The relevance of clusters and MDS for audiences analysis

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Presentation

- Context;
- Theoretical background and research questions;
- Method;
- Research Questions
- Results;
- Discussion and final remarks.

Context

- Audiences measurement for new media – what and how to do it?
  - Established and regular measurement of on-line activity (both user and site centric). Local source - Marketest (PT)
- Research project MAUS – media use and audiences behaviour:
  - Are audiences behaviours similar when consuming traditional media and when consuming "new" media?
  - Can we use statistical analysis tools such as MDS and clusters in order to categorize these new "active" audiences?
  - Are there cultural/social variables that can be used as metrics for these users clustering?

Theoretical background

- Reception studies (prototype stage);
- Social construction of reality (how does one visible behaviour explain a general cultural and social attitude);
- Marketing research (VALS and sphere of decision theories);
- Media studies (essential relation between subject and text/media)

Research project

- First stage - Initial descriptive conclusive study (national survey on media use/consumption);
  - behaviors; motivations, activities.

- Second stage – Ethnographic small scale study
  - Beliefs; expectations

- Third stage - statistical analysis preliminary results;
  - Isolate metrics; disguise patterns; define activities
    WE ARE HERE NOW…

- Fourth stage – Comparative qualitative study over protoytpe;
  - Verify metrics/clusters on test group

Research questions

- Motivations for audience behaviour on-line;
- Social and cultural dimensions associated with depicted behaviour/activities;
- Describe audiences values, use patterns/activities/goals, beliefs and motivations;
- Relation between cultural variables and users behaviours when facing different media;
- Can we use clusters and MDS has valuable analytical tools for on-line audiences study? (can we go beyond exposure or use marketing analysis' techniques?)

Research Objectives

- *Spacial map for internet activities*

- *Unveil dimensions of internet activities*

- *Cluster internet activities*
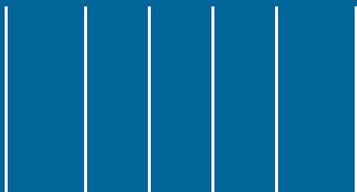
Hypotheses

- Cluster and MDS are valuable analytical tools for the study of audiences behaviour on-line – they allow for categorization and identification of users activties/behaviours;
- Clusters and MDS provide us with a relevant technique for on-line audiences study since:
  - They go beyond simple measurement (e.g. clicks) and introduce the possibility to use new variables/dimensions has evaluation tools.

Method

MDS – Multidimensional Scaling

    At a aggregate level

    3-dimensional (decision based on interpretability)

    Using ALSCAL (SPSS)

    Goodness of fit criteria: RSQ and stress

Cluster Analysis

    Hierarchical cluster analysis

    Ward linkage procedure

    Using SPSS

    Number of clusters (decision based on Aglomeration Schedule and Dendrogram)

Sample and Instrument

- **Sample Data**
  - A sample of 1,932 individuals
    - 599 (31%) Female
    - 1333 (69%) Male
    - Age between 12-18 years old
    - 1632 (94%) are students from Secondary Education and Further Education

- **Instrument:** self-filled questionnaire (paper and online).
  - The questionnaire was divided in 6 parts (total 47 questions):
    (1) individual characteristics (2) daily life - time usage
    (3) Media and technology at home (4) Television consumption;
    (5) Internet consumption; (6) Mobile phone consumption.
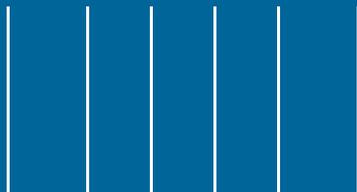
Results

- Users Activities on-line:
  - general web browsing
  - send sms
  - listen music
  - mail
  - chat
  - study related web browsing
  - watch video
  - download music
  - blogging
  - web site creation
  - play games alone and with other players
  - online communities
  - p2p download...

- 3-Dimensional MDS

Interpreting dimensions

Dimension 1: Easy task orientation (High/Low)
Dimension 2: Immediate results orientation (High/Low)
Dimension 3: Risk orientation (High/Low)

Results

3-Dimensional MDS

	Dim 1	Dim 2	Dim 3
Web browsing	H		
Listen music	H		
Mail	H	L	
Chat		H	L
Watch video	L		H
Download music		L	

