Unbundling the Local Loop and Regulatory Measures to Encourage Broadband

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Unbundling 1

- In the 1960s, IBM dominated the computing industry which consisted of computers. IBM only sold its hardware and software as a bundle. There was no software industry.
- In 1968 IBM was forced to unbundle its software from its hardware and the software industry was born
- Despite continued technological improvement and growth in hardware, by 1986 the software industry was larger than hardware, and is now more than 10 times as large and growing faster

Unbundling 2

- Software development (products) has led to software ***services*** that are growing even faster than software products
- An unbundling of Windows from Microsoft's related software services will open even more opportunities for specialized market players
- Software services have led to ***applications*** which are expected to grow faster than services and provide unexpected benefits

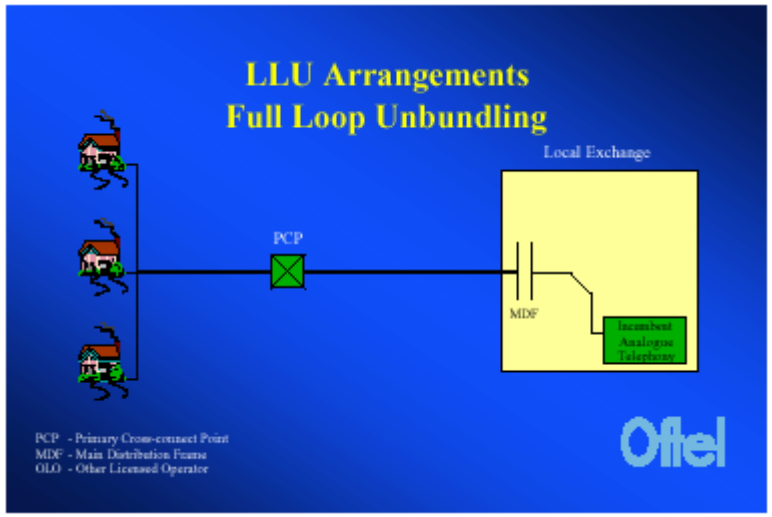
  - holy Skype, Now Joost,what's next!

Definition Of LLU

- **Local loop unbundling** (**LLU**) is the regulatory process of allowing multiple locally- and national-based telecommunications operators to make use of connections from the telephone exchange's central office to the customer's premises. The physical wire connection between customer and company is known as a "local loop," and it is owned by the incumbent local operator

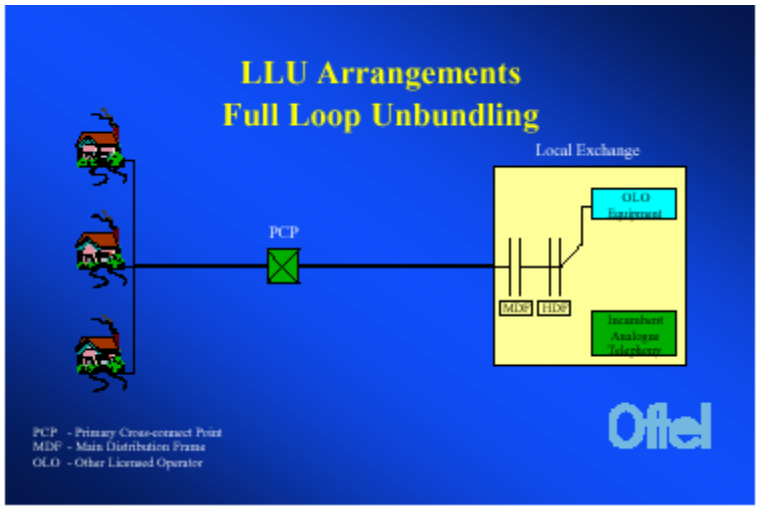
Before Unbundling

- Each pair of copper wires run from the customer's home to the primary connection point (PCP). The PCPs are the cabinets that are located at the side of the road. The PCP connects the wires from the customer's home to a pair of wires from the exchange. Inside the exchange the wires in the external cable are terminated on the main distribution frame (MDF) and then are connected to the internal exchange equipment.



