

EVALUATING THE SWEDISH MOBILE COMMUNICATIONS MARKET:

SWITCHING COSTS AND NETWORK EFFECTS

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Contents



2

- Motivations
- Research Questions
- Summary of findings
 - ▣ **Paper I:** Mobile number portability: Evaluating the Swedish mobile communications market
 - ▣ **Paper II:** Determinants of customers locked-in in the Swedish mobile communications market
 - ▣ **Part III:** Does size of network matter for off-net price and customer attraction? The Swedish mobile communications market
- Policy recommendations



Motivations (I)

3

- Duopolistic ----> Oligopolistic structure
- This market has higher competition compare to the past
- However, competition cannot be sufficient to provide a maximum level of social welfare
- because mobile operators still use various strategic instruments to raise **switching costs** and enhance **network effects** to bind consumers to their networks



Motivations (II)

4

- What kinds of situation and strategic instruments encourage the switching costs and network effects?
 - ▣ Lack of number portability
 - ▣ SIM card locking
 - ▣ Handset subsidies
 - ▣ Termination-based price discrimination
- So, the necessary regulations e.g. mobile number portability is introduced
- Sweden is one among countries where adopt MNP in the early stage but it has been not so successful



Research question

5

- *“What is the impact of MNP and mobile operator strategies on the Swedish mobile communications market competition?”*
- What is the impact of mobile number portability regulation on mobile subscribers’ switching costs and on incumbent profit?
- What are the determinants of subscribers’ retention in the Swedish mobile communications market?
- What are the determinants of subscriber attraction in the Swedish mobile communications market?



Benefits from MNP

Direct effects

Price reduction

Indirect effects

More competition in the mobile market

Switching costs reduced over time after introducing MNP Policy

Buehler and Haucap, 2004

Overall, **the benefits exceed the costs of implementing MNP**, so telecom regulators **tend to introduce MNP policy.**



MNP implementation

9





RQ | 'Does the MNP regulation reduce consumers' switching costs?'

10

- Major concern in most of mobile communications market is **high consumers' switching costs**
- **Mobile number portability** is the main tool reduce consumers' switching costs
- So, we decided to investigate the consumers' switching costs from 1995 – 2008.
- We break down into two periods before and after 2002 (year of implementing MNP)



Mobile number portability: Evaluating the Swedish mobile communications market

11

Purpose: To measure and compare consumer switching costs between mobile operators in two period of times

Method: Mathematics calculation based on Shy' s model (2002) and non-parametric test (mean differences)*

Findings: Between two periods, consumer switching costs reduce in larger mobile operators. However, larger operators still have high profit comparing to small operators.

