

The Effects of Unbundling and Platform Competition On Investment in Next-Generation Infrastructure

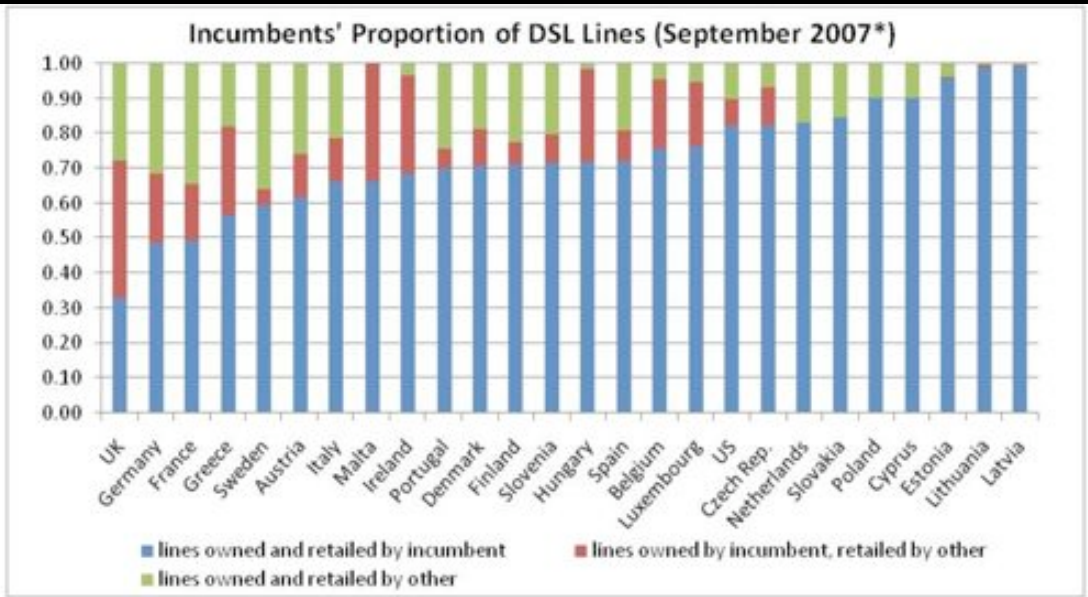
Scott Wallsten
scott@wallsten.net

May 26, 2009

Scott Wallsten, Stephanie Hausladen. "Net Neutrality, Unbundling, and their Effects on International Investment in Next-Generation Networks."

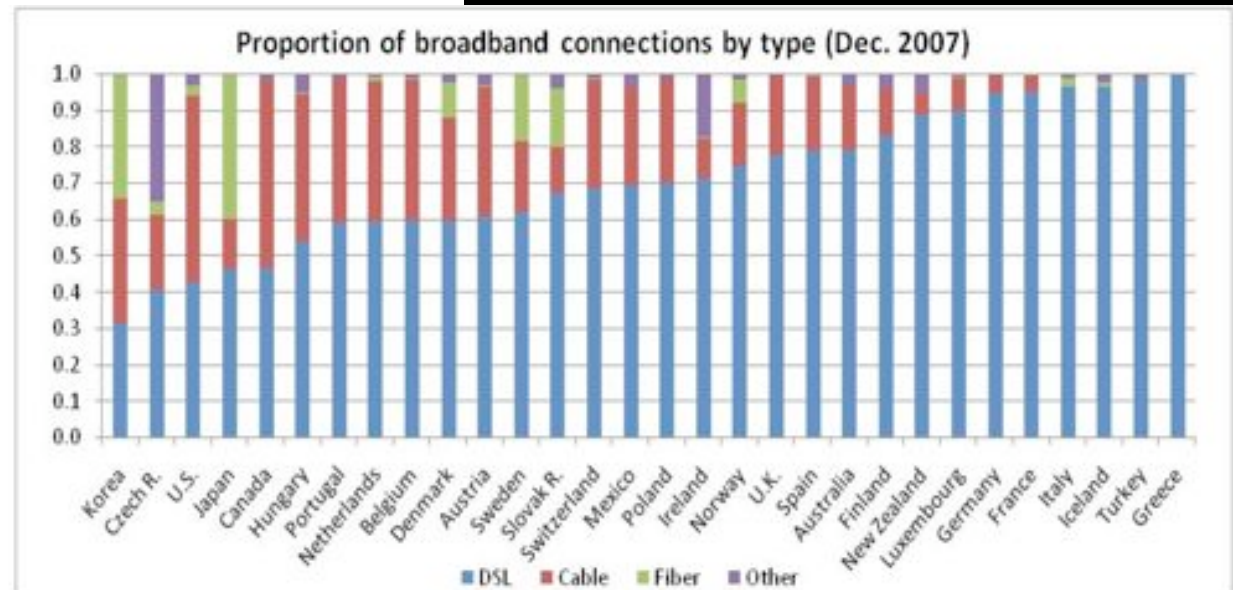
Review of Network Economics. Vol. 8, Issue 1. 2009.

