HELSINKI UNIVERSITY OF TECHNOLOGY

Market segmentation approaches in the mobile service business

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Background and Motivation

- Advancing mobile technology makes it possible to develop new marketing research methods that function within the mobile device. Handset-based data collection offers a way to objectively monitor the consumption of mobile services by different kinds of users in various usage situations.
- Market segmentation is one of the most fundamental concepts of modern marketing. It enables:
  - Understanding the variety of customer needs and dividing the market into segments of buyers that share some unique needs
  - Serving the segments with services and products that best match their needs
  - Effective resource allocation among the most profitable segments (targeting)
- The widening range of services available on modern mobile phones raises questions about their usage:
  - How much are they used?
  - Who is using them?
  - Why are they used?
  - Where are they used?

Research question

- Primary goal: analyzing the potential of using SP360 data for market segmentation purposes.
- Based on data from the Finnish Smartphone Study 2007, three exemplary segmentation schemes were built to illustrate the pros and cons of different segmentation approaches for segregating mobile phone users.

- *Q: What is the role of the handset-based data collection method in market segmentation practises?*

Theory: Market segmentation

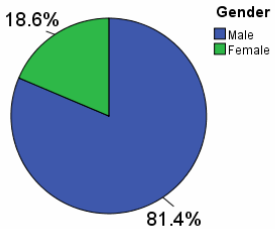
- A market is the set of all actual and potential buyers of a product or service. Markets are by nature complex and under continuous change.
- Through market segmentation, large heterogenous markets are divided into smaller more homogenous segments that can be more efficiently reached with the products and services the customers really want and will pay for.

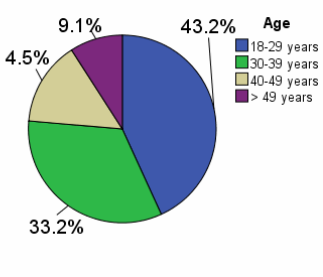
Theory: Market segmentation

- Performing market segmentation requires the selection of a basis for segmentation (the dependent variable) as well as descriptors (the independent variables) of the various segments.
  - So, the dependent variable decides how the market is split into segments and the independent variables are used to describe the segment members.
- Common segmentation variables:
  - Geographic (country, state, region, neighborhood, post code…)
  - Demographic (age, gender, occupation, income, education…)
  - Psychographic (lifestyle - attitudes, interests and opinions…)
  - Behavioral (usage rate, occasion of use, loyalty status…)
  - Benefit (the benefits sought from using a particular product or service)

Research data

- Available information about the panelists:
  - Application usage as logged by SP360 (with some deficiencies…)
  - Background information from the pre-panel survey
    - age group
    - gender
    - occupation
    - subscription type (bundled or not)
    - data/SMS/voice plan (usage-based or flat rate)





- Also the usage situation (location context) is available for a subset of panelists.
  - As identified by the context detection algorithm (Jiménez, 2008)
  - Home, Office or On The Move

Research data

- Population: 257 panelists with handsets that use the 3rd edition of the S60 software platform.

- 83 of these had three location contexts identified and demographics provided in the pre-panel survey, and could thus be used for person-situation segmentation.

person_id	gender	age	sms_group	browsing_group
91950	2	2	2	0
93196	2	2	2	0
91988	2	2	2	0
92952	2	3	1	1
92573	2	2	2	0
92927	2	2	2	1
92332	2	2	2	2
90645	2	4	1	1
93143	2	2	1	2
93302	2	4	1	2
90906	2	2	2	1
92979	2	2	2	2
92121	2	2	2	1
93166	2	3	1	0
93003	2	4	2	1
93171	2	3	2	0
93592	2	3	2	1
91709	2	2	2	0

