Substitution of mobile services

Olli Mäkinen

Doctoral Candidate

T-109.4300 Network Services Business Models

26.03.2013

Contents

- Substitution in general
- Case examples in mobile services
- Future possibilities and restrictions

Aalto University
School of Science

Substitution in general

- In economics, substitution is described as the consumption of one good instead of another good
  - These goods are called "substitutes" to each other
- Primarily, consumption of a good will increase if the price of the substitute increases and vice versa
- Substitutability describes the "similarity" of the goods to the customer
  - Perfect substitutes function 100% alike, such as printer paper brands
  - However, consumer preferences can have a major effect on it

Aalto University
School of Science

Substitutability continued

- In theory, substitutability is quite easy to comprehend
  - You have to eat in order to stay alive, so you could eat pasta or bread
- However in practice, the value or "utility" to the consumer of complex services or products is ambiguous
- For example, the utility of an SMS could consist of:
  - The textual message itself
  - Very good compatibility with different devices
  - Few requirements for the recipient's mobile subscription
  - Rather good rate of getting through (= confidence)
  - Usually very cheap to send (+ massive bundles)
  - Usually very cheap to receive

Aalto University
School of Science

Case examples in mobile services

- A contemporary substitution example has been of mobile vs. fixed line telephones
  - Varies by country
    - In Finland, almost perfect substitutes
    - In countries with free local fixed line calls, far from perfect
- As the mobile platforms have enabled background third-party applications that are always connected to the Internet, it is thought that they can be substitutes to the operator-provided SMS and voice services

Aalto University
School of Science

Viber

- Allows VoIP calls (albeit with a considerable lag) and messaging with picture content and group message features, as well as delivery reports
- Can send a location along the message if enabled
- 100 million worldwide users as of September 2012
- Supports Android, iOS, Windows Phone, S40, Symbian, BlackBerry and Bada
- Uses the phone number as the user ID to sync the phone's contact book with available Viber contacts
- Free to end users, and no current revenue model
- Stays in the background, popping up only when necessary

WhatsApp

- A popular SMS and MMS substitute service, quite similar to Viber

- Features group messaging, delivery reports and optional location sending

- Supports Android, iOS, Windows Phone, S40, Symbian and BlackBerry

- Has not published the number of users, but claimed to handle ten billion messages per day in August 2012

- Uses the phone number as the user ID

- Costs $0.99 for one year

Facebook Messenger

- Facebook's mobile extension
- Only supports Android, iOS and Blackberry as a separate client
- Features group messaging with pictures as well as delivery reports
- Can send a location along the message if enabled
- The user base is massive
  - Over one billion monthly users as of December 2012 and 680 million mobile users
- As with Viber, stays in the background

iMessage

- A feature from Apple's iOS 5 onwards
- Integrated into the native messaging app, iMessage replaces standard SMS and MMS messages with data-based messages looking identical to the end user (except for a blue background)
- Features delivery reports and group messaging
- Uses the phone number to automatically query Apple's servers whether the recipient is iMessage-capable or not

Aalto University
School of Science

Skype

- Now owned by Microsoft, primarily a VoIP service for PCs

- A variety of different mobile platforms supported

- The user base is massive, but fragmented in the sense that not everyone uses Skype on their mobile device even if they had one

- No association with the phone number, searching with the Skype IDs can be time-consuming

Mobile Social Phonebooks

- A social phonebook integrates multiple different social media service accounts into one contact

- Presence information is shown

- Google Talk, Skype etc. supported

- http://youtu.be/p8jAvCauaZQ (Nokia N9)

- http://youtu.be/CG-AY-aag1Y (WP8 People Hub)

- Revenue model: device differentiation by manufacturer

Aalto University
School of Science

Case conclusion

- Transparency to the end user is vital, as well as effortless installation

- Building a truly cross-platform service is possible these days

- Network externalities through a large user base
  - Switching costs can be largely reduced by transparency

- Direct revenue is difficult to get with the exception of WhatsApp, though it's hard to say whether one dollar a year per user is sufficient or not

Aalto University
School of Science

Substitution research

- Research in mobile service substitution in recent years have had similar results (Karikoski and Luukkainen 2011, Gerpott et al. 2012)

- Customers that use mobile Internet (MI) a lot use also the traditional voice and SMS services a lot
  - Are these just "heavy" mobile users? Vs. weak mobile users

- Statistically, it seems that MI use is complementary to voice and SMS instead of substituting them
  - Even if the customers had a fixed-rate data plan and use-dependent call and SMS plan (Gerpott et al. 2012)

Aalto University
School of Science

Substitution research

- Some of the empirical research has been conducted on the Symbian platform, which personally I believe does not enable mobile service substitution easily enough

- A survey conducted early this year in Facebook resulted in around 30% of the respondents saying that using Facebook Mobile has at least somewhat been a substitute to voice calls and SMS messages
  - And when considering only phones with modern notification capabilities, the amount increased to 47,5%

Future possibilities and restrictions

- As the number of phones with always-on Internet connectivity and reasonably modern OS increases, network externalities do provide possibilities for challenging the operators' traditional revenue models

- HTML5's WebRTC provides an easy way for new service developers to implement VoIP and messaging services

- The LTE networks do not feature circuit switching for calls -> always-on IP connectivity -> third party OTT (Over-the-top) data-based services can result in operators being dumb bitpipes
  - However, the LTE network operators do provide features not available to OTT providers, such as fallback to circuit switching

- Naturally of trendemous interest to the mobile operators as the data-intensive networks are also expensive to run

Future possibilities and restrictions

- So, what can the operators do?
  - Restrict unwanted services
  - Restrict the mobile data packages
- Restricting the network data traffic by application could be impossible due to local legislation
- TeliaSonera planned to restrict VoIP calls in their subscriptions, but has now cancelled the plans
  - "If all our customers suddenly decided to switch over to VoIP, and we charged them only for the data traffic usage, we would lose about 70 percent of our revenue", Lars Nyberg, TeliaSonera CEO
- NTT DoCoMo in Japan has considered another alternative – Voice over LTE (VoLTE) fixed-cost calling services between other VoLTE users

References

- Gerpott et al.: Usage of established and novel communication services: Substitutional, independent or complementary? (2012)

- Karikoski and Luukkainen: Substitution in Smartphone Communication Services (2011)

- http://www.huawei.com/en/static/hw-094164.pdf

Thank you!

- Questions?