Understanding the switching behavior in the Thai cellular market

Pratompong Srinuan*, Mohammad Tsani Amnafari, and Erik Bohlin

Technology and Society, Technology Management and Economics,
Chalmers University of Technology, Gothenburg, Sweden

*Corresponding e-mail: pratompong.srinuan@chalmers.se
Background and motivation

High average growth of adoption of mobile subscribers (42 %) Mobile penetration rate was 102 % by the end of 2009

Potential mobile subscribers have been captured by mobile operators

Mobile operators will work hard to retain their own mobile subscribers as well as steal rival’s mobile customers.
Background and motivation (II)

Three major mobile network operators which mainly occupy mobile subscribers.

All of mobile operators use price strategy to compete with each others. But the quality of service remain inequal.

Larger mobile operator has network coverage to almost 90 percent of population.

Smaller mobile operator has developed its network coverage covers only the urban area of every province.

Recently, the debatable regulation in Thailand is the implementation of mobile number portability (MNP).

To reduce consumer switching costs since the MNP gives mobile subscribers to remain use the same mobile telephone number while changing mobile operator.

To increase competition in mobile communications market. Raise competition in both price and quality of services.
Research questions

- What are the determinants of switching intention of mobile subscriber?
- Which mobile operator will gain more benefits from MNP regulation?
- How much is a mobile subscriber willing to pay for MNP on average?
Thai mobile communications market development

1986
- NMT 900/ GSM 900

1990
- NMT 470
- AMP 800
- PCN 1800

IMEI locking was implemented by AIS and DTAC
Handset subsidy was implemented by TA Orange
DTAC introduced IMEI unlocking

1991
- true move
- orange

SMS blocking was applied by AIS
AIS refused to let TrueMove’s customers to roam with its network

2002
- Hutch

Termination-based price discrimination is introduced by mobile operators

2003
- Hutch

2005
- AIS
- DTAC
- TrueMove
- Hutch

2009

AIS, 48%
DTAC, 28%
TrueMove, 21%
Hutch, 24%
THAI Mobil, 0.02%
DPC, 0.12%
Data (No. of sample 1425)

(a) Type of subscription
- Pre-paid, 7019
- Post-paid, 2989

(b) Operators market share
- AIS, 37.8%
- DTAC, 41.3%
- Truemove, 19.7%
- Hutch, 1.16%
- Switch, 5.2%
- Not switch, 87.55%

(c) Intention to switch and add subscription
- Not switch, 87.55%
- Add more subscription, 7.25%
- Switch, 5.2%

(d) Intention to switch by operators
- AIS: 185
- DTAC: 198
- Truemove: 123
- Hutch: 0.14
Econometric model

A binary probit model is used!

$$\text{Prob} \left( \text{switch}|j \right) = \text{Prob} \left( U_{\text{switch},n} > U_{\text{remain},n} \right)$$

Switch=1: mobile subscribers intend to switch to others with in the next six months

Remain =0: mobile subscribers intend to stay with the current operator

The model is of the form

$$P_{jn} = F(x_{jn} \beta)$$
The model: Independent variables

Operator characteristics
- Pre-paid subscription
- AIS
- DTAC
- TrueMove
- Hutch
- Mobile usage expense

Subscriber characteristics
- Age
- Male
- education
- Occupation
- Monthly income
- Internet use
- Regional
Estimation results and discussion