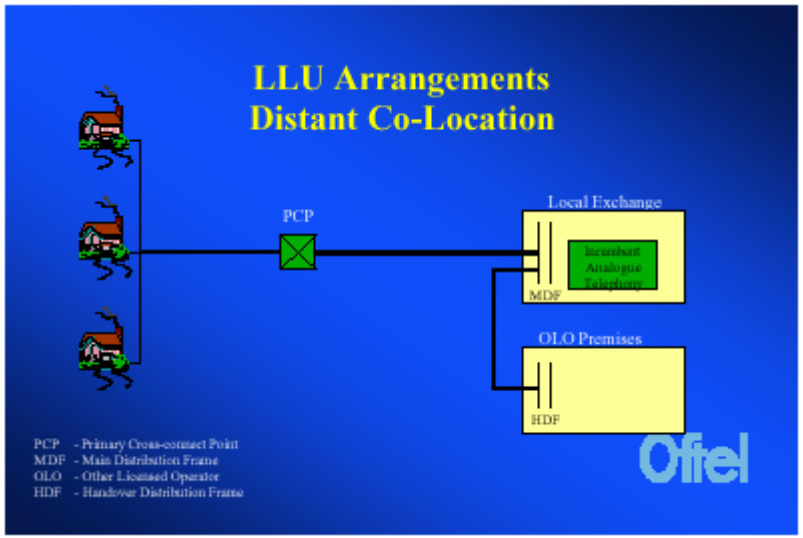
After Unbundling

- Inside the exchange the wires are connected to the MDF. They are then connected via an internal tie cable from the MDF to the handover distribution frame (HDF) which is adjacent to the OLO's equipment. The HDF (Handover Distribution Frame) is used to terminate the cable from the exchange and to make the pairs available to the operator



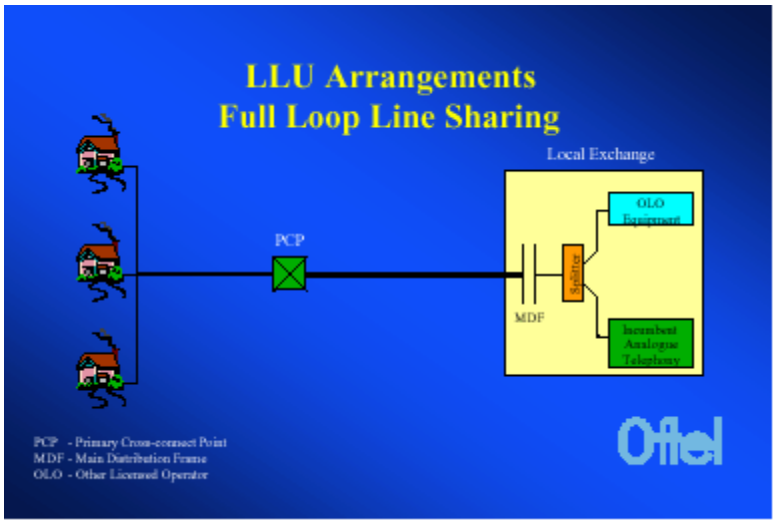
Distance Co-Location

- Distant co-location is a form of unbundling where the operator's equipment is located in a building outside of the incumbent's exchange.
- A tie cable is used to connect the MDF at the local exchange to the HDF at the distant site, but in this case an external tie cable is used.



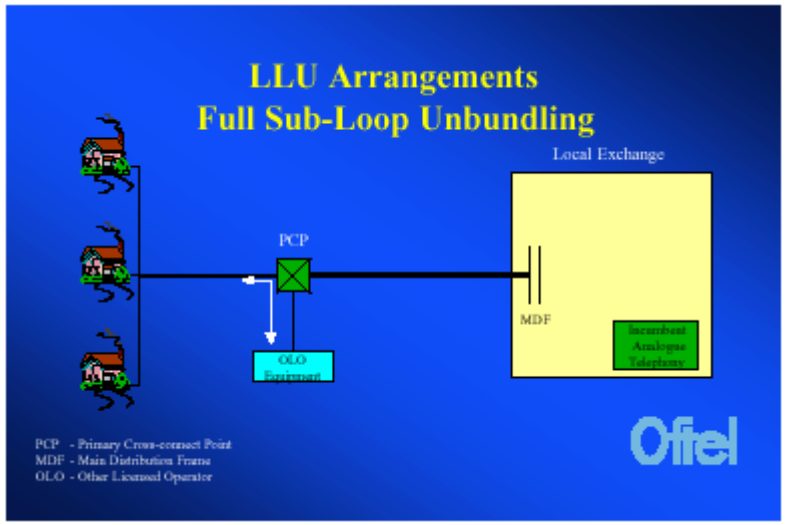
Full Loop Line Sharing

- Line sharing is a form of local loop unbundling where the incumbent and other licensed operator share the same line.
- From the MDF the wires are connected to a splitter (which separates the frequencies for voice telephony and those for higher bandwidth services). The incumbent provides voice telephony over the lower frequency portion of the line, while another operator provides DSL services over the high frequency portion of the same line.



