cerre Centre on Regulation in Europe

Co-investment & Network Sharing

WEBINAR
26 MAY 2020

OUTLINE

1. Introduction: research question and methodology
2. Pros and cons of infrastructure sharing
3. Efficient implementation of infrastructure sharing
4. Lessons from country cases
5. Lessons from case law

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INTRODUCTION

Background and research question

- **Co-investment for fibre & mobile network sharing:** key means to stimulate investment in coverage and upgrade of communications networks
- **Pros and cons of infrastructure sharing:** enhanced investment incentives vs. potential harm to competition
- **Research question:** how to implement infrastructure sharing in order to maximize benefits and minimize potential costs?

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INTRODUCTION

Approach and methodology

- Generic approach to account for sharing in both fixed and mobile markets → **infrastructure sharing**
- Economic analysis of the **effects of infrastructure sharing,** in its various forms, on market outcomes
- Lessons learned from **country and law cases**

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PROS & CONS OF INFRASTRUCTURE SHARING

Benefits: stimulates competition and investments

Counterfactual

Fixed SMP: access	Fixed non-SMP: no access and monopoly	Mobile No access & oligopoly

Increased coverage

Lower costs, increased quality

Potential downsides: risks of unilateral and coordinated effects

depends on… **design of the agreement**

market context

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IMPLEMENTING INFRASTRUCTURE SHARING

Efficient implementation of infrastructure sharing

1. Operational model and checklist
2. Market-driven or regulated?
3. Interplay with other regulatory provisions
4. Pricing of late co-investment
5. Infrastructure sharing with business users

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OPERATIONAL MODEL AND CHECKLIST

Trade-offs for firms

Cooperative arrangements	Contractual arrangements	
Joint venture	*Reciprocal access*	*One-way sharing*
Complementarities and synergies	Lower transaction costs	
Commitment	Flexibility	

Key for society: minimize risks of unilateral and coordinated effects through proper **design of the agreement** → **checklist**

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DESIGN OF SHARING AGREEMENTS

Checklist to mitigate potential anti-competitive effects

1. Access or transfer prices should not be set at excessive levels
2. The strategic independence of each partner should be guaranteed
3. In joint ventures, each partner should be allowed to offer wholesale access to the shared infrastructure, individually and independently
4. Exclusivity provisions for entering the agreement should be kept to the minimum necessary
5. The agreement should protect the investor against opportunism from late co-investors
6. To minimize the risk of coordinated behaviour, each partner should retain its independence, information exchange should be kept to the minimum necessary, and termination rules should be detailed and explicit.

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SHOULD IT BE LEFT TO THE MARKET?

When to regulate & when to leave it to the market

Barriers to market-driven infrastructure sharing deals?

- Transaction and coordination costs due to asymmetries between potential partners and high number of participants
- If lost profits from increased competition higher than cost savings
- Private incentives may not coincide with social incentives: mandate sharing?

Should infrastructure sharing deals be regulated?

- *Ex-ante* approval or *ex-post* assessment to avoid potential anti-competitive effects (unilateral effects, coordinated effects)

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INTERPLAY WITH OTHER REGULATIONS

Other regulatory provisions that are...

Substitutes to infrastructure sharing:

- Arbitrage by access seekers may undermine investment incentives
- Adding an access obligation to co-investors may reduce investment incentives → lift access obligations to SMP operators sharing their infrastructure

Complements to infrastructure sharing:

- Regulatory provisions (e.g., access to ducts and poles) that facilitate infrastructure sharing: can, in turn, improve coverage

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PRICING OF LATE CO-INVESTMENT

If entrants have the right to ask for late co-investment

- Can wait and cherry-pick profitable areas
- "Free option" similar to access, cost borne by first investor
- **Problem**: Can cause a "waiting game"
- **Remedies discussed**
  - Risk premia: increase retail prices
  - Co-investment options: do not increase retail prices, but harder to find correct value

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SHARING WITH BUSINESS USERS

Infrastructure sharing with business users

- Potential for sharing with content, e-mobility or health providers
  - Problem: non-exclusive use of networks
- “Campus networks”, i.e. industrial sites, ports, universities
  - Networks built and run by party with technical know-how: equipment vendors, or MNOs
  - Some already exist and 5G trials are run
- Some countries reserve for spectrum business users

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COUNTRY CASES

- Belgium
- France
- Ireland
- The Netherlands
- Spain
- Switzerland
- Denmark
- Germany
- Italy
- Portugal
- Sweden
- United Kingdom

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COUNTRY CASES

Overview: Mobile network sharing

- Passive sharing widespread and often mandatory
  - Does not raise competition concerns
- Active sharing
  - Raises competition concerns, but these can be answered
- Spectrum / core network sharing usually not permitted
  - Still: Denmark, Finland, Poland, Sweden
- General conclusions
  - Associated with faster roll-out and improved coverage
  - Very intensive forms of sharing compatible with strong competition when design concerns are addressed

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COUNTRY CASES

Overview: Co-investment

- **Regulation to promote co-investment**
  - French model: investors must accept co-investment
  - EECC: co-investment agreements as substitute for SMP access regulation
- **Market-driven co-investment agreements**
  - Agreements have arisen in many countries
  - Often (but not always) cover less densely populated areas
- **General conclusions**
  - Voluntary agreements associated with increased coverage
  - Too early to judge success of regulation, also because tends to be implemented when there is perceived lack of incentives to invest

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LESSONS FROM LEGAL CASES

Mobile network sharing

Sharing passive infrastructure (towers, masts, power supply)

- Does not generally restrict competition, BUT:
- Will site sharing reduce total number of sites available to third party operators?
  - Through reduction in number of sites...
  - Through less space on sites…
  - Through unfavourable commercial access conditions?

Winston Maxwell

LESSONS FROM LEGAL CASES

Overview: Mobile network sharing

RAN sharing

- Need to maintain individual incentives to upgrade network capacity
- Geographic scope, number of MNOs and market shares: key factors
- Information exchange can include traffic forecasts - problematic

National roaming

- Generally restricts competition, BUT:
- Can be exempted temporarily to permit a new entrant to introduce new services on a national basis.
- Exemption is limited in time and geographic scope (dense v. less dense areas).
- Exemption depends on market shares & number of MNOs in the market.

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LESSONS FROM LEGAL CASES

Overview: Co-investment

- **Extent of fibre roll-out**
  - Is cooperation likely to result in more and faster network roll-out than the counterfactual?
  - Are the roll-out commitments credible and enforceable? (Problem of alignment of interests.)
- **Market entry by third party operators**
  - How will third party operators be able to access the new infrastructure?
    - Availability, pricing, SLAs for wholesale access products (VULA, NGA bitstream)
    - Existence of several fibres
    - Non-discrimination obligations

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LESSONS FROM LEGAL CASES

Overview: Co-investment

- **Pricing of wholesale inputs**
  - Is the pricing structure of wholesale inputs (ducts, fibre, maintenance services) cost based?
  - Or are there baked-in margins in wholesale inputs that would lead to higher overall prices and retail price coordination?
- **Information exchange**
  - Is information exchange limited to the strict minimum?

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