

# **Co-investment in Telecoms to Enhance Deployment of New Access Networks? Some Policy Issues**

**Wolfgang Briglauer**

Centre for European Economic Research (ZEW) Mannheim

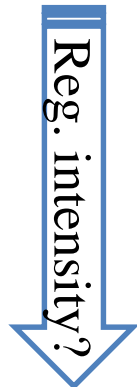
BITS Seminar, Brussels, 11.05.2017

# Motivation - I

- Broadband infrastructure / adoption of services widely seen as a driver of employment, innovation and economic growth
  - General purpose technology / externalities
  - However, no empirical evidence (Bertschek et al., 2016) so far
    - i. on fiber-based 'next generation access' (NGA) broadband networks
    - ii. let alone, individual fiber/NGA access technologies
      - ➔ calls for market-based migration process
  - Main public policies to foster NGA investment
    - i. **sector-specific regulations**
    - ii. subsidies (to cover non-profitable – rural – areas / universal coverage targets)

# Motivation - II

- Current Telecoms´ Review - European Electronic Communications Code (COM/2016/0590 final - “CODE”)
  - Core objectives
    - i. **incentives for investment in high-speed broadband networks**  
 (assuming this is welfare enhancing)
    - ii. equal baseline conditions for all market participants
    - iii. uniform application of the legal regulations
  - Core tools
    - i. asymmetric SMP access regulations  
 (incl. geographically differentiated access regulations)
    - ii. symmetric non-SMP access regulations
    - iii. **co-investment models s.t. ex ante regulations / deregulation?**



# Previous work

- Briglauer/Cambini (2017), The Role of Regulation in Incentivizing Investment in New Communications Infrastructure, study available at:  
<http://www.zew.de/en/forschung/analyzing-the-role-of-various-regulation-schemes-in-incentivizing-investment-in-new-communications-infrastructure/?cHash=a198b45c72aa4ba99f2c0e3cde780f0d>
- Briglauer/Vogelsang (2017), A Regulatory Roadmap to Incentivize Investment in New High-Speed Broadband Networks, (forthcoming, DWEJ)

# Regulatory roadmap

- Competitive situation will be quite different in urban, sub-urban and non-urban (rural) areas in most MS
- Adequate assessment can be done
  - either in the course of market definitions in order to identify geographic market delineation
  - or – in case positions of market dominance are found – in the course of defining regionally differentiated remedies
  - first approach has been already provided by the EC in distinguishing “black”, “white” and “grey” areas in its state aid rules in relation to the rapid deployment of broadband networks (European Commission 2013a)
  - captures most of the regional heterogeneity and at the same time limits administrative burdens
- ➔ **Co-investment** models appear particularly useful to enhance investment in **grey areas**

# Regulatory roadmap – grey areas

Area	Policies based on market structures and competitive safeguarding functions	Expected invest.	Ranking of polices based on externalities and investment
<b>Grey</b>	Monopoly wireline operator (M) =>		Expected externalities are high =>
	– access regulation: LTE/OTT/BBB and UPC and competition law are weak	Low	1) CI and no or soft regulation
	– soft regulation: LTE/OTT/BBB or UPC and competition law is strong	Medium	2) M and no or soft regulation
	– no regulation: LTE/OTT/BBB and UPC and competition law are strong	High	3) CI and access regulation
	– no regulation: LTE/OTT/BBB and UPC and competition law are strong		4) M and access regulation
	Co-investing wireline operators (CI) =>		Expected externalities are low =>
– access regulation: LTE/OTT/BBB or UPC and competition law are weak and collusion expected	Low	Trade-offs depending on relevant counterfactuals	
– soft regulation: LTE/OTT/BBB or UPC and competition law are weak but no collusion expected	Medium		
– no regulation: LTE/OTT/BBB or UPC and competition law are strong and no collusion expected	High		

# Regulatory roadmap – assumptions

- **Co-investment enhancing effects dominate investment diminishing effects**
- Higher regulatory intensity translates into less new investment
  - empirical evidence (Briglauer/Frübing/Vogelsang 2015)
  - investor's point of view (HSBC 2016; Credit Suisse 2016)
  - European Commission (2013b; 2014)
  - theory? (Briglauer/Cambini/Grajek 2017; Vogelsang 2016)
- Co-investment s.t. ex ante obligations promotes stronger network competition than regulated monopoly
  - Cave/Feasey 2017; theory: Bourreau/Cambini/Hoernig 2016
- (Grey) areas are exogenous, but
  - endogenously determined by the chosen policy options and the targets of policy makers
  - co-investment might turn otherwise white/black areas into grey ones

