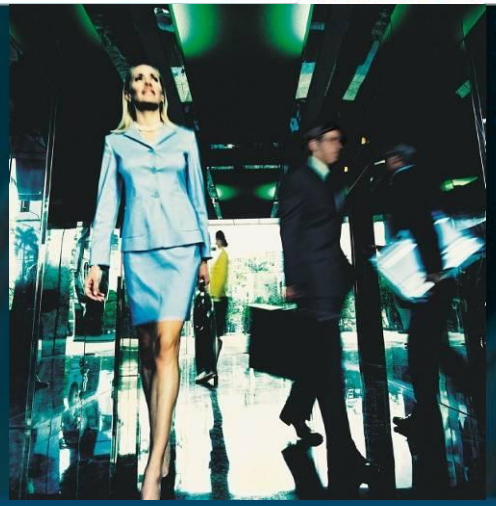
# Broadband : ready to invest? Disruptive changes and new investment models



Global Forum

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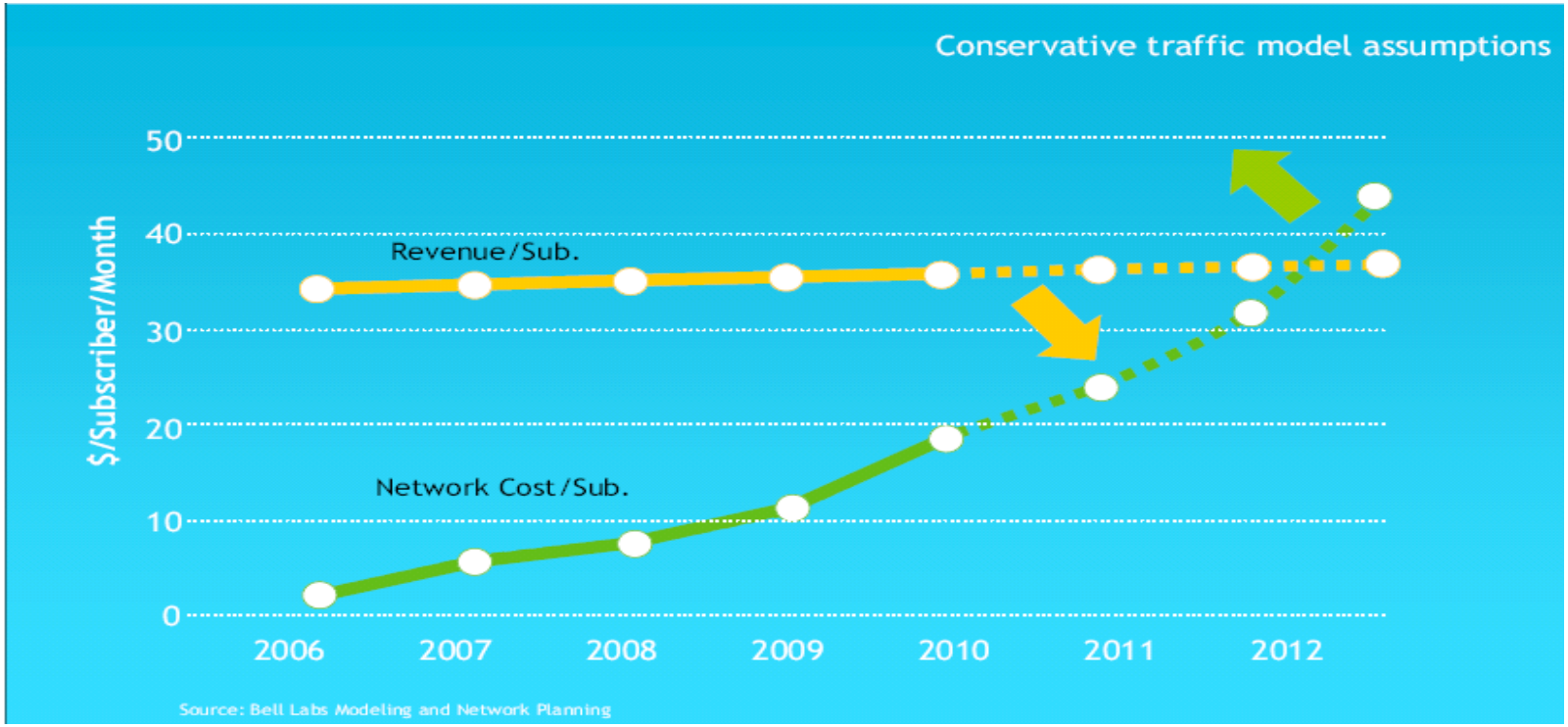
# Disruptive changes
## *Underpinning trends (1)*

