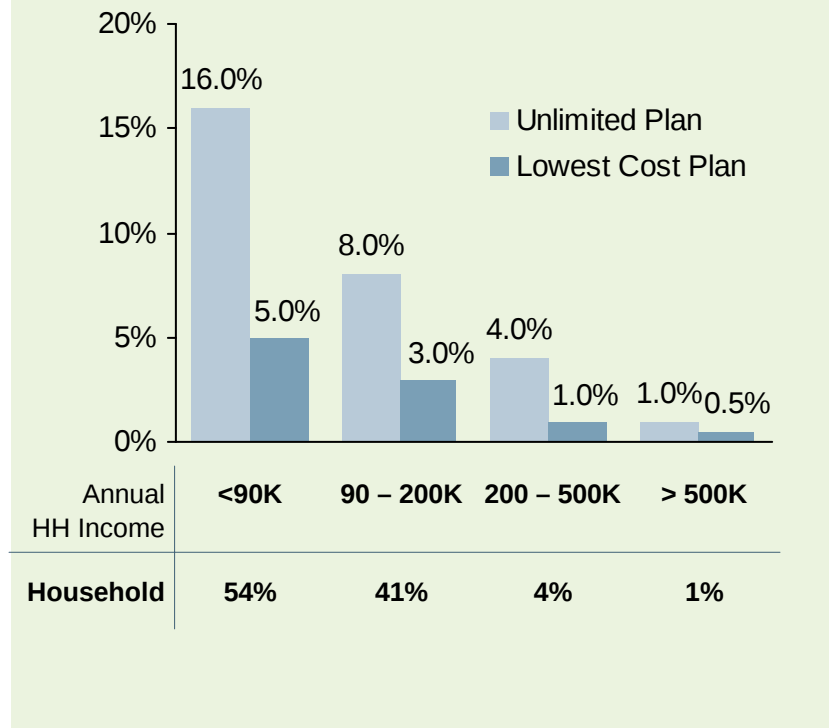


Initiative	Description
Bundled Devices	- Devices bundled with service plans: Due to a monthly relationship with the consumers, carriers are well positioned to offer bundled devices - In Europe, almost all netbooks are sold by carriers bundled with a data plan
Financing Options	- Similar to the initiative in Brazil, Government can finance the distributor / retailer to boost PC sales - USO fund can be used to extend this financing scheme
Shared Access Device	- Government has plans to create 116K CSCs as access points for 600 K villages; 40 K CSCs have already been rolled out - Implementation of such initiatives should be accelerated coupled with consumer education

In addition, broadband access price needs to decline to increase acceptance by the middle income segments

2

Broadband Access Price as % of Monthly Income

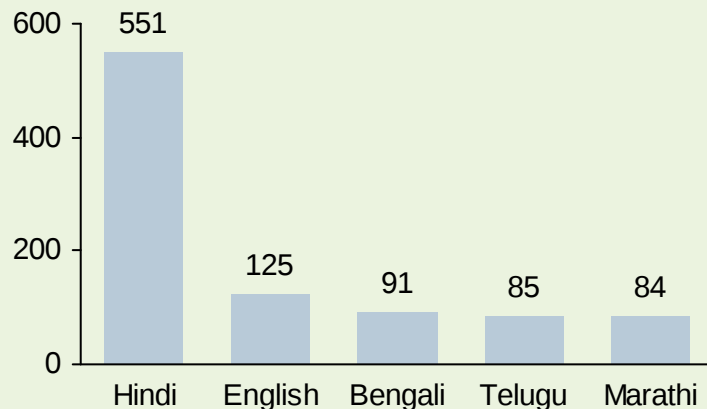


- Broadband prices have reduced to INR 125 per month with usage limit of 125 MB; initial deposits / installation charges of INR 875
- However consumers are not comfortable with fixed plans as they are wary of their usage and the actual charges they may have to pay
- Unlimited plans start at INR 500 per month; this forms more than 8% of monthly income for 95% of the households
- On average, Indians spend 12% on housing & utility and 2 – 3% on communications
- Broadband access cost has to decline further for majority of households to incur it as part of monthly expenses
- For the urban areas, this is likely to be driven by market competition; in rural areas, Government initiatives are required to make access more affordable