Full Sub-Loop Unbundling

- The equipment that transfers the incumbent's line to the other operator is adjacent to the PCP (the cabinet by the side of the road) rather than the telephone exchange. This arrangement will be used for distributing very high bandwidth services, which can only be sent a short distance on the copper pair.
- Sub-loop unbundling is a form of unbundling where the line is handed over to the other operator outside of the telephone exchange



Full Unbundling Access

Shared Access

Frequency spectrum bands for Full Unbundling Access and Shared Access

Significance of Network Unbundling

- Industry Sectors - Equipment, Operator Networks, Services
- Fixed and Mobile
- Basic Network Layers
- *Content
  *Communication Services
  *Network Protocols, OSS & Management *Equipment & Facility Capability

The Internet

Made possible by policy and regulation requiring unbundling of telecom network

- Terminal equipment
- Value-added services (data)
- Specialized voice services
- Retail public services
- Network facilities and services

The Internet required all of these to get off the ground

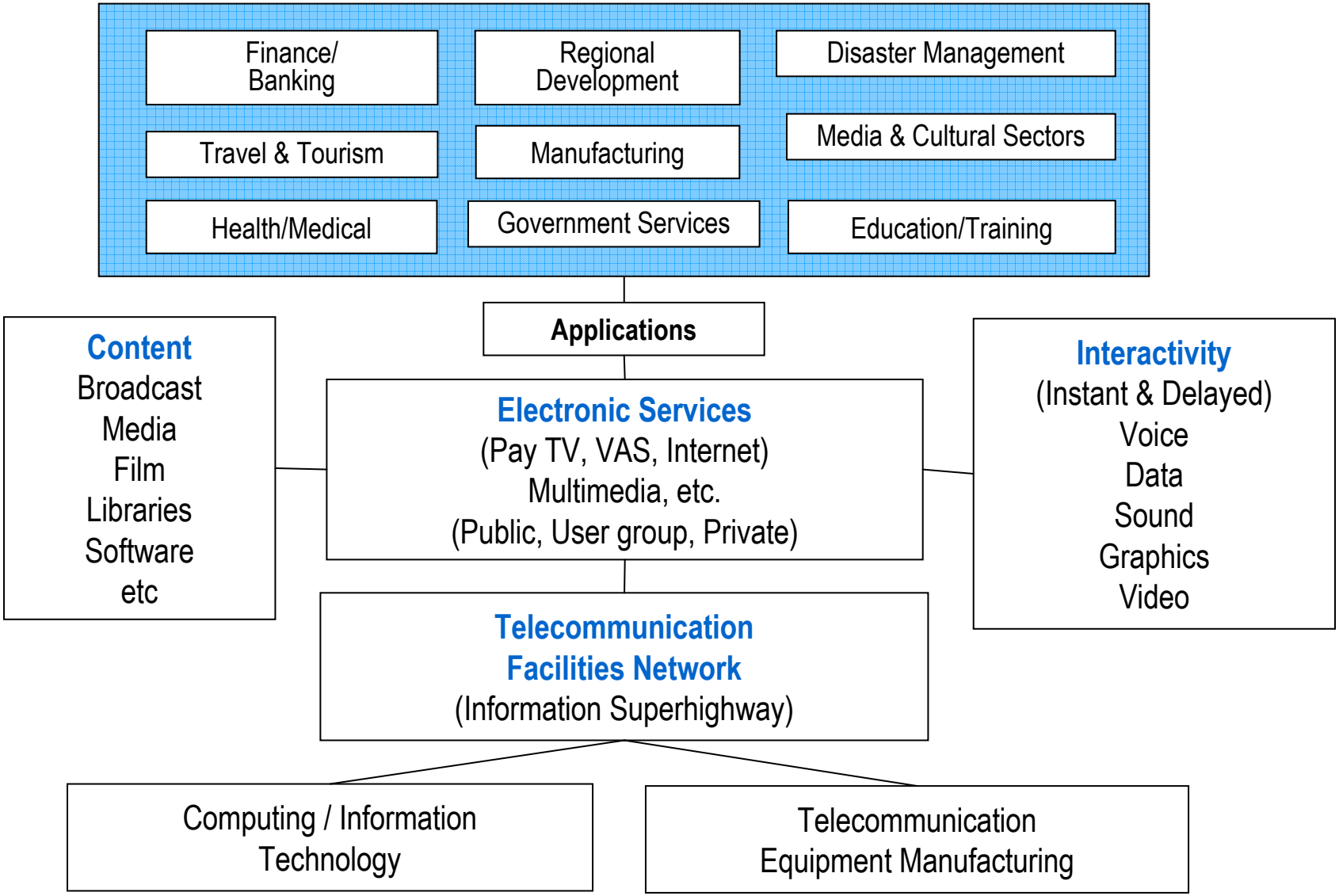
Monopolist and Competitor Views

- *We must bundle facilities and services. Otherwise will be stuck with only providing the plumbing for information societies*.