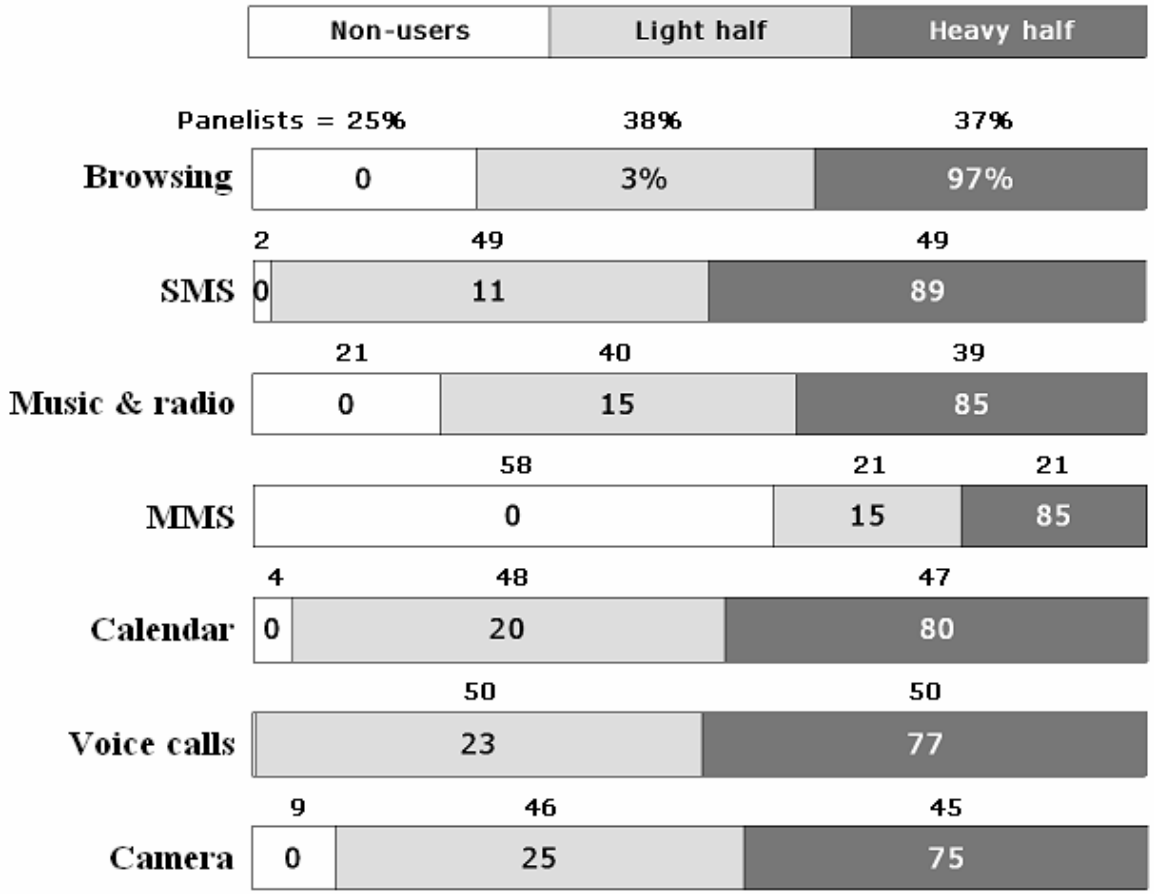
Scheme 1:
Heavy half segmentation

Heavy half segmentation

- Theory (Twedt, 1961):
  - Heavy users are responsible for around 80% of the total consumption of a product and therefore are the most valuable customers for a company.
  - Marketing efforts should especially be targeted to them.
  - Heavy user = usage rate over the category median
  - Light user = usage rate under the category median
  - Non-user = usage rate zero
- Study setup:
  - Application launch rates were used to measure browsing, music & radio, camera and calendar usage – outbound calls and sent messages were used as measures for voice call, SMS and MMS usage.
  - Demographics were used to describe the segment members.

Heavy half segmentation

- Analysis results:
  - Heavy users' share of the total consumption varies across services, from 75% (camera) to 97% (browsing).
  - The amount of non-users varies from 0% (voice calls) to 58% (MMS).