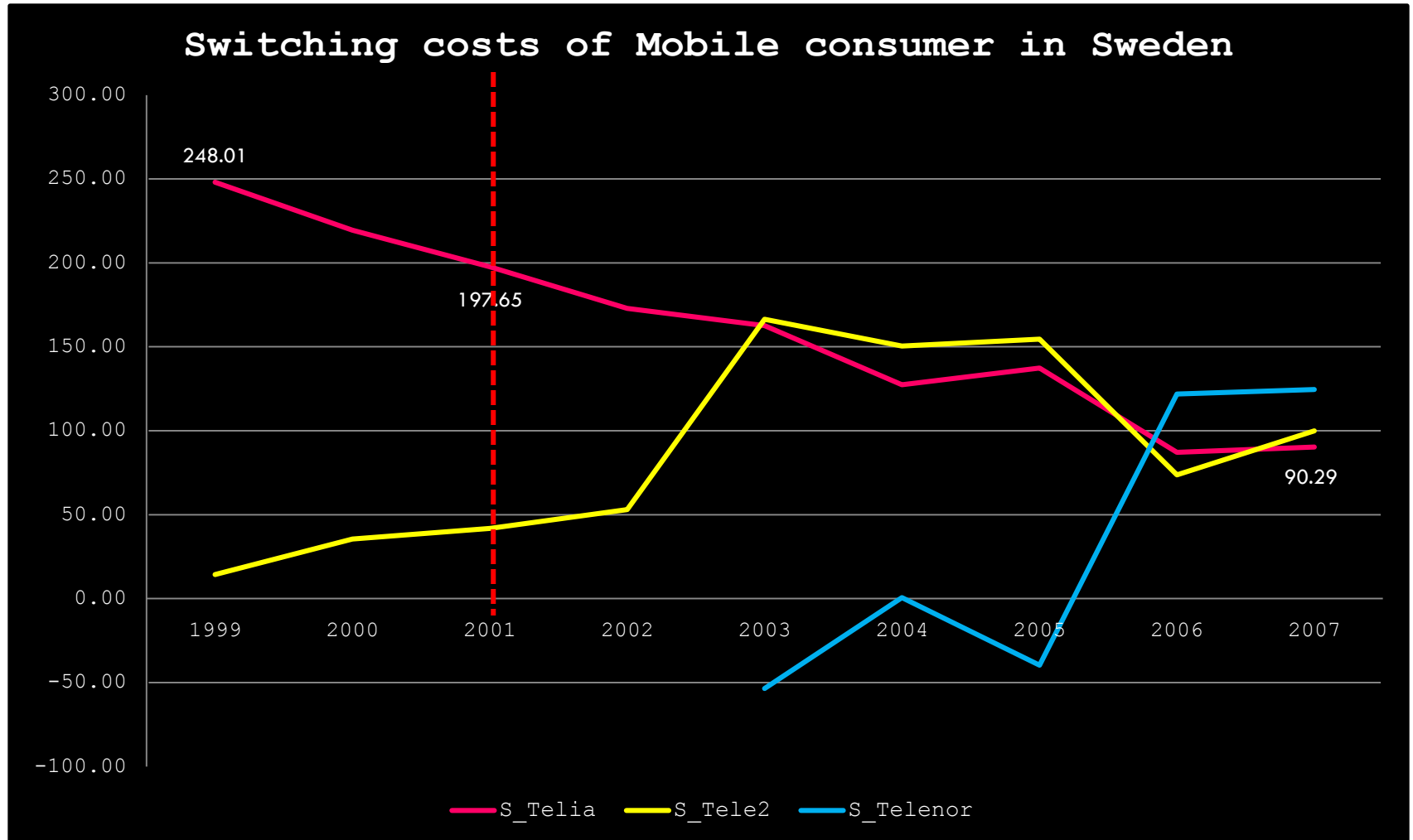
Contributions: MNP regulation is an effective outcome. However, the usage percentage is low in Sweden comparing to other Nordic countries, in particular Finland.