Old Telco Executive

Why do we treat our wholesale customers so badly. In my old job they were our most profitable customers

New CEO of Incumbent Telco, coming from a competitive industry

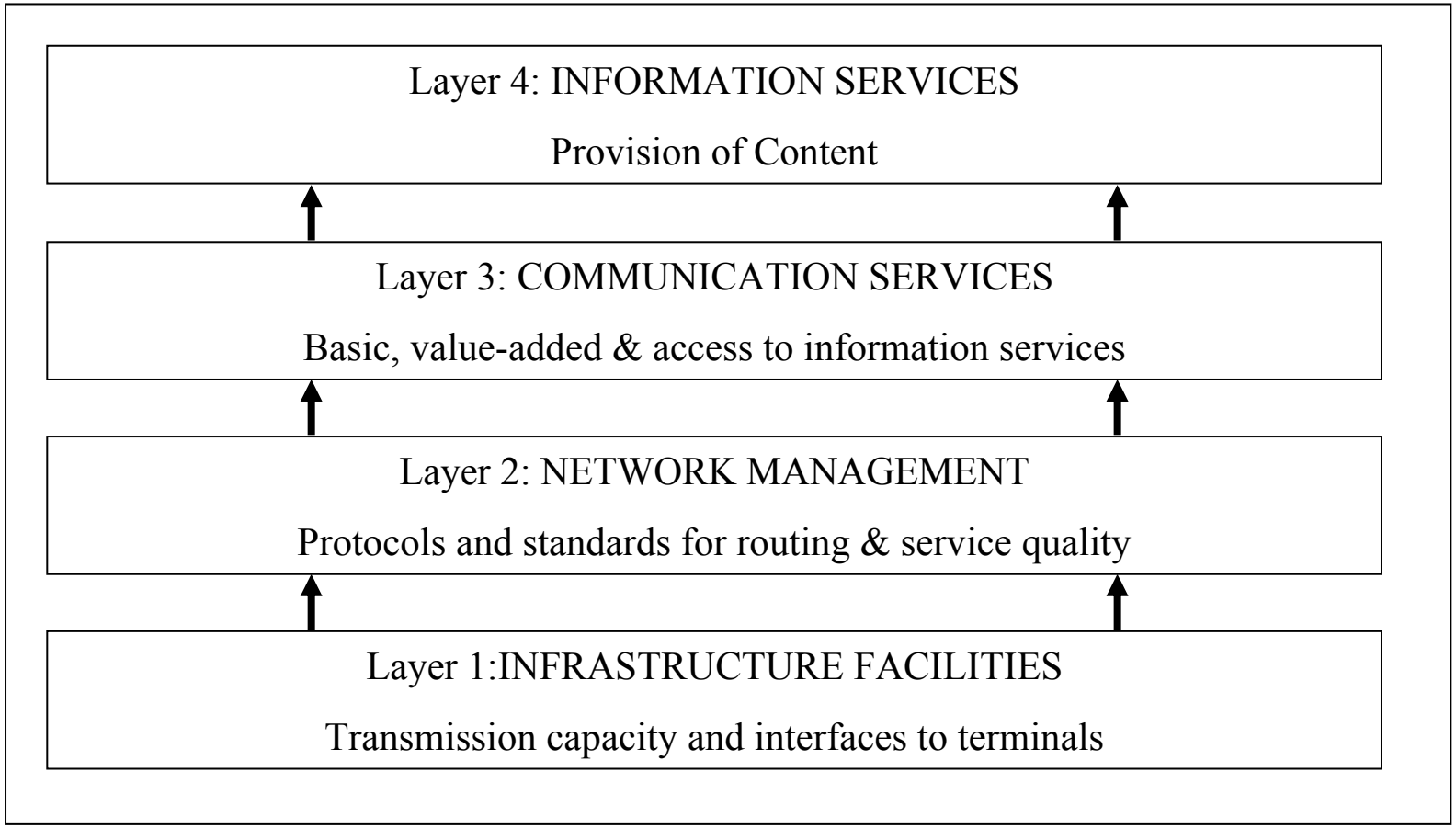


INFORMATION INFRASTRUCTURE

Unbundling, Convergence and Information Societies

- In the old regime, a single specialized service, voice, and its specialized facilities were supplied as a bundle by a monopoly
- In the new regime, an unbundling of network functions provides opportunities for the participation of many specialists in hardware, software, services, applications and content
- Bundling restricts these opportunities, reduces the benefits and slows growth and development

From Vertical to Horizontal Markets



Unbundled Local Loop Access 2

- Progressive incumbents will come to see the unbundled local loop as a vehicle for providing profitable wholesale services. Regulators must ”help” them come around to that view
- BT and Ofcom (UK) provide a good example. BT is now restructured with retail and wholesale divisions that deal with one another at arm’s length

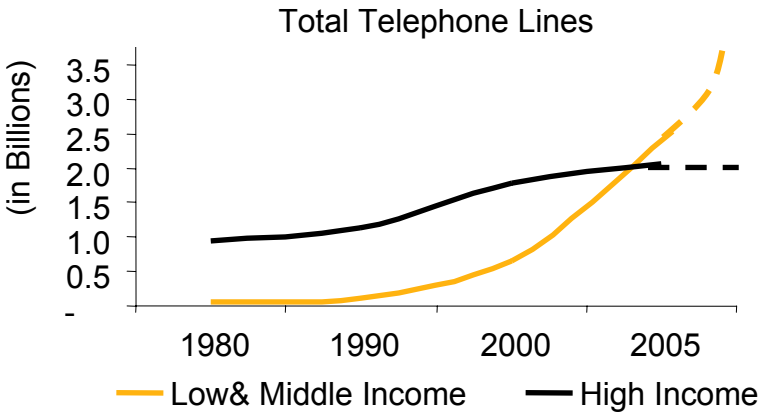
“The world at your fingertips”