Heavy half segmentation

- Segment descriptives:
  - The heavy user segment of **browsing** is male-oriented and favors data packages and flat rate charging plans.
  - **SMS** heavy users are often young, female and students. Text messaging packages and flat rate charging plans are clearly favored.
  - **Music & radio** is less used by the oldest age groups (> 40 years), who are situated in the non- and light user segments.
  - Heavy **camera** usage correlates – as the only measured service – positively with handset bundling.

Heavy half segmentation

- Scheme pros:
  - Usage rate segmentation is a simple application for data collected with the SP360 software.
  - It is possible to identify the most active – and most valuable? – users of a certain mobile service.
  - Heavy usage of a service implies that there is a possibility of using the service itself as means to reach the segment members.
- Scheme cons:
  - Heavy half segmentation divides the market into few categories predefined by the marketer, is this a good representation of the reality?
  - With such usage rate segmentation, the reasons behind usage activity are not studied but the market is researched in a reactive manner.

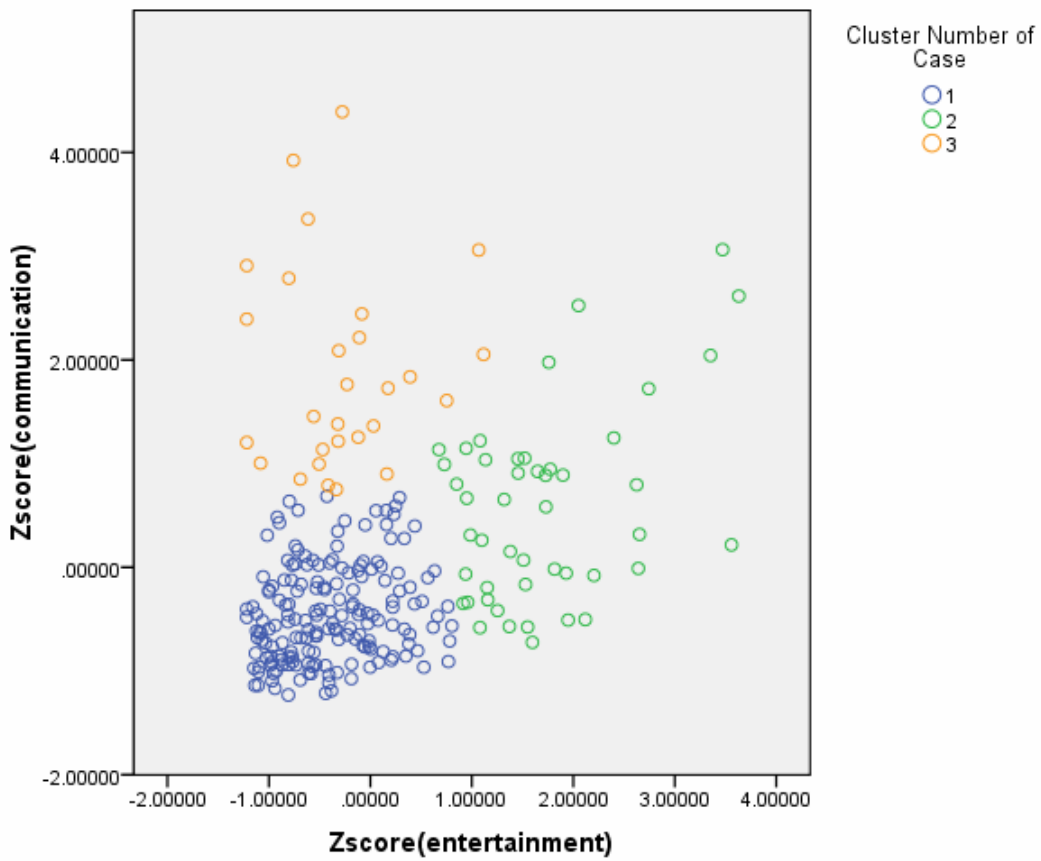
Scheme 2:
Benefit segmentation

Benefit segmentation

- Theory (Haley, 1968):
  - Benefit segmentation is an approach whereby it is possible to identify market segments by causal factors rather than descriptive factors.
  - The benefits which people are seeking from a given product are the basic reasons for the existence of true market segments.
- Study setup:
  - Correlations between the usage of different mobile services were sought with factor analysis to imply a common underlying sought benefit.
  - The relative importance of communication- (incl. voice and SMS) and entertainment-related services (incl. browser, music & radio and camera usage) was analyzed further.