H - High

L - Low

Results

3-Dimensional MDS

	Dim 1	Dim 2	Dim 3
Blogging	L		
Study related web browsing	L	H	
Web site creation	L		
Play games	L		
Online communities		L	L
P2p download			L
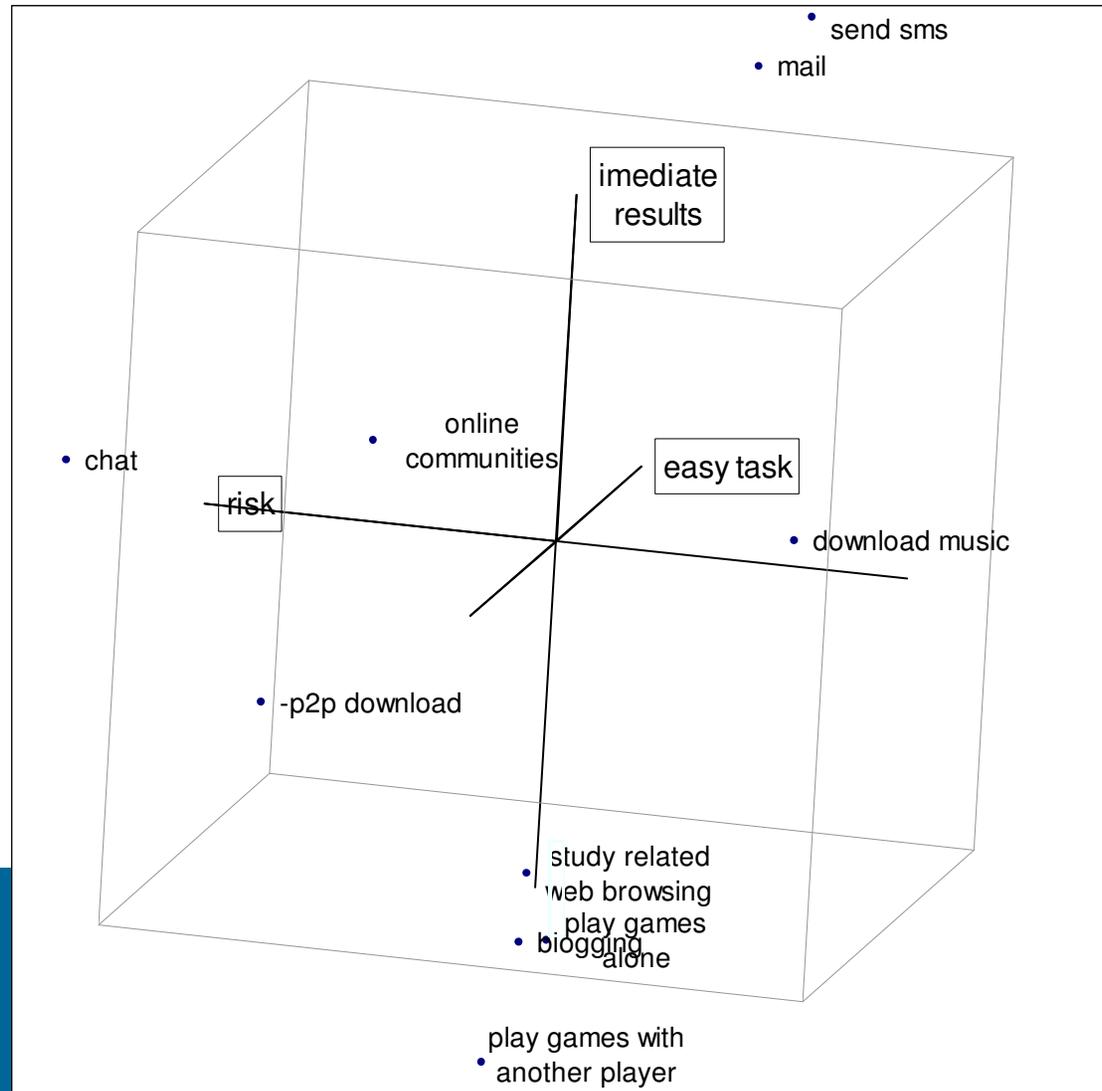
3-Dimensional MDS

