



UNIVERSITY of VAASA

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## Improving Performance With Better Usability

A Case Study on Self-Service System User Interface Development Project

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## Introduction

- Online Self-Service Systems are interesting option for companies providing services to larger audiences.
- **Benefits:** cost efficiency, freed resources, eliminating human errors, flexible opening hours (24/7), possibility for tailoring services to individual customers and fast service.
- **Problems:** How to design Self-Service System, that is both easy to use and economically sensible?
- In this case study, a HCI project, where online Self-Service System user interface was re-designed, is analyzed and reflected.
  - The target system was developed by Finnish Teleoperator Anvia (previously Vaasan Läänin Puhelin Oy) for providing customers online self-service for managing their broadband subscriptions, different service subscriptions and account settings.
  - Motivation for the development project raised from a) strategic decision to improve online services, and b) the limitations of previous version.
- Although several studies state that surprisingly many developed systems fail (Eason 2001), this development project provides insights on successful project management.

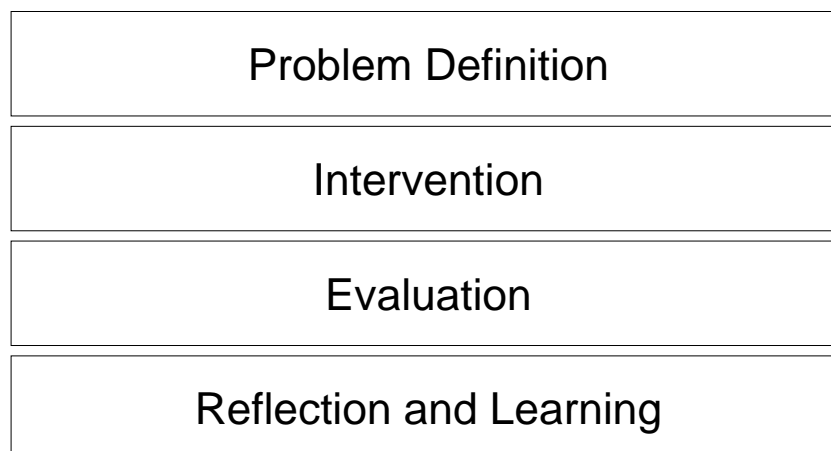


## Method

- This study is a research stressing the utility of innovations, e.g. innovation building approach (Järvinen 2004), while being a case study (Yin 1994).
- Used approach is Action Research applied on Design Science problem within HCI field.
- Why put focus on Action Research, although problem is in Design Science domain?
  - Should these approaches be combined (Cole et al. 2005) or are they one and the same thing (Järvinen 2007)?
  - How to ensure the objectivity of researcher – or should it be ensured at all?



## Design Research and Action Research

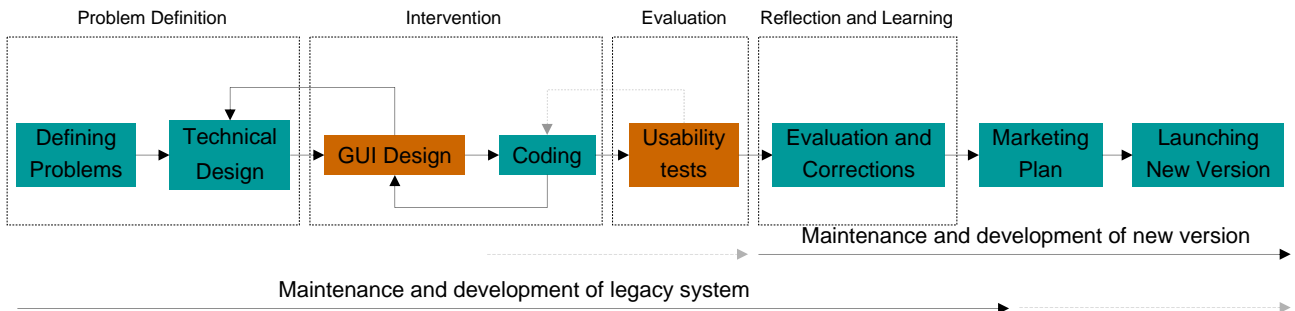


A Synthetized, Four-Stage Research Approach (Cole et al. 2005, p. 334).



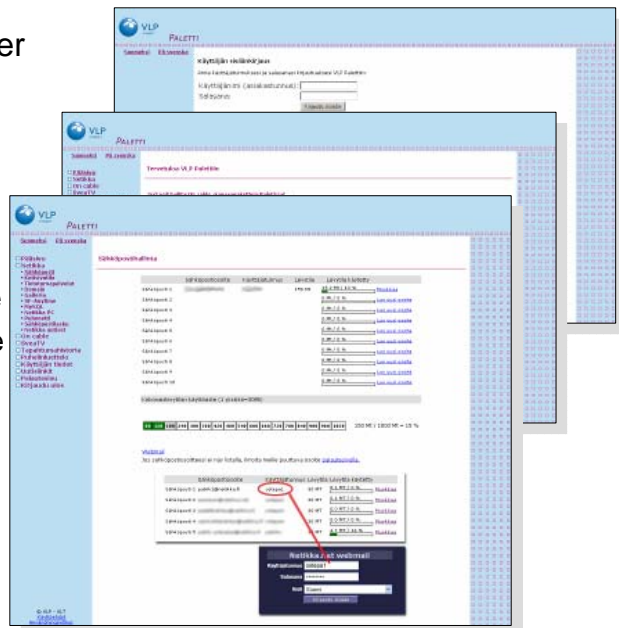
# Project outline

- The project was started in April 2007 and new version of Self-Service System called *Paletti* was launched to the public in March 2008.
- While developing new system, also the legacy system had to be maintained and kept operational -> this put pressure on shortening the development cycle.