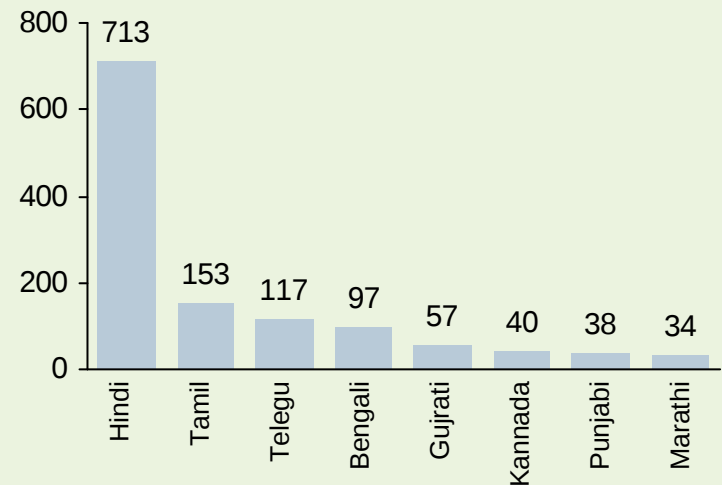
Given the low levels of English literacy, availability of local language sites will help drive adoption of internet

3

**Languages Spoken in India
(Number of speakers, mn)**

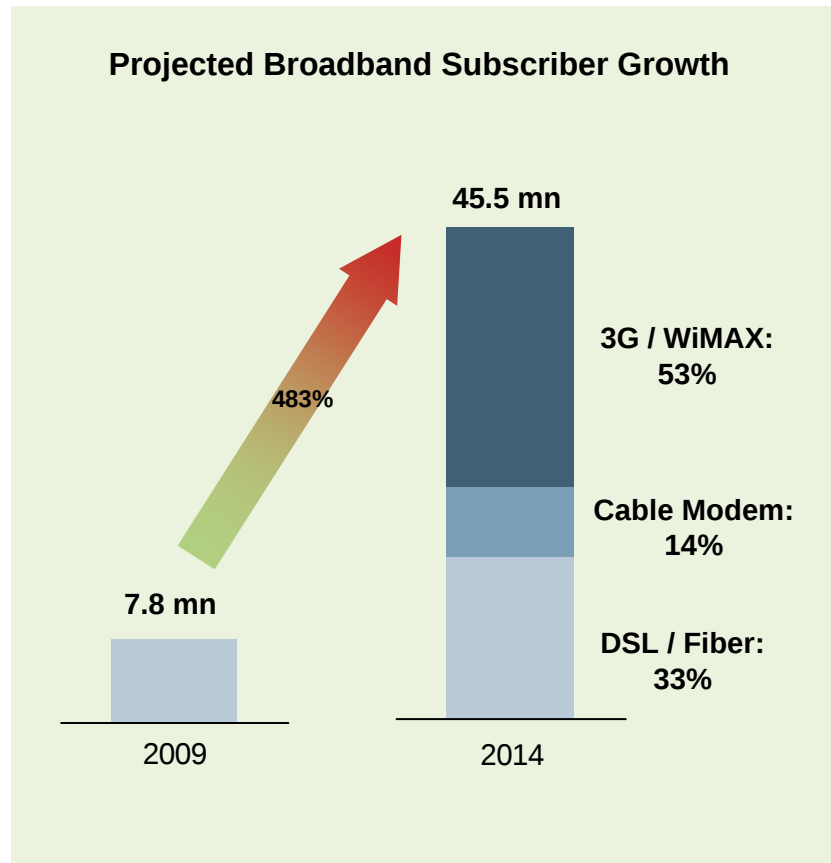


Indian Language Websites



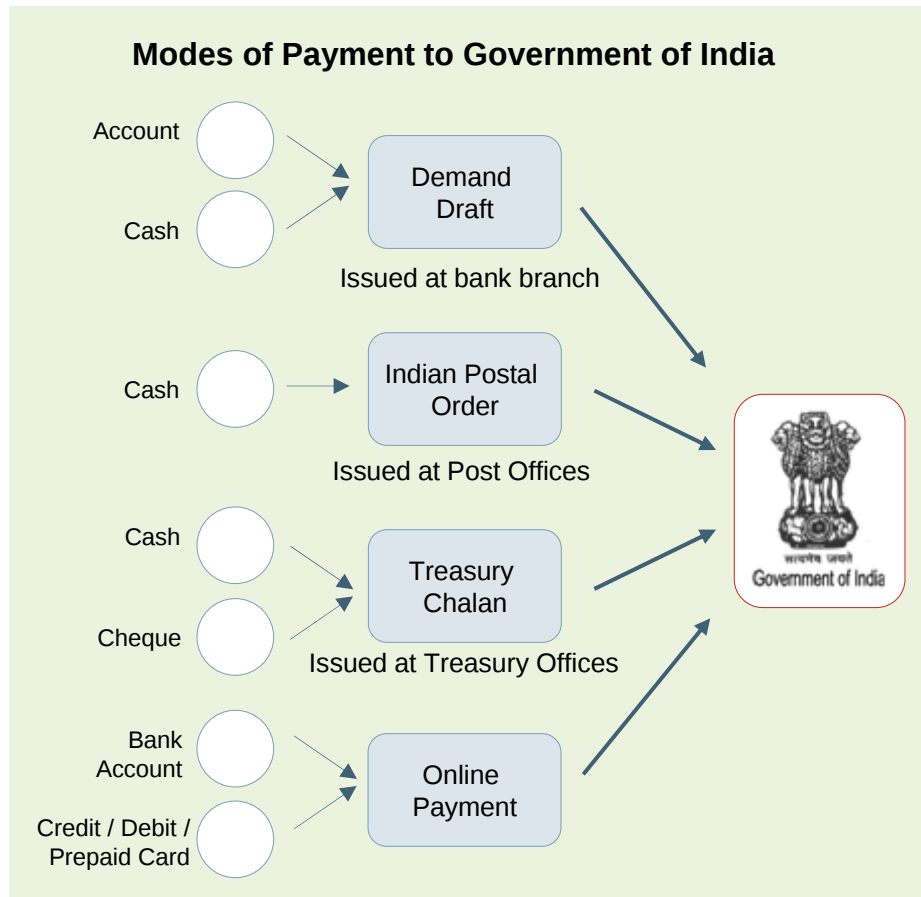
- Only about 10% of the population is English speaking, however there are only 1,250 non-English sites
- Low number of local language sites reflects the poor availability of localized online content to be accessed by semi-urban and rural masses
- Initiatives are required to create local language content relevant for majority of the population

Policy initiatives and market interventions are required to grow the broadband market in India



- **Market changes required**
 - ♦ Reduction in broadband access prices
 - ♦ Bundling of devices with service plan
 - ♦ Development of websites in local language
- **Policy initiatives**
 - ♦ Usage of USO Fund for financing / subsidizing access devices
 - ♦ Policy initiatives to encourage development of websites in local language

To kickstart this growth potential, all Govt transactions beyond a certain value can be mandated to be electronic



- Currently, all payments to Government authorities are either through demand draft, postal order, treasury chalan or online payments¹
- Non-online processes are cumbersome and requires the payee to visit a bank, post office or the treasury office. Only few entities use the online system
- Payment from Government is also mostly check based
- If it can be mandated that all Government transactions beyond a certain level (e.g. INR 50K) be electronic, any entity dealing with the Government and Government offices will require internet access and electronic banking for conducting ongoing business

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