Busy Internet (Ghana)

Power of SMS (Kenya)

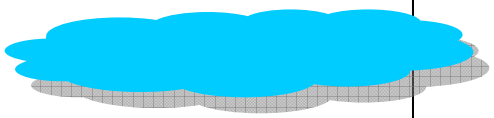
Access: The Unfinished Agenda

A lot of progress…



…

…but market gaps remain



1. Coverage

2. Service

3. Costs

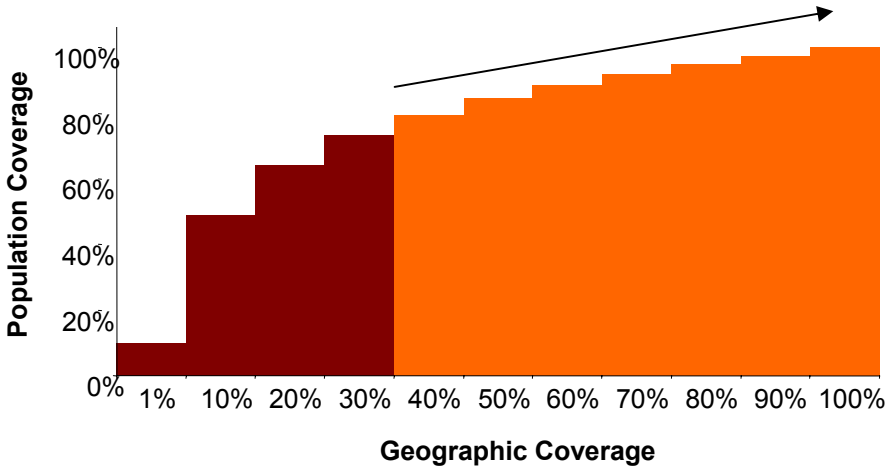
WTO

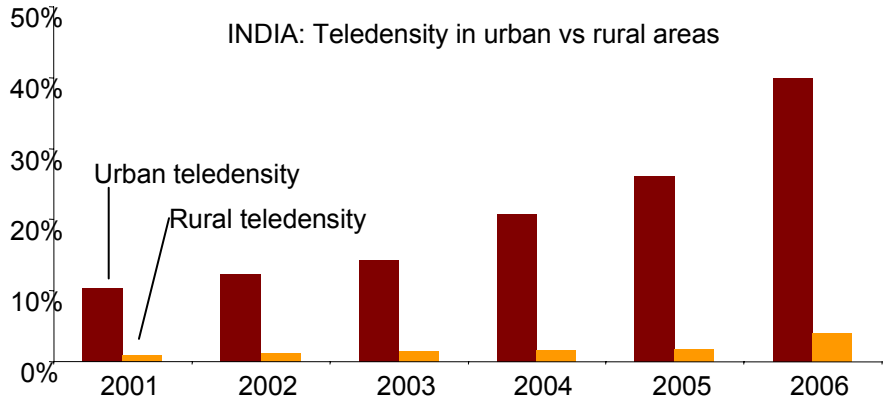
- Some provisions of WTO telecommunications law can be read to require unbundling:
- Sect. 5(a) of the GATS Annex on Telecommunications (1) requires WTO Members to guarantee service suppliers "access to and use of public telecommunications transport networks ... for the supply of a service". New entrants argue that without LLU they cannot supply services such as ADSL.
- Sect. 2.2(b) of the 1998 Reference Paper (2), to which some Members have subscribed, requires "sufficiently unbundled interconnection" with major providers. However, the Paper's definition of interconnection appears to exclude LLU.
- Sect. 1 of the Reference Paper requires Members to maintain "appropriate measures ... for the purpose of preventing [major] suppliers ... from engaging in or continuing anti-competitive practices." New entrants argue that such practices include not giving competitors access to facilities essential to market entry, such as the local loop.
- The question has not been settled before a WTO judicial body, and, at any rate, these obligations only apply where the respective WTO Member has committed itself to open its basic telecommunications market to competition. About 80 (mostly developed) Members have done so since 1998.