<table>
<thead>
<tr>
<th>Variable</th>
<th>Marginal effect</th>
<th>Std. Err.</th>
<th>z-test</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operator characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepaid</td>
<td>0.009</td>
<td>0.010</td>
<td>0.930</td>
<td>0.351</td>
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<tr>
<td>AIS</td>
<td>-0.028</td>
<td>0.023</td>
<td>-1.250</td>
<td>0.211</td>
</tr>
<tr>
<td>DTAC</td>
<td>-0.029</td>
<td>0.024</td>
<td>-1.210</td>
<td>0.227</td>
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<tr>
<td>Truemove</td>
<td>-0.016</td>
<td>0.019</td>
<td>-0.810</td>
<td>0.420</td>
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<tr>
<td><strong>Mobile usage expense</strong></td>
<td>0.000</td>
<td>0.000</td>
<td>0.340</td>
<td>0.732</td>
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<tr>
<td><strong>Subscribers characteristics</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Age*</td>
<td>-0.002</td>
<td>0.001</td>
<td>-2.720</td>
<td>0.007</td>
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<tr>
<td>Male</td>
<td>0.013</td>
<td>0.009</td>
<td>1.460</td>
<td>0.144</td>
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<tr>
<td>Above undergrad</td>
<td>0.010</td>
<td>0.019</td>
<td>0.540</td>
<td>0.591</td>
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<tr>
<td>Undergrad</td>
<td>0.010</td>
<td>0.010</td>
<td>0.970</td>
<td>0.331</td>
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<td>Government officer*</td>
<td>0.046</td>
<td>0.021</td>
<td>2.200</td>
<td>0.028</td>
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<tr>
<td>Private officer</td>
<td>0.023</td>
<td>0.019</td>
<td>1.200</td>
<td>0.231</td>
</tr>
<tr>
<td>Self employ**</td>
<td>0.060</td>
<td>0.036</td>
<td>1.650</td>
<td>0.099</td>
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<tr>
<td>Temporary employ</td>
<td>0.040</td>
<td>0.028</td>
<td>1.440</td>
<td>0.150</td>
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<tr>
<td>Income</td>
<td>0.000</td>
<td>0.000</td>
<td>-0.980</td>
<td>0.329</td>
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<tr>
<td>Internet use**</td>
<td>-0.026</td>
<td>0.014</td>
<td>-1.830</td>
<td>0.068</td>
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<tr>
<td>Central region*</td>
<td>-0.042</td>
<td>0.010</td>
<td>-4.040</td>
<td>0.000</td>
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<tr>
<td>North-East region</td>
<td>0.005</td>
<td>0.011</td>
<td>0.480</td>
<td>0.629</td>
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<tr>
<td>Southern region*</td>
<td>-0.040</td>
<td>0.008</td>
<td>-5.240</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Pre-paid subscribers are more likely to switch to other mobile operators.

Subscribers of the mobile network providers, i.e. AIS, DTAC, and Truemove, have higher switching costs than subscribers of Hutch.

Government officers and the subscribers who have their own business are more likely to switch mobile operators.

Elderly subscribers will have less probability for switching mobile operators.

Mobile subscribers who usually use internet are less likely to switch to other mobile operator.

Mobile subscribers who live in central and southern region of Thailand have less probability to switch to other mobile operators.
What is the preferable mobile operator and MNP fee?

Higher portion of switching mobile subscribers will change to the largest mobile operator, AIS.

The largest mobile operator, has better network coverage in most of regions in Thailand.

This problem will be more serious if the Thai telecom regulator implements MNP into the mobile communications market.

Preferable MNP fee is 85 THB per time, but MNP fee that NTC will propose is 300 THB.
Conclusion and policy recommendations

- Different mobile subscribers confront with different level of switching costs. Subscribers of the largest mobile operator receive highest switching costs.

- Largest mobile operators will gain more switching subscribers than smaller operators.

- MNP implementation would help to lower switching costs of smaller mobile operators rather than larger operators.
Conclusion and policy recommendations

- Subscribers of smaller operator would move to the larger mobile operators to get better quality of network coverage.

- Implementing MNP without national mobile roaming regulation would lead to worse result for the smaller mobile operators.

- Telecom regulator should consider national mobile network roaming regulation to be implemented.

- This regulation would give an equality of network coverage to smaller operators since they can be able to compete with larger mobile operators.
“Nothing fun to be the regulators if they don’t regulate”
... Anonymous

Questions and comments are welcome!
Thank you for your attention