competing definitions of “competition”



← intra-platform

Source: ECTA

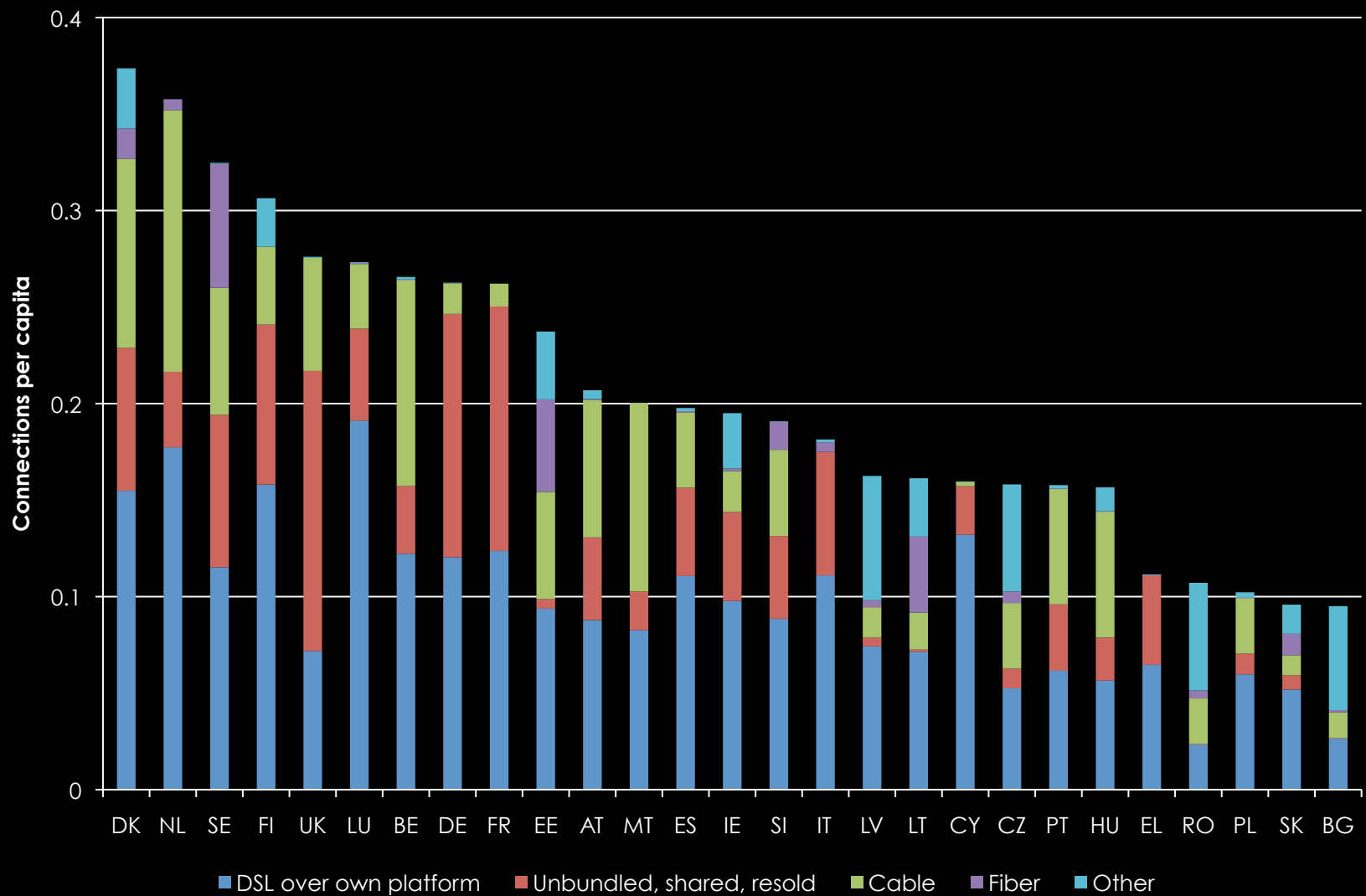


inter-platform →

Source: OECD

Broadband Provision by Facilities & Unbundling

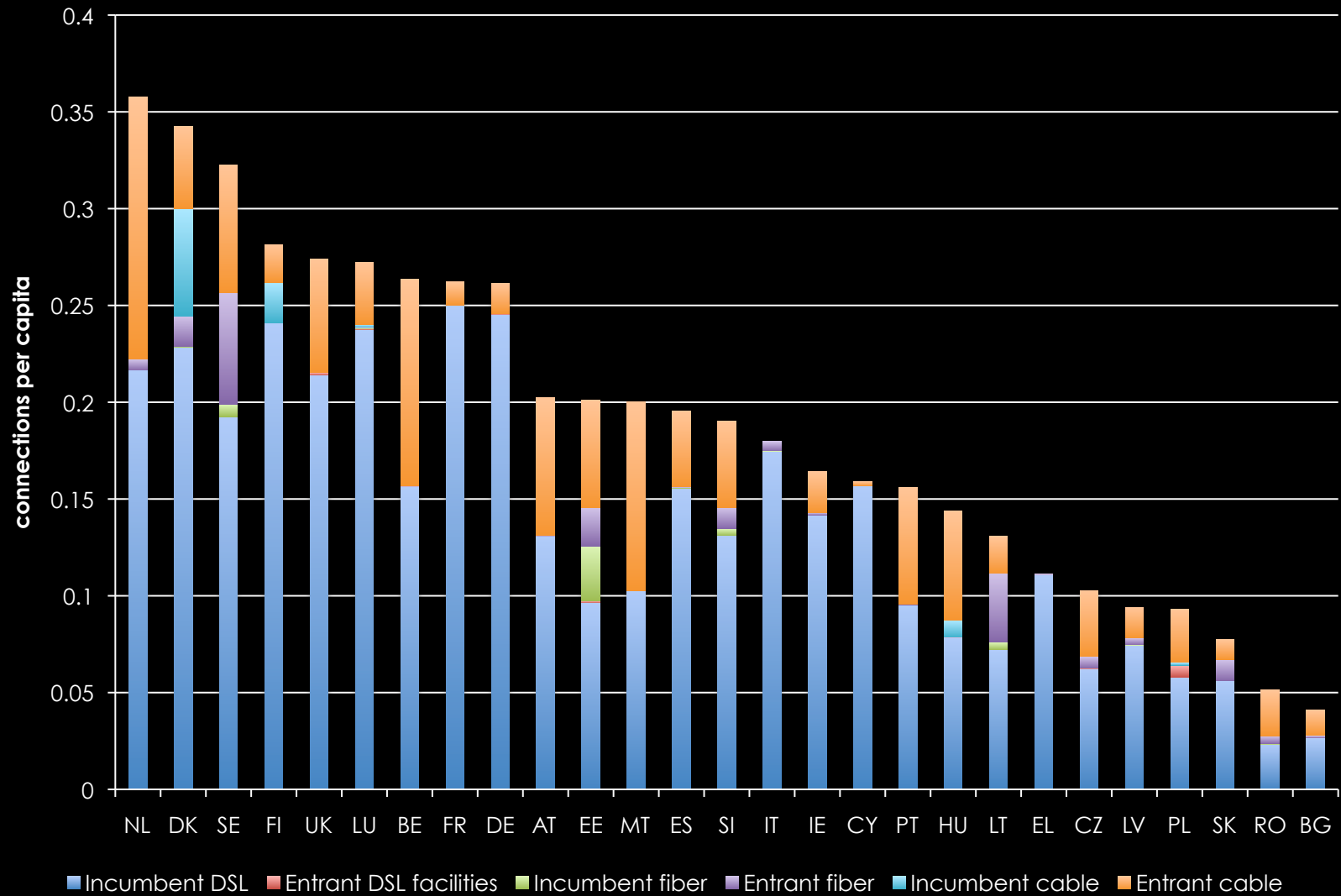
July 2008



Source: EC 2008.

Platform Competition in EU

July 2008



Source: EC 2008.