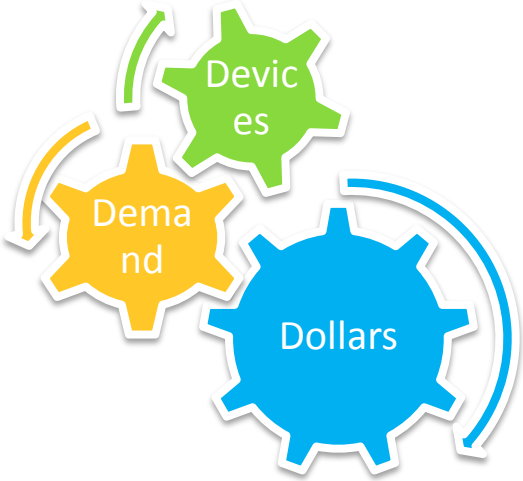
- **The data Exaflood calls for network investments...**
  - Rapid shift in consumer behavior towards data consumption, leading to network capacity crunch :
    - 34% CAGR in global IP traffic (2009-2014)
    - 108% CAGR in global mobile data traffic (2009-2014)
  - Mobile data traffic is rocketing (Ipad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



# 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



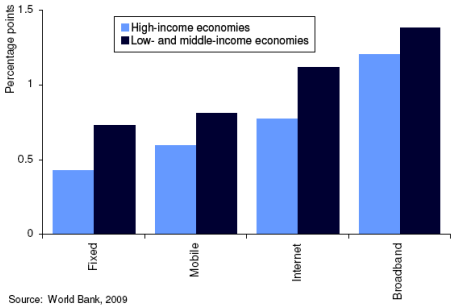

- Increasing number of rich media/video-enabled devices
- Increasing device capabilities

- 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



Source: World Bank, 2009
Note: The y-axis represents the percentage-point increase in economic growth per 10-percentage-point increase in telecommunications penetration. All results are statistically significant at the 1 percent level except for those for broadband in developing countries, which are significant at the 10 percent level

- 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*

### Active infrastructure-based competition

- Access to non replicable passive infrastructure (ducts, poles, masts, in house wiring) triggers **infrastructure competition in urban/suburban dense areas**
- In **medium/low density** areas, competition is based on a **combination of access to passive infrastructure and bitstream wholesale**
- **State Aid** is allowed for fibre access networks and in backhauling in **underserved** areas
- Differentiation between operators is based on **access to physical network ressources-** LLU

**Vertically integrated operators compete through passive infrastructure wholesale (e.g. EU)**

### Service-based competition

- A single network is rolled-out and shared: « **regulated monopoly** »/functionnal separation model
- Competition is based on **bitstream wholesale** (layer 2) or Radio Access Network /spectrum sharing
- **Universal coverage** is a first priority – projects are government driven
- Differentiation between service providers is based on access to **logical network ressources** (fixed or mobile IP bistream)

**Horizontallly 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 :

| | |
|---|---|
| **Survivor Consolidation** – Revenue decline , industry loss of confidence, leading to consolidation of Telcos | **Worst case scenario !** |
| **Clash of giants** – competition between integrated giant carriers, increased competitive threats from OTT | **US scenario** |
| **Market Shakeout** – Structural separation, growth through premium connectivity sold to third parties | **APAC scenario** |
| **Generative Bazaar** – Scattered initiatives, passive infrastructure sharing, valorization of active infrastructures | **Europe scenario** |

**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

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# Thank you!

# Questions?