Access: Gaps in Coverage

CHALLENGE

70% of the population covered with only 30% of the geography



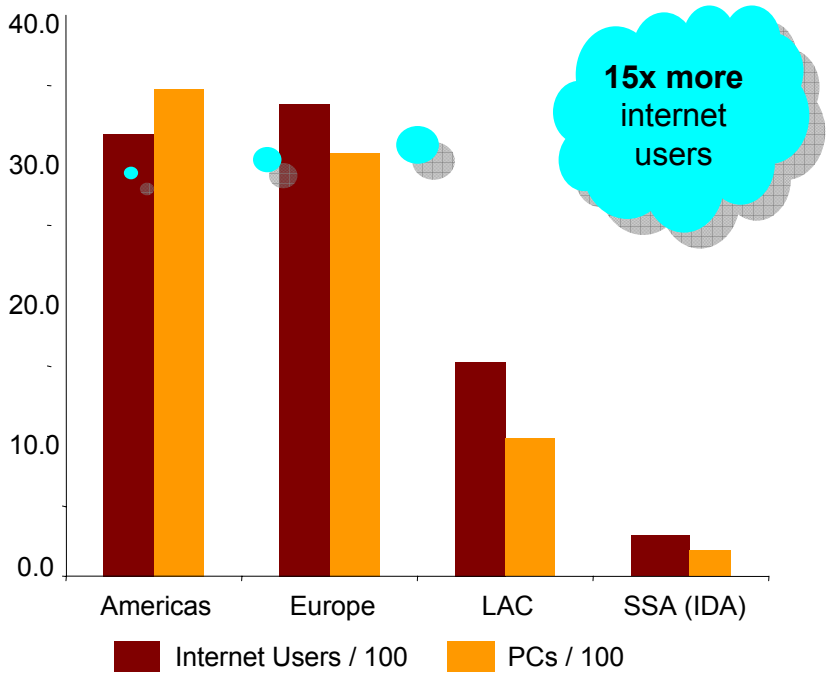


WHAT ARE WE DOING?

Access: Gap in Services

CHALLENGE

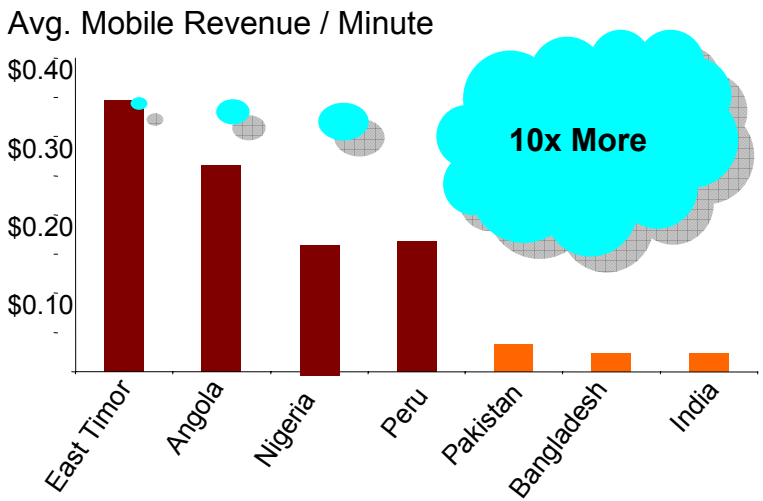
Despite impressive growth in access to voice, access to the internet remains a challenge

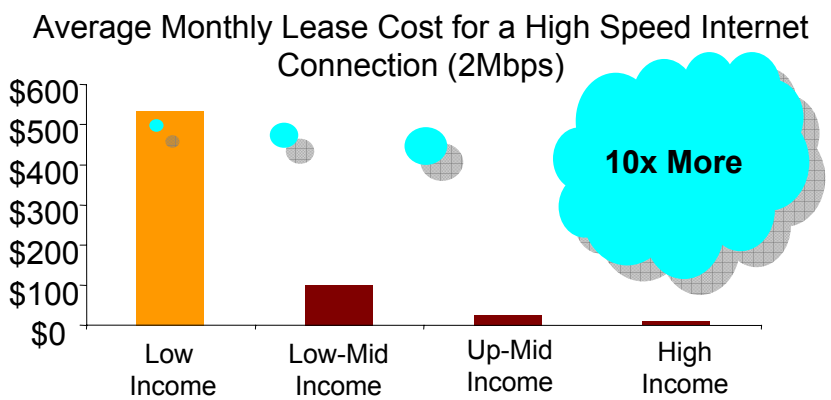


WHAT ARE WE DOING?