* This paper is being revise



Estimated switching costs

12

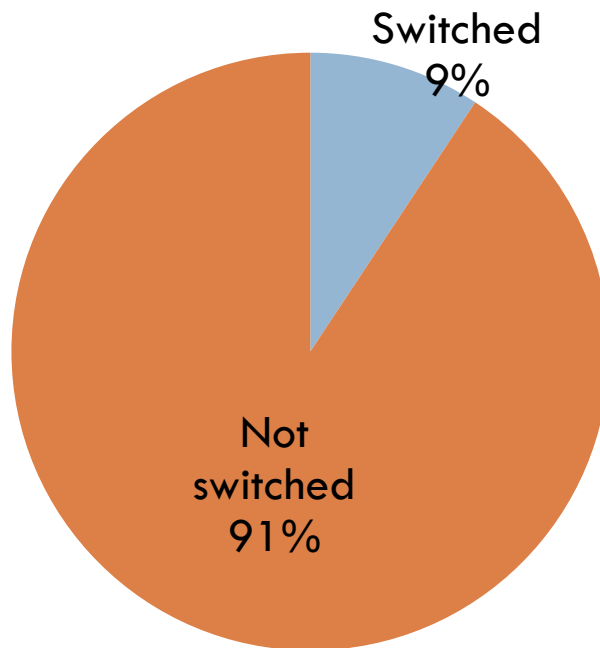




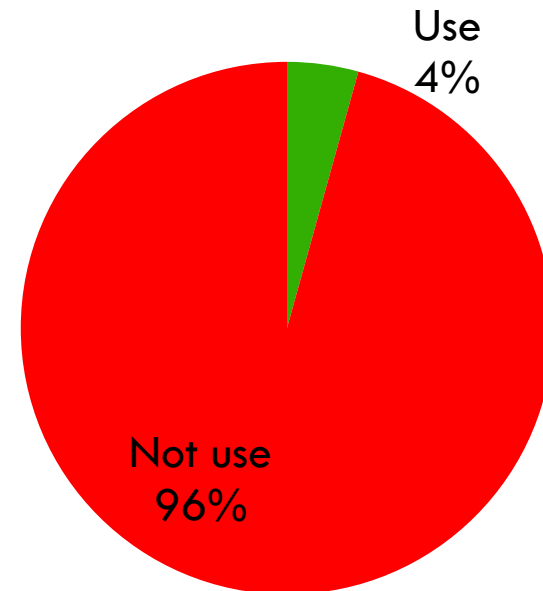
Switching experience and MNP usage (2007)

13

Switching experience in last six months



MNP usage



Source: PTS



RQ II

14

- Paper I gives an inspiration to investigate **‘determinants that make mobile consumers remain with the same mobile operators?’** in the 2nd paper.

Reasons for using the current mobile operators	(%)
Well-know brand**	89
Good network coverage*	74
Readable and comprehensible phone bill * (Transpirency)	50
Low rates for on-net calls**	42
Well-functioning customer service*	42
Recommended by friends or acquaintances	28
low prices in general	27
offer flat rates	25
Same call price to all mobile operators	16
Handset subsidy	14

Source: PTS



Determinants of customers locked-in in the Swedish mobile communications market

15

Purpose: To find the factors that make consumers remain with the same operators. The factors are brand image, quality of network, billing transparency, low on-net price and handset subsidy

Method: Binary choice model, logit model; two model using different independent variables

Findings: Brand image and low on-net price are potential factor to make consumers remain with the same operator.

Larger operators which provide low on-net price could lock-in their existing subscribers, while smaller could not.

Larger operators' subscribers got higher switching costs

Contributions: Telecom regulator should consider prohibiting termination based price discrimination for larger mobile operators.



RQ III

16

- Paper II investigates **'decisions of existing mobile customers'** and various determining factors
- Paper III is focused on **'decisions of additional mobile customers'** and pay attention to price discrimination between termination calls

Does size of network matter for off-net price and customer attraction? The Swedish mobile communications market



Purpose: To investigate the role of size of network, price differential between on- and off-net call, and termination based price discrimination and size of network to mobile customer attraction

To show whether off-net price is determined by size of network and interconnection calculation model

Method: Panel data econometric model

Findings: Termination based price discrimination and size of network play an important role to attract new mobile customers while higher price differential will not attract new customers

