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Network Sharing Agreement in the Czech Republic

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Network Sharing

Network Sharing

CERRE: Centre on Regulation in Europe

- <https://cerre.eu>

Report on network sharing (May 2020)

- Legal context
- Pros & Cons
- Operational Models
- Implementation Aspects
- Country Case Studies (12)
 - Not Czechia, though

Policy paper (October 2021)

- Summary of models, pro- and anticompetitive effects



Degrees of Sharing



Sharing of passive infrastructure
(towers, ducts, generators, AC)

Sharing of active infrastructure
(RAN equipment, antennas)

Sharing of spectrum and / or
core network

Loss of independence
for differentiation,
innovation and
investment



Increase in:

- speed of deployment
- coverage
- efficiency of spectrum use

Decrease in:

- deployment cost
- environmental burden
- emissions

Operational Models



The most common operational models are:

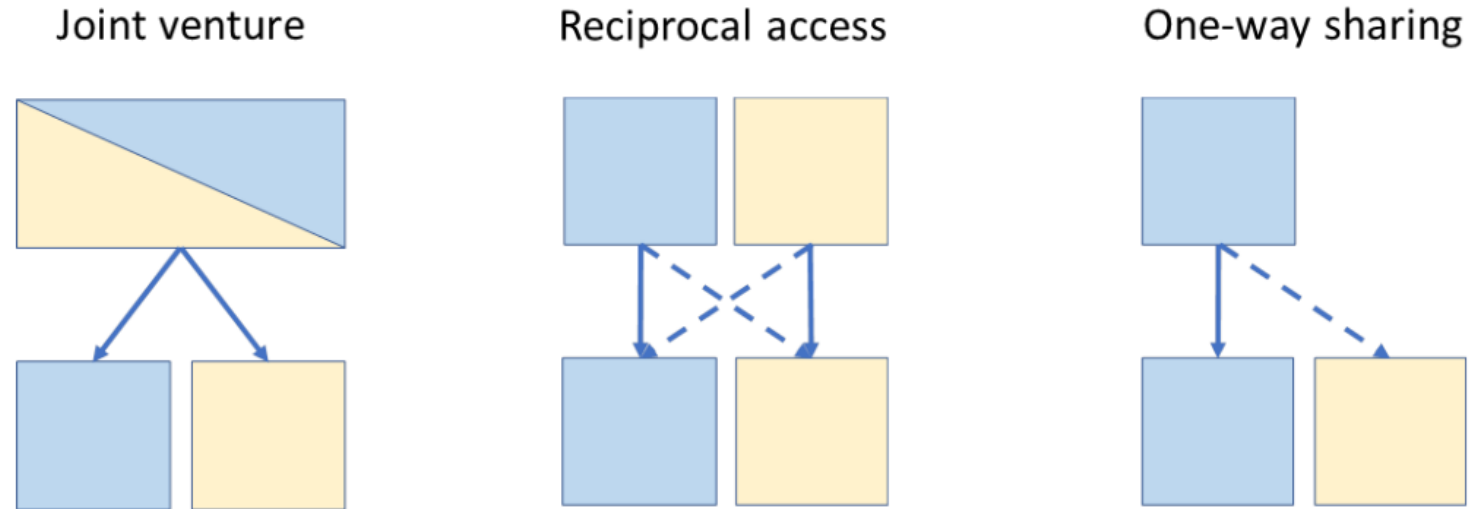
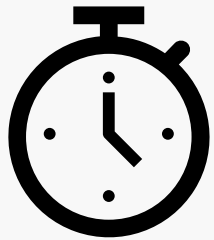


Figure 1: Models of infrastructure sharing (adapted from Berkeley Research Group, 2017).

- Joint venture: more coordination, higher synergies
- Reciprocal access / One-way sharing: more independence, lower transaction costs, more flexibility

Independently of the model, the internal transfer price should not be too high – strike the right balance between coverage and consumer surplus

T-Mobile / Cetin & O2



Kind of long timeline:

- 2G/3G NSA in 2013
- LTE NSA in 2014
- MNSA CETIN/O2 in 2015
- EC Start of investigation in 2016
- EC Statement of Objections in 2019
- EC Preliminary Assessment in August 2021, market test of commitments in October 2021
- EC Acceptance of Commitments in July 2022

Lessons learned should resolve other cases much more quickly!

