

Semester thesis:

Local browsing – information seeking tailored to mobile phones

Supervisor: Fabio Magagna, Chair of Management Information Systems, ETH Zurich

This project consists of two theses. The first thesis is for two, the second for one student.

Motivation/Background

Mobile internet is gaining on important. It is to expect that in the next time more people access the internet from their mobile phone than from a desktop computer. Nevertheless is the experience in using the mobile internet compared to a desktop internet different.

The Chair of Management of Information Systems is doing research since a few years in analyzing how people seeking information on their mobile phone and how the information seeking process can be tailored to mobile phones. As result of our studies [1][2][3] [4] we created the white paper “a concept for a real mobile search engine” [5]. Based on the white paper we developed in the working paper [6] a smart phone tailored way of information seeking. We called our approach “local browsing”. The aim of this thesis is implement and optimize the in [6] described engine.

Leanings

The goal of this thesis is that the students design and implement a beta prototype of a conceptual study. The students should get to know the process of a product development. Furthermore the students should gain knowledge in the fields of Information retrieval, mobile user experience and recommender systems. We apply in this thesis an adopted version of the popular product development framework “stage-gate method” (http://en.wikipedia.org/wiki/Stage-gate_model).

Goal

The aim of this thesis is to create a system which helps user in mobile information seeking. Our approach should better perform as existing mobile search engine (e.g. search engine) and mobile browser. We measure the performance of a information seeking system in two ways. First performance indicator is the number of inputs. We aim to create a system that the user can seek the same information as on a search engine but with less input action (less clicks). The second indicator is the user satisfaction and acceptance of the new system. We will measure this with a survey based on the Technology Acceptance Model (TAM) and with measuring how long people use our system (comparing session time).

Deliverable

What	Thesis (1 or 2)
Implementation of the Recommender System described in [6]	1
Unsupervised crawling and indexing system for the local browsing content	1
Windows Phone App: "WebNear.me" and "Local browsing" (published in store)	2
Test case studies for comparing local browsing with other information seeking system	2
Lab experiment about <ul style="list-style-type: none">- Efficiency (number of clicks)- Acceptance/Satisfaction	2

Project plan

The project consists of four phases. Illustration 1 gives an overview about the different work-packages. To continue from one phase to the other the previous work must fulfil so called "gate conditions". The gate conditions are described below. Furthermore we explain the details of the work packages in appendix 1.

In a first phase we study related work and create an implementation plan. In the second phase we setup a test environment. The test environment has three parts: the client, the test data and the recommender system. We launch the existing application webNear.me [4] for collecting part of the test data. In aim of the third part is to test and optimize the system. We will collect feedback and calibrate the recommender system. Furthermore we will take decision about the used content of "local browsing". Finally in the fourth part we will optimize and automate the system. We will automate the content collection process and optimize the client to speed and availability.