Benefit segmentation

- Analysis results
  - 1: Average Users
    - No significant weight on either category
  - 2: Entertainment Users
    - Weight on entertainment services
  - 3: Communication Users
    - Weight on communication services



Benefit segmentation

- Segment descriptives:
  - The **Entertainment Users** segment is male-oriented and favors packages as data charging plans.
  - The **Communication Users** segment is also male-oriented and lacks SMS package and flat rate charging plans.
  - The **Average Users** segment is female-oriented and favors SMS package and flat rate charging plans.
- Note: demographics and subscription types could not describe the segments as well as in the heavy half segmentation scheme
  - …but should they? Should age and occupation have an influence?

Benefit segmentation

- Scheme pros:
  - Data collected by monitoring handset activity can be used to analyze how seeking different benefits realizes as usage of mobile services.
  - Understanding why smartphones are used gives possibilities for more relevant marketing communications.
- Scheme cons:
  - Sought benefits cannot be identified by just monitoring handset usage, especially because the usage rates of many (new) mobile services are currently very low.
  - Surveys polling users about their attitudes and interests are necessary for building a benefit segmentation scheme – the role of handset-based data collection is in evaluating how seeking different benefits realizes as the usage of specific applications.

Scheme 3:
Person-situation segmentation

Person-situation segmentation

- Theory (Dickson, 1982):
  - As demand results from the interaction of a person with his or her environment, a segmentation perspective that includes both the person and the situation is needed to explain demand and target marketing strategy.
- Study setup:
  - The context detection algorithm studied by Jiménez (2008) was used to identify location contexts (situations) for the panel participants.
  - Application launches on the smartphone can then be mapped as taking place in a certain situation.
  - The application launch rates for different user groups were computed in different location contexts to form person-situation matrices.

Person-situation segmentation

- Person-situation matrix for camera:
  - the share of launches taking place in different location contexts varies across different age groups

	Age group				situation features
	18-29 years	30-39 years	40-49 years	49+ years	
Home	26%	27%	20%	39%	*free time, substi-tutes*
Office	34%	23%	21%	32%	*busy, no privacy*
On The Move	40%	51%	59%	29%	*targets to shoot, no substi-tutes*
person features	*Genera-tion Y*	*Genera-tion X*		*Baby Boomers*	

Person-situation segmentation

- Scheme pros:
  - Marketing communications have the greatest possiblity to be relevant as the advertising and usage context can be the same.
  - Mobile service usage seems to vary across situations, even for only three crude location contexts – the potential in improving context detection.
- Scheme cons:
  - How to determine what are the relevant usage situations – e.g. what are the critical differentiating features?
  - How to identify the user's presence in a certain location context? Tracking handovers can be used to some extent…
  - The users of a service in a certain context must be properly identified.

Study limitations

- The sample
  - Biased, as expected, towards early adopters
    - not easy to generalize to a mass market of mobile services
    - comparative studies in other countries?
- Background questions
  - Improve pre-panel surveys for better descriptive variables with
    - refined demographics (e.g. birth year instead of an age group)
    - questions regarding the benefits sought from mobile service usage
    - questions regarding the lifestyle of panelists
    - …
- Collected usage data
  - The ability to reliably measure application run times

Conclusions

- Heavy half segmentation provides a snapshot of current service penetration rates and usage volume distributions and helps to identify the active users.
- Benefit segmentation is not a viable method based only on usage data analysis – but can be used in future studies to see how sought benefits realize as patterns of application usage.
- Person-situation segmentation offers an alternative approach by segmenting situations and thefore enabling the development of situation-specific offerings. Promising options for further research.

- Handset-based data collection can be used in many ways to research the market for segmentation purposes…but it should not be used as a stand-alone solution.

Thank you!

Questions?

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