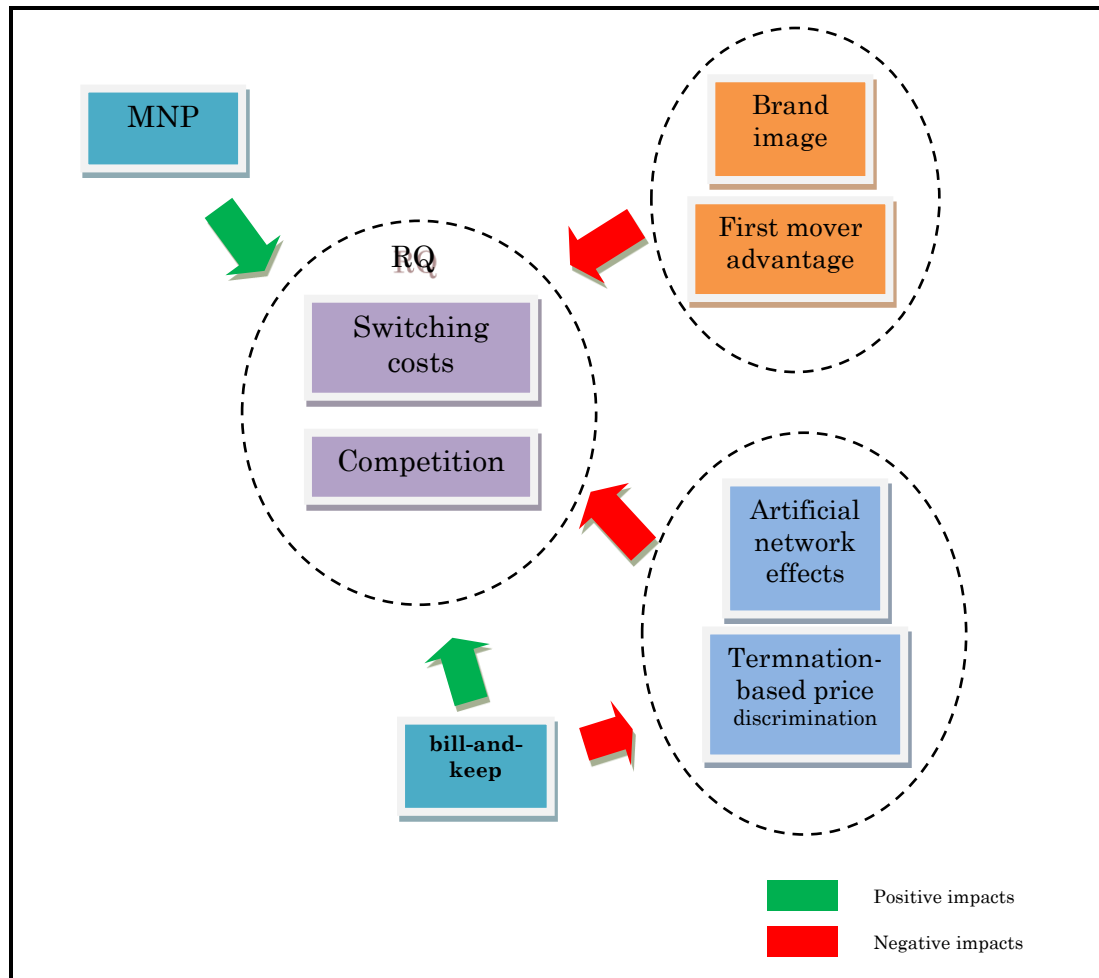
Off-call price is set by taking size of network into account in order to use their dominant position to get competitive advantage

Contributions: Bill and keep interconnection model should be considered for termination charge in mobile communications market



An abstract presentation of the findings and policy recommendations

19





Summary of findings

21

- MNP reduce consumer switching costs
- Consumer switching costs still exist
- Larger operators' consumers have higher switching costs
- Low on-net price is key factor to make mobile market has intensity competitive
- Larger mobile operators could utilize this strategy more successfully since they could lock-in the existing subscribers
- Moreover, termination based price discrimination together with size of network could attract more additional mobile customers in larger mobile operators



Policy recommendations (I)

22

- The telecom regulator may consider charge and porting speed. Moreover, an investigation of mobile operators' strategies is needed
- To reduce the impact of subscribers' lock-in by prohibiting termination-based price discrimination
- A move to B&K for mobile termination charge would possibly result in a more efficient wholesale and retail price structure



Policy recommendations (II)

23

- B&K would not allow mobile operators to charge termination fees to each other or set zero termination charges
- Incumbents could not set a high termination charge to raise their rivals' off-net prices
- No profit for incumbents to encourage their customers to make most calls within their network
- Telecom regulators are not able to investigate the real cost of interconnection due to resource- and time-consuming

24

Thank you for your attention

Questions and comments are welcome!