# Co-investment enhancing effects

- Salient features of effective co-investment models
  - sharing risks related to future demand and market exposure
  - cost reductions (comparative advantages)
  - capital formation (capital market imperfections)
  - primacy of voluntary agreements (appropriability)
- Economic analysis
  - co-investments perform better providing high-speed broadband coverage than mandated wholesale access regime (Bourreau/Cambini/Hoernig 2016)
- Implementation
  - success of co-investment models subject to ex ante approval depends to a large extent on implementation in MS
  - stricter ex-ante conditions for co-investment approvals imply smaller investment promoting effect



# Co-investment diminishing effects

- Economic analysis
  - mandating open access leads to lower investment because access option constitutes an opportunity cost that makes co-investment less attractive
  - in case of demand uncertainty, the entrant can simply wait until real demand manifests itself, and then benefit from mandated access without incurring any risks
  - Schumpeter effect: not regulating the new infrastructure increases the profitability of the investment (Vogelsang 2016)
  - the risk of imposing stringent open access requirements, or the potential threat of it, may discourage operators from agreeing to invest in the first place

# The CODE's provisions on co-investment: expected effects?

- CODE's regulations of co-investment models in Art. 74 and Annex IV
  - *“The co-investment offer shall be open to any undertaking over the lifetime of the network built under a co-investment offer on a non-discriminatory basis. (Annex IV (a))... A premium increasing over time has to be considered as justified for commitments made at later stages and for new co-investors entering the co-investment after the commencement of the project, to reflect diminishing risks and to counteract any incentive to withhold capital in the earlier stages. (Annex IV (c))”*
  - rather strong regulatory elements (≠ commercial market solution)
  - open co-investment agreement allows new entrants to join the co-investment at any time (≈ mandating open access)
  - access fee that includes a dynamic risk premium (≈ extremely difficult and complex task in theory and practice)
- ➔ Strong regulatory elements, complex pricing rules, high transaction costs and regulatory uncertainty diminish ex ante investment incentives

# Some policy implications

- Co-investment enhancing effects increase
  - with the extent commercially negotiated terms prevail
  - the smaller the scope of ex ante obligations and for regulatory gaming
- The design of commercial co-investment models should not be subject to specific ex-ante restrictions
  - co-investment agreements are complex and have proven difficult for operators to commercially agree in particular in fixed networks
  - many co-investment agreements are feasible
  - ➔ efficient organizational mode should be left to the market

**Thank you for your attention!**

# References - I

- Bertschek, I., Briglauer, W., Hüschelrath, K., Kauf, B. & Niebel, T. (2016). The Economic Impacts of Broadband Internet: A Survey. *Review of Network Economics* 14 (4), 201-227.
- Briglauer, W., Cambini, C. (2017). The Role of Regulation in Incentivizing Investment in New Communications Infrastructure, study carried out on behalf of Deutsche Telekom AG, ZEW project report available at: <http://www.zew.de/en/forschung/analyzing-the-role-of-various-regulation-schemes-in-incentivizing-investment-in-new-communications-infrastructure/?cHash=a198b45c72aa4ba99f2c0e3cde780f0d>
- Briglauer, W., Vogelsang, I. (2017). A Regulatory Roadmap to Incentivize Investment in New High-Speed Broadband Networks, (forthcoming, DWEJ)
- Briglauer, W., Frübing, S., & Vogelsang, I. (2015). The impact of alternative public policies on the deployment of new communications infrastructure – A survey. *Review of Network Economics*, 13(3), 227-270.
- Briglauer, W, Cambini, C. & Grajek, M. (2017). Regulation and Investment in European High-Speed Broadband Infrastructure, ESMT working paper, available at: <http://static.esmt.org/publications/workingpapers/ESMT-17-02.pdf>
- Cave, M. & Feasey, R. (2017). Policy towards competition in high-speed broadband in Europe, in an age of vertical and horizontal integration and oligopolies. CERRE project report available at: [http://www.cerre.eu/sites/cerre/files/170220\\_CERRE\\_BroadbandReport\\_Final.pdf](http://www.cerre.eu/sites/cerre/files/170220_CERRE_BroadbandReport_Final.pdf).
- Credit Suisse (2016). EU Telecoms Review, 13. January, Europe, Equity Research.

# References - II

- European Commission (2013a). EU Guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks. 2013/C 25/01. Brussels.
- European Commission (2013b). Commission Recommendation of 11 September 2013 consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment. C(2013) 5761 final. Brussels.
- European Commission (2014). Commission Staff Working Document. Explanatory Note Accompanying the document Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services. 9.10.2014 SWD(2014) 298. Brussels
- European Commission (2016). Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing the European Electronic Communications Code (Recast), COM/2016/0590 final - 2016/0288 (COD), Brussels.
- HSBC Global Research (2016). European Telecoms – What’s in frame for the EC telecoms framework review. Available at: [www.research.hsbc.com](http://www.research.hsbc.com).
- Vogelsang, I. (2016). The Role of Competition and Regulation in Stimulating Innovation – Telecommunications. *Telecommunications Policy*, forthcoming.