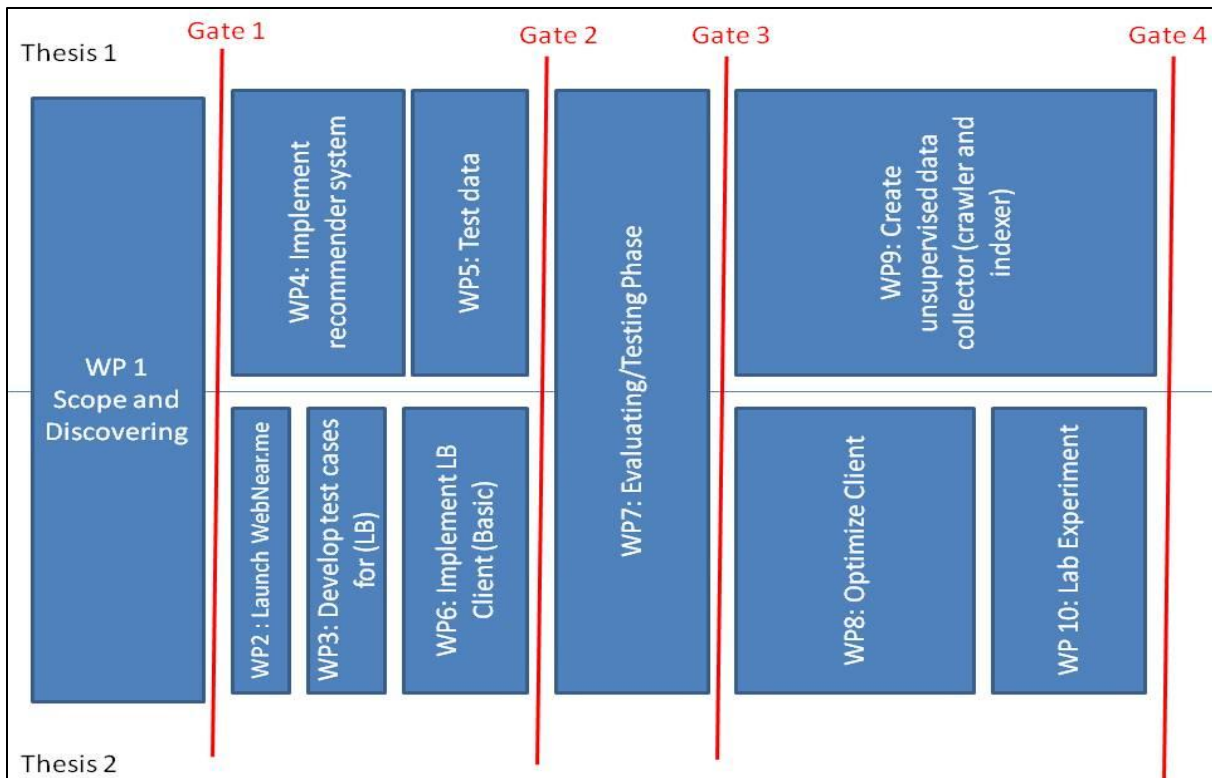


Illustration 1 - Project plan

Gate 1:

- Implementation plan

Gate 2:

- "Useable" version of "local browsing" as described in [6]

Gate 3:

- Collection of user feedback (min. 4 people) including list of concern
- Concept for improvement

Gate 4:

- A "Beta" version of "local browsing" which can be launched to public

Timetable

Thesis 1

WP/Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WP1	■	■													
WP4			■	■											
WP5					■										
WP7						■	■								
WP9								■	■	■	■	■			
Report/Buffer													■	■	■

Thesis 2

WP/Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WP1	■	■													
WP2			■												
WP3				■											
WP6					■										
WP7						■	■								
WP8								■	■	■					
WP10											■	■			
Report/Buffer													■	■	■

Supervising team

Prof. Dr. Juliana Sutanto Head of MIS ETHZ

Fabio Magagna, MIS ETHZ, fmagagna@ethz.ch (main supervisor)

Basil Hess, MIS ETHZ, bhess@ethz.ch

Dr. Marcel Blattner (Recommender system specialist), FFH Schweiz

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Appendix 1: Work packages

WP1	
#Students	3
TIME (h per student)	32
GOAL	Get and detailed Implementation plan/concept, understand the background
TASK 1	Studying related work
TASK 2	Studying existing implementation plan
TASK 3	Planning/modifying implementation

WP2	
#Students	1
TIME (h per student)	16
GOAL	Windows Phone App: WebNear.me
TASK 1	Port it to Windows Phone
TASK 2	Test/Improve scalability of the server
TASK 3	Launch it in the app store

WP3	
#Students	1
TIME (h per student)	16
GOAL	Have a list of test case
TASK 1	Collecting test cases
TASK 2	Plan experiment to test them

WP4	
#Students	2
TIME (h per student)	16
GOAL	Implementation of the recommender system
TASK 1	Implementation of the recommender system
TASK 2	Create documentation especially of the data interfaces

WP5	
#Students	2
TIME (h per student)	8
GOAL	Content for (LB)
TASK 1	Process data from WebNear.me and other sources
TASK 2	Connect it with the recommender system

WP6	
#Students	1
TIME (h per student)	24
GOAL	Windows Phone App: Local browsing for internal tests
TASK 1	Implement client
TASK 2	Connect it with the server side

WP7	
#Students	3
TIME (h per student)	16
GOAL	Have an concept for “publishable” system based on the test data
TASK 1	Use the app and in different situation, collect feedback
TASK 2	Create list of concerns and solution to solve them

WP8	
#Students	1
TIME (h per student)	24
GOAL	Windows Phone App: Local Browsing (2)
TASK 1	Fix bugs and concern found in WP7
TASK 2	Optimize it in the terms of speed

WP9	
#Students	2
TIME (h per student)	40
GOAL	Have a system which automatic collected content for local browsing
TASK 1	Implement crawling engine
TASK 2	Implement indexer
TASK 3	Test system

WP10	
#Students	1
TIME (h per student)	16
GOAL	Have a list of user feedback
TASK 1	Design a survey
TASK 2	Run a lab experiment with min. 10 people. Film their performance
TASK 3	Analyze the results

References

- [1] Magagna, F., Gasimov, A., Sutanto J., "Mobile Search Engine as a Business Model," International Conference on Electronic Commerce (ICES 2010), August 2010, Honolulu, Hawaii
- [2] Gasimov, A., Magagna, F., Sutanto J., "CAMB: Context-Aware Mobile Browser", In Proceedings of the 9th ACM SIGMOBILE Conference on Mobile and Ubiquitous Multimedia (MUM'10), Limassol, Cyprus, December 2010.
- [3] Magagna, F.,Sutanto, J., "Reeco: A privacy-safe mobile context aware recommender system", International Journal of Computer Engineering. 2012.
- [4] Magagna, F., Hess, B., Sutanto, J. "Building Location-Aware Web with SALT and Webnear.me", International Conference on Mobile Web Information Systems.
- [5]Magagna, F. (2011) "Why web search on mobile phones is web browsing OR A concept for a real mobile search engine".
- [6] Work in progress: Magagna, F. "Local browsing – a mobile phone tailored search engine".