The Influencing Factors on the Buying Behaviour in the Software Market

The case of desktop Operating System and Office Suite choices considering Proprietary and Open Source Software alternatives

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Background

- In the desktop software market the main software categories, Operating System and Office Suite, are dominated by a strong Proprietary Software incumbent, Microsoft. Microsoft Windows has more than 90% of market share (Netmarketshare 2011), Microsoft Office Suite has near 90% of market share (Gartner 2011)
- Considering the research about the influencing factors on the buying behaviour in the software market, how can these factors influence the future software choices between the incumbent against alternative Open Source software (OSS) or Proprietary Software (PS)?

Research Hypothesis

Methodology

- Research question: “Which factors have influence on the buying process decision of desktop Operating Systems and Office Suites considering Open Source and Proprietary software alternatives and how they influence these choices?”
- Data collected from online questionnaire that was sent to Small and Medium companies and Large Companies in Portugal.
- Closed questions: company profile and Operating System or Office Suite options in existent desktops and new desktops. Other questions (some with sub-questions): 5-point Likert scale.
- Constructs building: Cronbach-alpha test and factor analysis.
- Hypothesis test: non-parametric Wilcoxon Signed Rank test or parametric t-test (5% significance) choice after normality Kologrov-Sminov test.
- Second research stage: Logistical regressions of Operating System and Office Suite choice models (not detailed in poster).

Main Conclusions

- Hypothesis regarding influence factors in the desktop Operating System and Office Suite choices, confirmed.
- Incumbent software with advantage against Open Source or Proprietary software alternatives in five of the seven influencing factors, making the switch less likely.
- Search for software alternatives more likely in Office Suite than in Operating System.
- Small and Medium companies more likely to choose the incumbent software.

Further Research

- Research considering:
  - temporal evolution of software choices’ influencing factors;
  - other consumer segments;
  - other software categories (servers, tablet and smartphone operating systems, browsers, social networks, etc.)
  - new market trends like Cloud Computing or Software-as-a-Service.
  - other research methodologies like Structural Equations or Agent Base Modeling

Main Results

### Hypothesis | Literature Review | Consumer Choice | Research Results
---|---|---|---
| H1 Network Effects | The higher the network effects in the market (Katz and Shapiro 1985), (Economides 1996),... | Consumer perception regarding innovation, quality, security, support | Higher probability that the consumer will choose the alternative standard against the incumbent standard
| H2 Switching costs | The higher the switching costs in the market (Farrell and Saloner 1985, 1998), (Langolis and Robertson 1992), (Chuang 2011),... | Consumer perception regarding innovation, quality, security, support | Higher probability that the consumer will choose the alternative standard against the incumbent standard
| H3 Lock-in | The higher the lock-in effect and strong (Farrell and Saloner 1985,1998), (David 1985), (Liebowitz and Margolis 1994, 1999), (Liebowitz 2000), (Barnes, Gartland and Stack 2004),... | Consumer perception regarding innovation, quality, security, support | Higher probability that the consumer will choose the alternative standard against the incumbent standard
| H4 Local network effects | The higher the local network effect in the market (Dalle 1997), (Biele and Swarni 2010),... | Consumer perception regarding innovation, quality, security, support | Higher probability that the consumer will choose the alternative standard against the incumbent standard
| H5 Software brand image, innovation, quality, security, support | The better the perception regarding innovation, quality, security, support | Consumer perception regarding innovation, quality, security, support | Higher probability that the consumer will choose the alternative standard against the incumbent standard
| H6 Heterogeneity degree | The higher the heterogeneity of the consumers (the lesser the network effect) (Dalle 1997), (Dalle and Julien 2002), (Bessar 2003),... | Consumer perception regarding innovation, quality, security, support | Higher probability that the consumer will choose the alternative standard against the incumbent standard
| H7 Software global costs | The lesser associated costs to adoption of the alternative standard (licensing, support, training, compatibility, etc.) (Bonacorsii and Rossi 2003), (Liebowitz and Margolis 1994, 1995), (Musilnen 2003), (Lin 2004),... | Consumer perception regarding innovation, quality, security, support | Higher probability that the consumer will choose the alternative standard against the incumbent standard

Table 1: Survey and cross-sectional choice influencing factors (Operating System (OS) and Office Suite (OFF))

- **OS**: Software with advantage against Open Source or Proprietary Software alternatives in five of the seven influencing factors, making the switch less likely.
- **OFF**: Software more likely in Office Suite than in Operating System.
- **Small and Medium companies**: more likely to choose the incumbent software.

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