Access: Gap in Costs

CHALLENGE

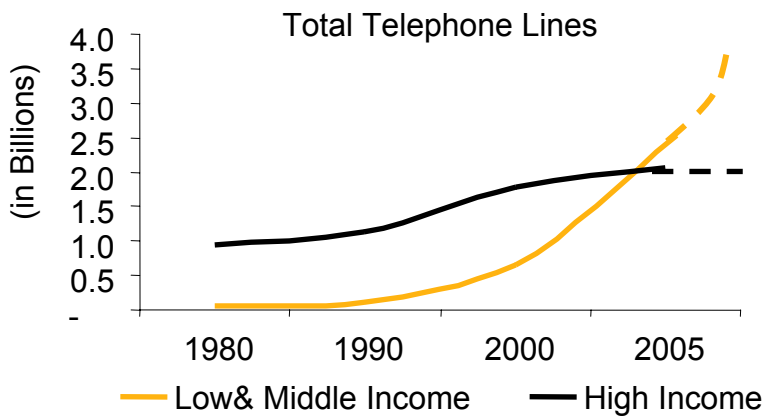


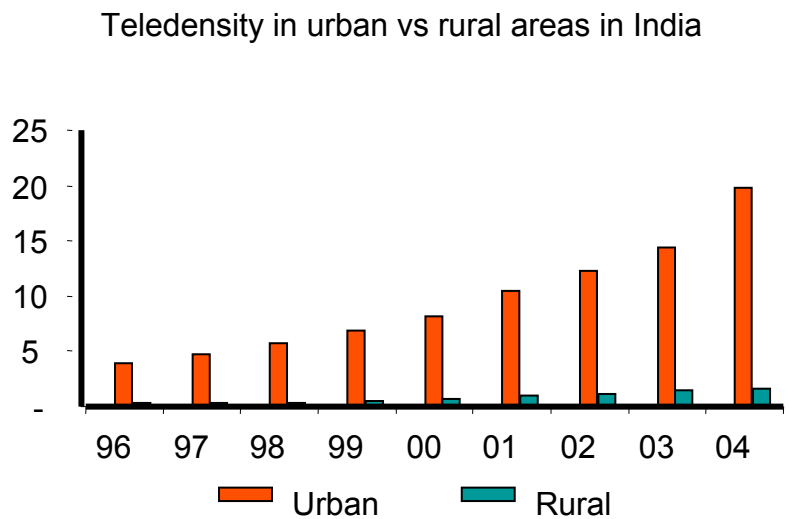


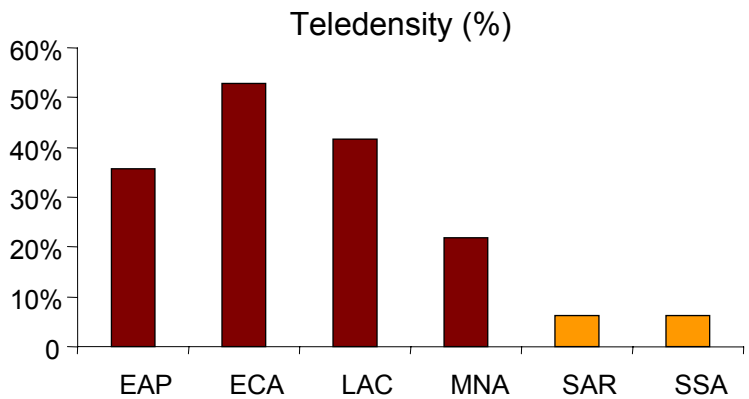
WHAT ARE WE DOING?

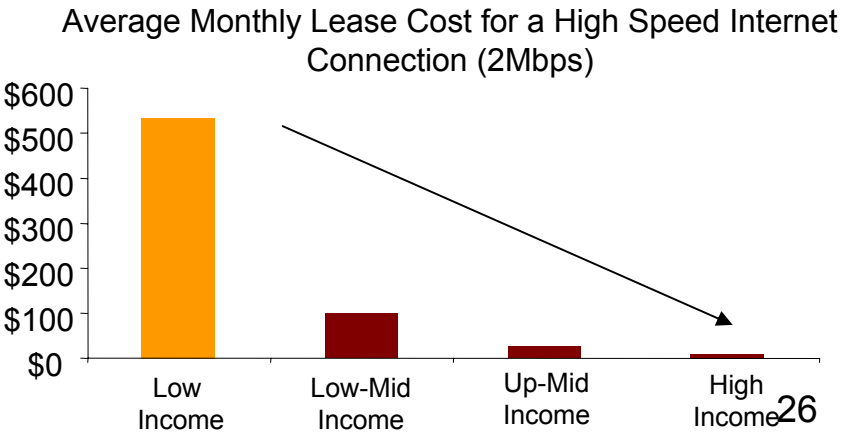
Access: “Unfinished Agenda”

