Broadband: ready to invest? Disruptive changes and new investment models

Global Forum
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Disruptive changes

**Underpinning trends (1)**

- The data Exaflood calls for network investments...
  - Rapid shift in consumer behavior towards data consumption, leading to network capacity crunch:
    - 34% CAGR in global IP traffic (2009-2014)
    - 108% CAGR in global mobile data traffic (2009-2014)
  - Mobile data traffic is rocketing (Ipad and connected devices boom)
  - Example of Mobile Data Plan vs network cost forecast:

![Conservative traffic model assumptions](image-url)
Disruptive changes

Underpinning trends (2)

- More devices and demand, less revenues
  - Increasing subscriber take rate for apps and (multiple, mobile) devices
  - Increasing BW per app
  - Increasing number of rich media/video-enabled devices
  - Increasing device capabilities
  - Increasing network (CapEx) costs
  - Increasing OpEx costs
  - Increasing dilution of role in subscriber value chain

- Shift of the value chain and brand image in favour of Other The Top (OTT) players
  - Emerging balance sheet strength and equity value of content players vis-à-vis carriers
    - Content: >20 P/E ratio (H1 2010) (Google, Yahoo, Amazon,...)
    - Carriers: <13 P/E ratio (H1 2010) (FT, BT, AT&T, Verizon,...)
  - Growing unbalanced IP interconnection flows
  - OTTs image is well positioned vis vis end-users
Why and how Government step-in

Why do Public Authorities step-in?

- Growing awareness of broadband investments spill-over effects (GDP, productivity and competitiveness)

- To achieve ubiquitous coverage of very high speed connectivity and tackle future challenges of society (social inclusion, ageing population, climate change)

- To complement private initiatives in policy driven areas and maximize network’s social benefits, minimize public funding thanks to perequation.

- To ensure network openness and cost-effective connectivity through competition while encouraging new investments needed to handle data explosion

How do Public Authorities (governments and regulators) intervene?

- Mandating infrastructure sharing models to lower market entry barriers (ducts, in-house wiring, poles and masts sharing, NGA recommendation, co-investment in wire-line and wireless passive infrastructure)

- Organizing new competition models (NBN model, open rural LTE networks)

- Fostering competition and coverage through PPP like projects (recovery plan in the US, digital and broadband plans in the EU and APAC, EU State Aid guidelines encouraging PPPs)
Public driven initiatives for VHS broadband investments

Different types of access competition models

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<tr>
<th>Active infrastructure-based competition</th>
<th>Service-based competition</th>
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<tr>
<td>- Access to non replicable passive infrastructure (ducts, poles, masts, in house wiring) triggers infrastructure competition in urban/suburban dense areas</td>
<td>- A single network is rolled-out and shared: « regulated monopoly »/functionnal separation model</td>
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<td>- In medium/low density areas, competition is based on a combination of access to passive infrastructure and bitstream wholesale</td>
<td>- Competition is based on bitstream wholesale (layer 2) or Radio Access Network /spectrum sharing</td>
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<td>- State Aid is allowed for fibre access networks and in backhauling in underserved areas</td>
<td>- Universal coverage is a first priority - projects are government driven</td>
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<td>- Differentiation between operators is based on access to physical network resources- LLU</td>
<td>- Differentiation between service providers is based on access to logical network ressources (fixed or mobile IP bistream)</td>
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Vertically integrated operators compete through passive infrastructure wholesale (e.g. EU)

Horizontally integrated operators compete through active bitstream wholesale (e.g. APAC)
Industry landscape and trends
Scenarios for the future

- Industry faces a range of uncertainties and must prepare for a number of alternative scenarios:

<table>
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<th>Scenario</th>
<th>Description</th>
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<td>Survivor Consolidation</td>
<td>Revenue decline, industry loss of confidence, leading to consolidation of Telcos</td>
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<td>Clash of giants</td>
<td>Competition between integrated giant carriers, increased competitive threats from OTT</td>
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<td>Market Shakeout</td>
<td>Structural separation, growth through premium connectivity sold to third parties</td>
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<td>Generative Bazaar</td>
<td>Scattered initiatives, passive infrastructure sharing, valorization of active infrastructures</td>
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A return to strong growth requires the telecom industry to act collectively, to create the necessary conditions for the emergence of the more profitable scenarios - How can Governments support this transition?
Industry landscape and trends (2)  
*Regional trends*

**EMEA**
- Active infrastructure based competition prevails, favoring operator’s vertical integration - bitstream wholesale being considered as a second best except in UK (VULA)
- EU Digital Agenda: universal bb coverage through PPP, bandwidth increase, national BB strategies required
- State Aid scope has been broadened for fiber networks in suburban and remote areas with pricing equalization - may accelerate fibre PPPs

**AMERICAS**
- US: Competition between vertically integrated operators. Public funding limited to underserved/unserved areas - upcoming debates on BB reclassification
- CALA: Broadband plans are heating up, focus on mobile open access and open backbones

**APAC**
- Functional separation (i.e. “shared access”) combined with bitstream wholesale and regulated monopolies are leading network transformation (Singapore, Australia, NZ) aka NBNs - Open backbones in India.
- Test bed for very high speed universal coverage
Thank you!

Questions?