

# Regulation and incentives to invest in fibre networks

Total Telecom Regulatory Summit



Gregor Langus  
30 May 2012

**CRA** Charles River  
Associates

---

# The current debate typically involves

- Tradeoff between static and dynamic efficiency
- The tradeoff between service- and facilities -based competition (and the role of ladder of investments)
- The effect of regulation on intermodal competition (competition between regulated and non-regulated assets)
- The interaction between copper access price and fibre investment incentives

---

# Static and dynamic efficiency

- Tradeoff:
  - Static efficiency: low access prices (full recovery of sunk costs?).
  - Dynamic efficiency: all attributable costs, risk, uncertainty.
- Cost-oriented regulation aims at addressing the tradeoff (it is a promise).
  - 2010 EC Recommendation provides for attributable cost & measurable risk
  - Still missing: uncertainty (option to wait).
- The ability of the regulator to credibly commit to avoid the temptation to behave opportunistically is important.
  
- Lessons for fibre:
  - If cost-oriented, the access price for fibre should provide additional allowances not currently recognized for copper and not recognized in the 2010 EC Recommendation;
  - consider how changes to copper regulation will affect the regulators' credibility.

---

# Service- and facilities-based competition

- Dilemma:
  - mandate access at cost to promote service-based competition, or
  - prohibit access to promote facilities-based competition.
- Does the ladder of investment doctrine solve the dilemma? Not clear, as low access price may:
  - delay climbing up the investment ladder (replacement effect);
  - delay new entry with own facilities (profits from access based entry represent opportunity costs).
- Lesson: promoting service-based competition is likely to involve some sacrifice in the level of facilities-based competition. The regulators may thus want to consider the tradeoff and set their priorities explicitly.

---

# Intermodal competition

- Regulated access promotes service-based competition But broadband will be delivered also through other, non-regulated infrastructures (cable, wireless).
- Low access price, by promoting service-based competition, may limit further evolution of intermodal competition. In particular, changing regulatory regime to lower the access price for copper may deter efficient investments into, for example, cable and wireless broadband (are assets substitutes or complementary to each other?).
- Lesson: drastic changes of regulation of copper are likely to have a negative effect on intermodal competition. Insofar as such competition is desirable this represents a welfare loss.

---

# Copper access price and fibre investment 1/2

- Replacement effect
  - The incumbent generates copper revenues (low if the access price is low);
  - fibre revenues in part replace copper revenues; this part represent opportunity cost of the fibre investment for the incumbent;
  - lower access price implies lower opportunity costs of investment into fibre - and thus encourages such investments.
  - The replacement effect acts in reverse direction for access seekers.
- Business migration effect
  - Fibre and copper co-exist as partial substitutes;
  - lower access prices for copper lead to more intensive service-based competition and thus to lower retail prices for copper based products;
  - and hence lower price for fibre based products - this discourages investment.
- The overall effect is ambiguous.

---

# Copper access price and fibre investment 2/2

- We consider investment incentives when networks operate in parallel (based on WIK's model). We find that:
  - incentives to invest are determined by discrete changes in the number of access seekers in equilibrium – this drives the business migration effect;
  - low copper access price discourages investment.
- Moreover, when the incumbent has incentives to preempt investments:
  - the replacement effect is suppressed (copper revenues are no longer a lost opportunity as they are lost in any case – either the incumbent invests in fibre or an alternative operator does );
  - thus, copper access prices unambiguously discourage investment.
- Lesson: adopting a cost methodology which reduces copper access prices might not encourage investment (or at the very least would require a level of regulatory oversight that may not be realistic).

---

# Concluding remarks

It is important, if cost-oriented regulation is applied to fibre, that it provides allowances in excess of (and in addition to) those currently provided for copper. Among others, a broad allowance for uncertainty has to be made.

Drastic lowering of access price for copper to foster fibre adoption does not seem warranted as it may adversely affect the investment incentives of the incumbents, alternative operators and of the operators of non-regulated broadband infrastructure.

**London**

Tel +44 (0)20 7664 3700  
Fax +44 (0)20 7664 3998  
99 Bishopsgate  
London EC2M 3XD  
United Kingdom

**Brussels**

Tel +32 (0)2 627 1400  
81 Avenue Louise  
Brussels B-1050  
Belgium

**Paris**

Tel +33 (0)1 70 38 52 78  
27 Avenue de l'Opéra  
75001 Paris  
France



[www.crai.com/ecp](http://www.crai.com/ecp)

Gregor Langus  
30 May 2012

**CRA** Charles River  
Associates