Emerging markets rising…access agenda unfinished





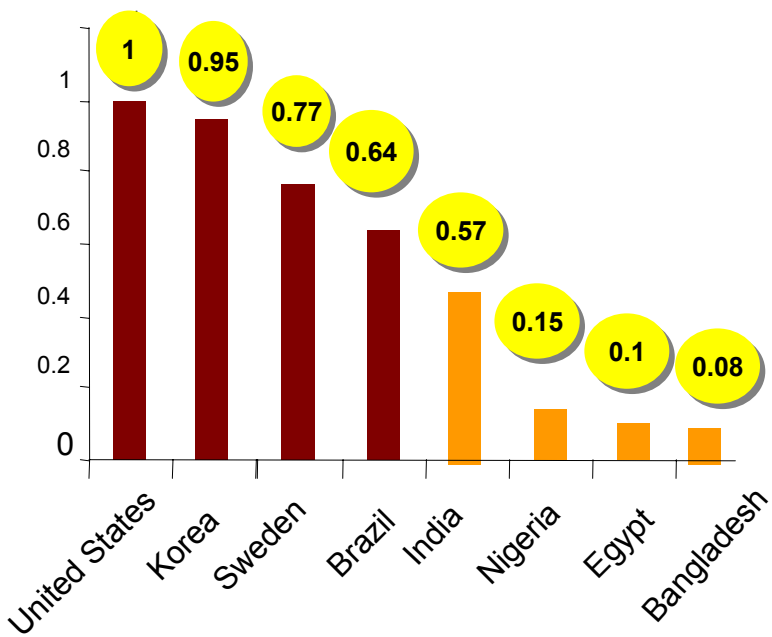




Mainstreaming: “Unrealized Agenda”

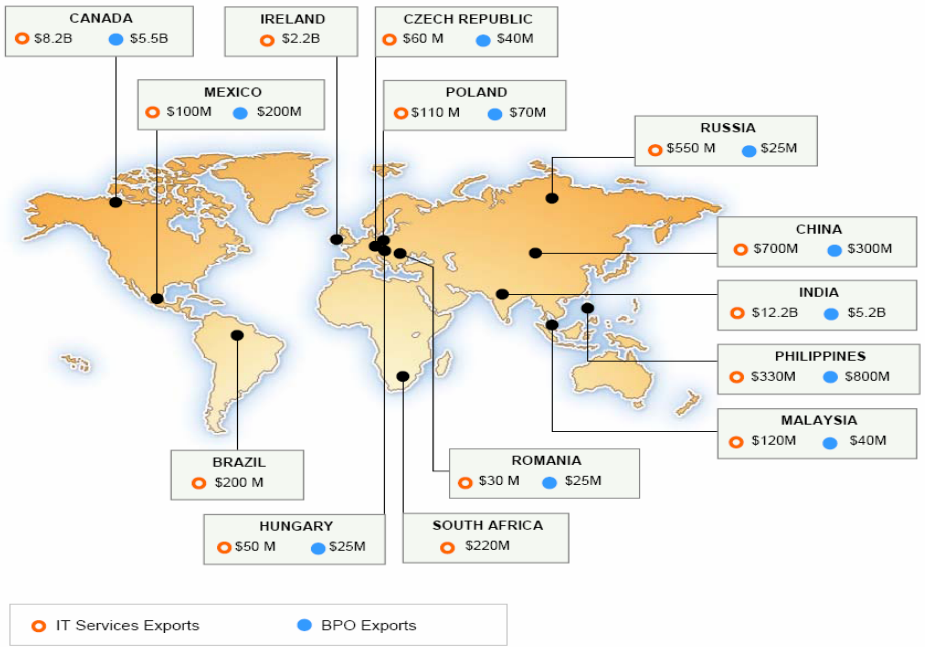
Some have leveraged ICT in their economy

E-Government Index in Selected Countries (2005)



…but there is still room for more

BPO and IT Enabled Services Industry



- $300 Billion Industry … only 10% realized
- India / Canada / Ireland have captured 75% of the realized market

Innovation: “Huge Potential”

THE LARGEST DISTRIBUTION PLATFORM IN THE WORLD

As of today – 2.7 Billion mobile subscribers

75% of the world pop. is covered by the mobile footprint

Almost 70% of households worldwide have access to mobile service

In the next 15 minutes…
15,000 people will be added

Future Unbundled Local Loop Regulation

- The future is broadband access to customers using a variety of technologies
- For a major portion of customers in urban areas, access will be best achieved via unbundled local loops
- Broadband reference interconnection/access offers that are publicly known can provide a focal point for assessing reasonabless and responsiveness to demand.

Another Look At LLU

- In this era of wireless era of HSPA,WiMax and LTE etc Should we still focus on LLU
- Spectrum is an issue
- For growth of broadband Spectrum management is the key issue specially for developing countries

Few Words On Spectrum Management

- The Regulatory Measure To Improve The Broadband Is Better Spectrum management
- It is Availability Of Spectrum
- It is price of spectrum
- Spectrum managers have to move faster than telecom R&D specialists. on availability of spectrum should not hinder the growth of technology

Spectrum Management(Contd.)

- Earlier Spectrum users were limited Govt. departments
- Now users have exploded
- Spectrum management process is to be revamped
- Spectrum management to move from “Land” approach to “Sea” approach
- SDRs,MIMO,OFDM , Smart Antennas and other new technologies would make it possible
- Be receptive to new ideas and open all doors.Let the knowledge flow from all directions

THANK YOU