3-Dimensional MDS - *Interpreting dimensions*

- ***Dimension 1: Easy task orientation (High/Low)***
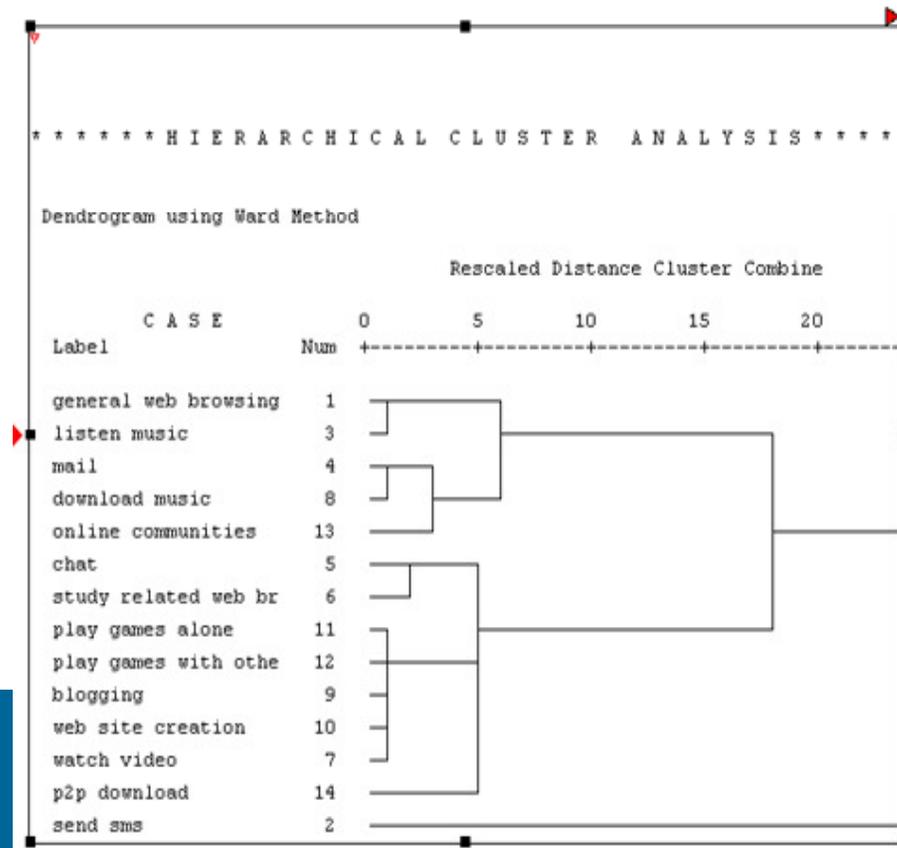 - Dimension 1 is related with the complexity of the task.
  - General web browsing, mail, and listen music are perhaps the most basic activities in the internet, those accessible to any beginner.
  - On the contrary, activities like web site creation or blogging reveal usually a more knowledgeable user. The same happens with many of the games available online

- ***Dimension 2: Immediate results orientation (High/Low)***
  - This orientation is obvious in chat, as synchronous activity.
  - Internet research is a superficial and quick way to get school homework done, so it seems to represent also an immediate results orientation.
  - Online communities need time to grow.
  - Music is often downloaded to be heard later.

- ***Dimension 3: Risk orientation (High/Low)***
  - P2p download is a very risky activity for the computer safety. The same happens with chat. The online communities do not have those kind of problems, but are sometimes considered a social risk.

Cluster Analysis

Dendrogram

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* * * * * H I E R A R C H I C A L   C L U S T E R   A N A L Y S I S * * * *

Dendrogram using Ward Method

                              Rescaled Distance Cluster Combine

         C A S E           0         5        10        15        20
Label                 Num  +---------+---------+---------+---------+---------+

general web browsing    1
listen music            3
mail                    4
download music          8
online communities     13
chat                    5
study related web br    6
play games alone       11
play games with othe   12
blogging                9
web site creation      10
watch video             7
p2p download           14
send sms                2
```

Cluster Analysis

- Cluster 1 includes general web browsing, listen music, mail, download music and online communities. So it is a cluster with the most basic internet activities.

- Cluster 2 includes chat, study related web browsing, play games alone, play games with others, blogging, web site creation, watch video and p2p download. So we can say that is a more sophisticated cluster.

- Cluster 3 includes only one activity, send sms, an activity that is unique in the sense that scores high in all the three dimensions. Cluster 3 should not be considered as such because it has only one activity.

Discussion

- MDS shows 3 dimensions for internet activities:
  - Easy of use
  - Immediate results
  - Risk
- Cluster analysis reveals 2 big clusters of internet activities.
  - The fundamental difference between these 2 clusters seems do be the degree of sophistication
- Levels of complexity and user sophistication growth follows two behaviours [to share][to act];

Final Remarks

- The dimensions found are not specific to internet behavior. They are deeply related with psychological characteristics of the individuals and cultures.

- Cultural variables tough seem to be the main variable modelling users behaviours/activities. These follow dimensions.

- The more complex behaviours demand for higher technology literacy;

- Users sophistication moves them across clusters.

- Qualitative results from previous stage and next step will be determinant in confirming cultural variables and users deeper characteristics.

Thank you

Coffee