# Case: Starting point

- Self-Service System, where user interface had several problems (April 12th, 2007):
  - Logical structure was missing
  - Scalability problems hindering further development
  - GUI was not seen as attractive
  - User status while using service was unclearly presented
  - Problems with internal and external coherence





## Case: Design

### ■ Challenges

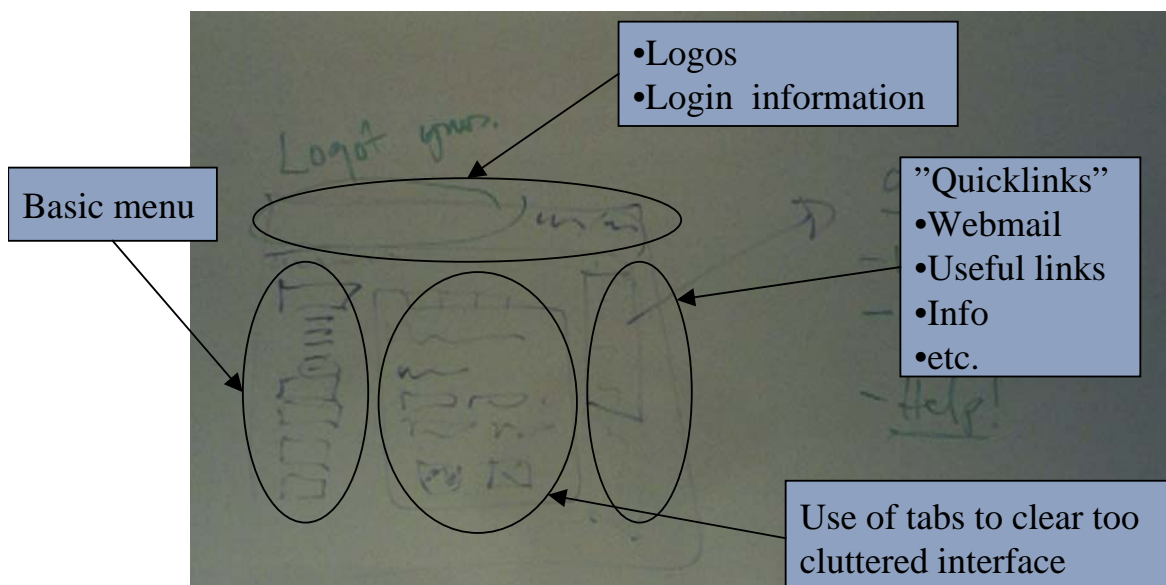
- Colors: Known brand or Finnet recommendations?
- Information architecture: Based on functions, logic, brand or marketing?
- How to separate private and business clients?
- How to make sure that user interface is really good?

### ■ Solutions

- Outsourced graphical design following defined technical specifications and general Finnet guidelines
- Information architecture according to designed services in three levels
- Transparent approach on user identification based on userID
- Usability testing conducted using outsourced laboratory



## First low-level draft of UI





## Case: Final version



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## Case: User tests

- Usability tests conducted in Mediacity iDTV Lab (Åbo Akademi), December 2007 using five test persons.
- Goal of user testing is "to obtain objective performance data to show how usable a system or product is in terms of usability goals, such as ease of use and learnability." (Preece et al 2002, p. 429).
- Service concept, menu structure and information architecture and page structure were tested, while test consisted of two parts:
  - a) Card sorting (for analyzing menu structure and logic)
  - b) Monitored tasks (test persons were given six tasks, and their performance was measured using camera for tracking eye movements and later they were interviewed)
- User behavior and comments were later analyzed.
- Results were encouraging for developers:
  - Users experienced the page structure and information architecture successful and none of the tasks were difficult to perform.

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## User Statistics

- The number of Paletti users is increasing steadily.
- When comparing number of logins between years 2007 and 2008, number of logins increased upon introducing new version of Paletti, but this was intentionally affected by marketing campaign.
- Number of free activations and changes varies from several hundreds to over couple thousand per month
- Number of chargeable activations varies from one hundred to nearly thousand per month.
- The usage statistics have its ups and downs, but it appears that Online Self-Service Systems are gaining increasing acceptance from customers.



## Discussion

- While traditional software engineering models do not emphasize learning and reflection, approach suggested by Cole et al. (2005) does this. This approach makes it possible to build a body of knowledge for best practices within profession.
- Effective development with limited resources requires flexible management. Outsourcing in right places improves expected results and objectivity – if used correctly.
- Focusing only on technical systems and forgetting UI issues, even brilliant systems will not be adopted into use by customers.
- Self-Service Systems provide an alternative channel for customers, but this should not be the only one. While there was a peak in user activity statistics upon launching new version, the statistics returned to normal shortly after this.
- User feedback suggests, that Self-Service System has managed to become a standard way for providing services to customers and this trend is steadily gaining popularity.



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