Which type of competition promotes investment?

Static vs. dynamic considerations

- Can maximize number of connections by requiring sharing, but
- reduces returns to investment and thus incentives to invest.

Results

Platform competition associated with investment in fiber.

Unbundling (intra-platform) competition associated with less fiber.

Data

Source: European Commission Information Society and Media Directorate Communications Committee Working Document on "Broadband access in the EU: situation at 1 July 2007."

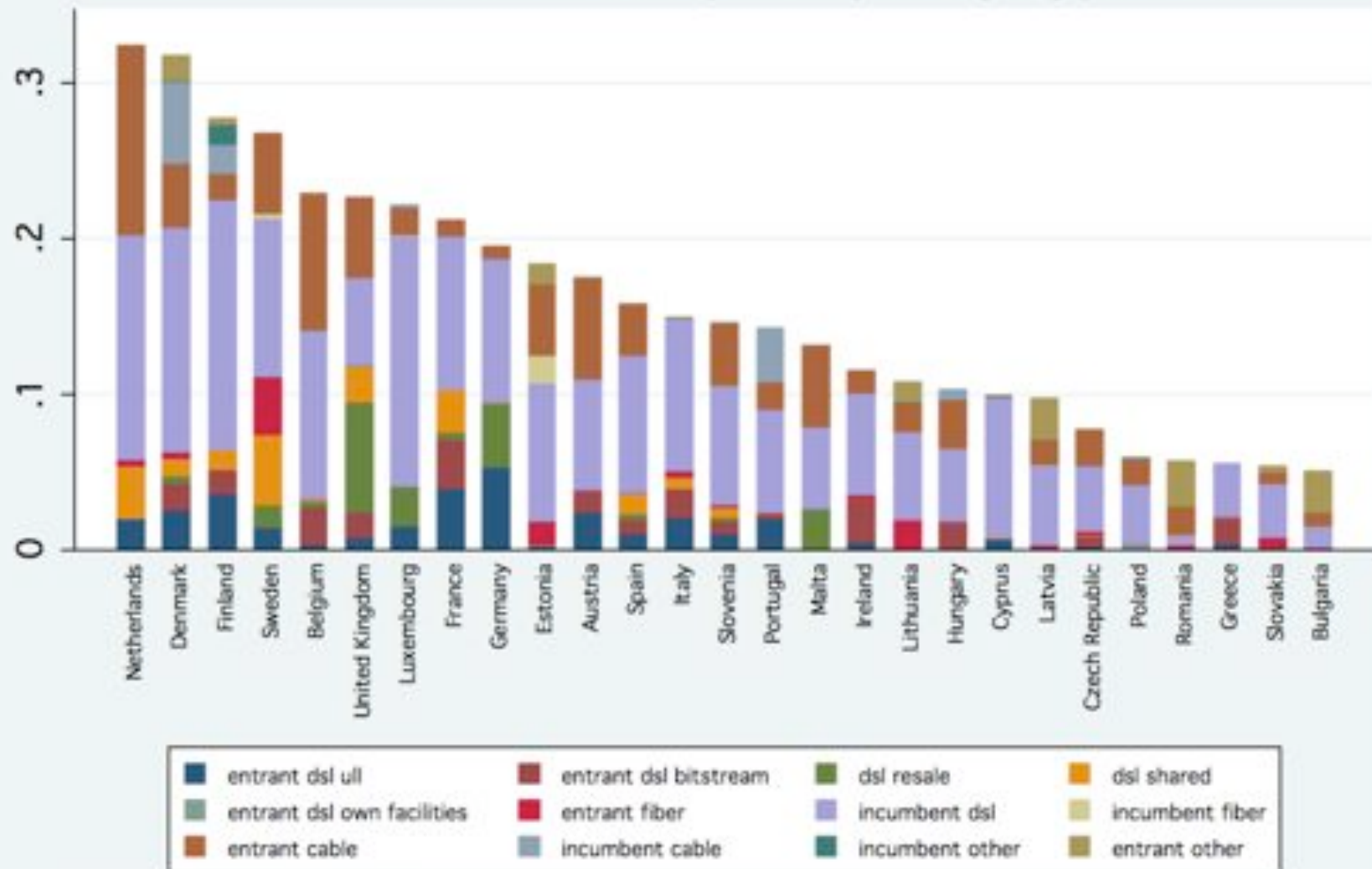
27 European countries, July 2002 – July 2007 (data from January and July in each year)