- EC concerns and red lines
- Acceptable designs for: technology, geographical extent, governance, info exchange
- Technology has changed: slicing on active equipment can now handle independent networks

T-Mobile / Cetin & O2



Sharing model chosen:

- Reciprocal master / visitor in two halves of Czechia (excluding the two biggest cities Prague and Brno)
- **active sharing**
- neither spectrum nor core network are shared

Concerns for **competition and innovation**:

- preserve independence and flexibility to differentiate retail services and capture customers
- preserve ability and incentives to invest unilaterally in extending and improving the network
- limit information exchange to what necessary
- limit geographical scope to where necessary

Ability, Incentives, Information



We find all issues present in this case

- remedies specifically tailored to deal with each of them

Ability to compete

- General network upgrade to multi-standard RAN, to support both 4G and 5G nation-wide

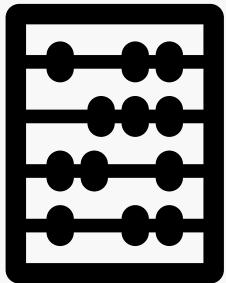
Incentives to compete and geographical scope

- Cost-based pricing of unilateral network upgrades
- Agreement cannot be extended to largest towns for 7-10 years, concerning 2G to 4G

Information exchange

- Explicit limitation to minimum necessary
- Explicit exclusion of non-technical (esp. marketing) personnel
- Chinese walls to prevent info “seeping” from CETIN to O2

Measuring the Effect of NSAs in Czechia (1)



Discussions about expected effects of NSAs in policy documents are mostly done by **classifying and theorizing**

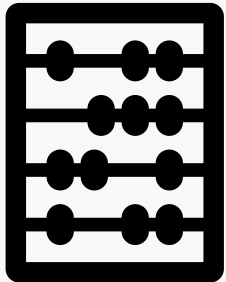
- active vs passive, urban vs rural, 3G vs 4G vs 5G
- necessary in absence of generally valid empirical results

Great to have empirical work on the Czechia case

First approach: measure effect on prices (reduced form)

- Compare changes in prices i) in Czechia after NSA to ii) control group of other EU countries
- Called “difference-in-difference”, captures causal effect
- Attention: not a controlled experimental setting – is a *natural experiment* where “4G NSA” is posited as the one relevant factor that changed in Czechia in 2014
- Result: *Teligen basket prices* decreased, the larger the more
 - Not actual client data, but best offers of top two MNOs

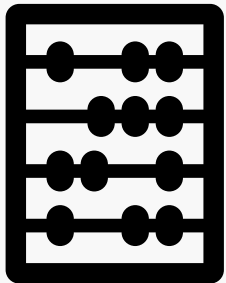
Measuring the Effect of NSAs in Czechia (2)



Second approach: disentangle cost and quality effects

- Structural model of demand and supply (3 MNOs)
- Full picture of interaction
- Determination of marginal costs needs behavioural assumption, here that firms compete in price
- Data: actual market data (prices, subscribers)
- Computation of price and welfare effects, and simulation of outcomes in absence of NSA: full evaluation of NSA
- Result 1: NSA associated to increase in demand (interpreted as resulting from higher quality) and lower costs – significant but how much is it?
- Result 2: Comparison with simulated absence of NSA shows 10% increase in consumer surplus from NSA

Measuring the Effect of NSAs in Czechia (3)



Third approach: Quality choice, Geosplit vs Joint Venture

- Structural model of demand and supply, plus quality choice
- Full picture of interaction, adding more complexity
- Estimation of model assuming price competition and quality choice under geosplit (independent quality choice) or JV (joint quality choice to maximize profits)
- More data: internet speed, deployment costs
- Simulation of quality choice under counterfactual no NSAs
- Results:
 - NSAs lead to lower marginal cost of access provision
 - Benefits consumers through higher quality and lower prices
- Issue: unrealistic results in counterfactual unless it is assume that Vodafone responded to NSA with decrease of marginal costs by at least 33%; again assumption of price competition

Open issues



I have some questions to finish:

- Wholesale
 - “*infrastructure competition which enables competition and innovation in the **wholesale** and retail telecommunications markets in Czechia*”
 - no further mention of wholesale / MVNOs – all clear?
- 5G rollout:
 - Network upgrade does not include all sites
 - In Prague and Brno, can 5G be shared right now?
- Complainant Vodafone
 - None of the commitments make life easier for Vodafone – so its objective was to delay NSA implementation?
- Going forward:
 - Why did the European Commission have to deal with this in the first place? (Thresholds?)
 - Would the NCA have been faster? Or too unexperienced for this *specific* issue?
 - Have we learned enough for cases to be kept at national level?

Thank you!
Obrigado!