- Number of broadband connections by incumbents and entrants offering through
 - DSL, cable, fiber, WLL
 - Full unbundling, shared access, bitstream, resale

Incumbent: "the organisations enjoying special and exclusive rights or *de facto* monopoly for provision of voice telephony services before liberalisation, regardless of the role played in the provision of access by means of technologies alternative to the PSTN."

Entrant: "alternative telecommunications operators, as well as internet service providers (ISPs)."

Broadband Connections per Capita by Type, 2007



Source: European Commission 2007

(lines by competing platforms)

$$ngn_{it} = \beta_0 + \beta_1(\text{unbundled lines per capita}_{it}) + \beta_3(\text{GDP per capita}_{it}) + \alpha_i + \gamma_t + \varepsilon_{it}$$

i = country, t = month.year

ngn = next-generation network (fiber)

unbundled lines = bitstream, llu

competing platforms = cable, DSL over own infrastructure

α = country fixed-effects

γ = date fixed-effects

Intra-Platform Competition (unbundling)

	fiber per capita			
	entrants		incumbents	
	unbundled lines per capita	-0.103 (3.06)**		-0.041 (2.26)*
bitstream lines per capita		-0.219 (4.77)**		-0.064 (2.51)*
GDP per capita	-0.048 (0.35)	-0.100 (0.74)	0.034 (0.46)	0.021 (0.28)
Constant	0.000 (0.05)	0.002 (0.48)	-0.001 (0.42)	-0.000 (0.23)
Observations	244	233	244	233
R-squared	0.84	0.85	0.49	0.49
Absolute value of t statistics in parentheses				
+ significant at 10%; * significant at 5%; ** significant at 1%				

Platform Competition

	fiber per capita			
	entrants		incumbents	
entrant cable connections per capita	0.02 (1.53)		0.054 (2.16)*	
DSL over entrants' own facilities		1.106 (3.87)**		0.352 (0.64)
GDP per capita	0.045 (0.61)	0.061 (0.85)	-0.019 (0.14)	-0.011 (0.08)
Constant	-0.002 (0.94)	-0.002 (0.83)	-0.003 (0.70)	-0.0011 (0.28)
Observations	244	244	244	244
R-squared	0.48	0.51	.84	.83

Absolute value of t statistics in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%

UK:

Openreach: Negotiating with regulator to allow it to earn “reasonable return” on investments. First fiber-based broadband trial this summer?

Virgin Media: already offering 50 Mbps service.

France:

ARCEP decision on who should pay for fiber in June?

US:

ATT: 1.3m FTTC subscribers.

VZ: 2.8m FTTH subscribers.

Comcast: Docsis 3.0 to 65% of subscribers by year-end 2009.

Cable: Docsis 3.0 to 100% by 2013.

Conclusions

- Platform competition robustly associated with more investment in fiber.
- In principle, it is possible to get regulated unbundling prices right, but
 - Entrants always have incentive to claim prices are too high
 - Incumbents always have incentive to claim prices are too low
 - will have endless lobbying and negotiations on how to share costs (see, for example, U.S. experience!).