

AppScrobbler

A mobile application giving users
insights into their app usage

Daniel Waxweiler

Supervisor:

Prof. Dr. Antonio Krüger

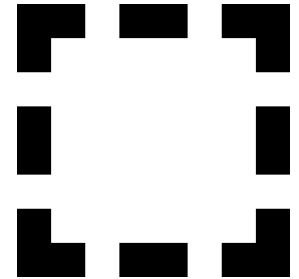
Advisors:

Dr. Matthias Böhmer

Christian Lander

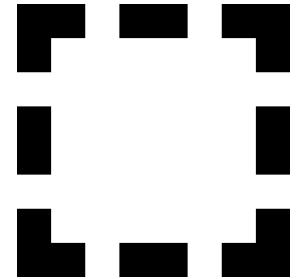
Outline

- Introduction
- Motivation
- Goal
- Related work
 - Previous work
 - Socio-economic analysis
 - Similar apps
- Concept
 - Prototypes
 - Evaluation
 - Implementation
 - Next steps
- Conclusion



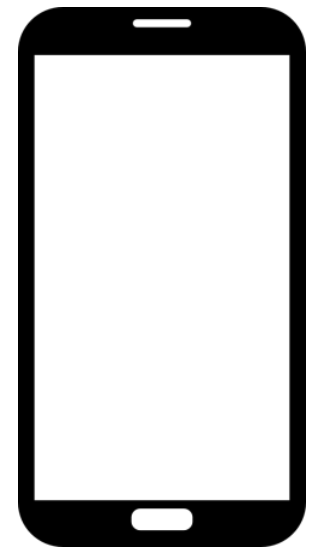
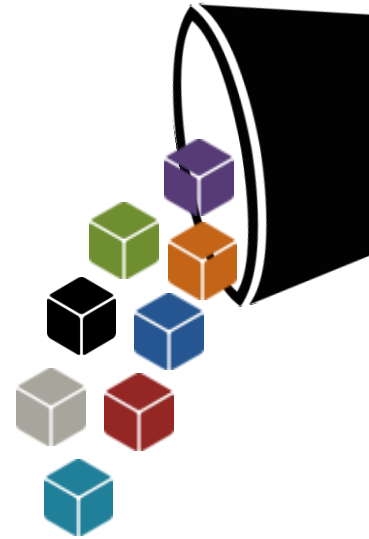
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Introduction

- Over 50% of world-wide sold cell phones are smartphones¹
- Offered features and usage time constantly increase
- Over 1 million available apps for Android on the Google Play Store²

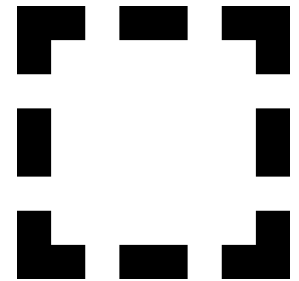


1: <http://www.gartner.com/newsroom/id/2573415>

2: <http://www.technobuffalo.com/2013/07/24/google-70m-android-tablets-1-million-android-apps/>

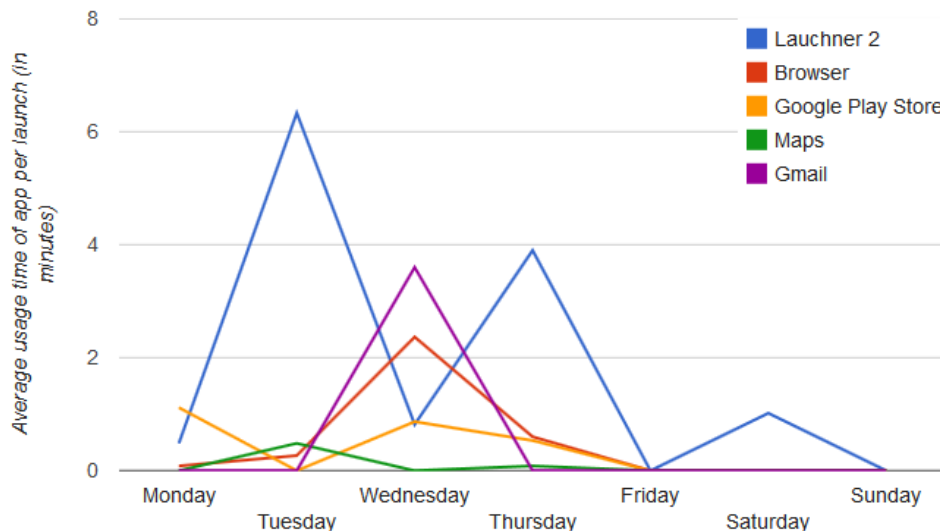
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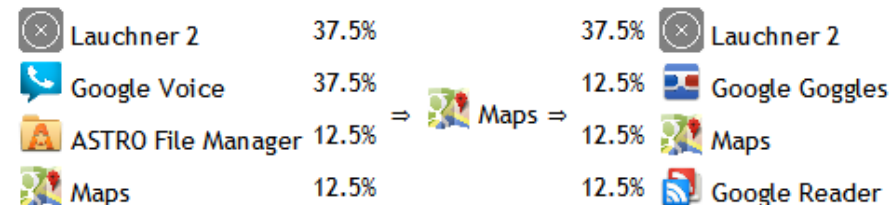


Motivation

- How much time do you spend on WhatsApp per day? How is the usage influenced by context like location and time of day?
- Quantified self: inputs, states, performance in daily life
- Discovered research area of mobile application usage as research assistant



Nike+ FuelBand SE



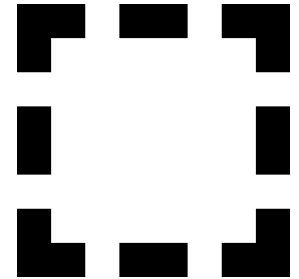
http://en.wikipedia.org/wiki/Quantified_Self

http://www.nike.com/de_de_de/c/nikeplus-fuelband

<http://appscrobbler.org/>

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Goal

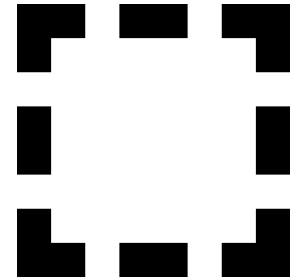
Give users insights into their own app usage through a mobile application

- Discover and realize best data representations and comparisons with friends
- Users should be able to draw sound conclusions
- More transparency of collected data



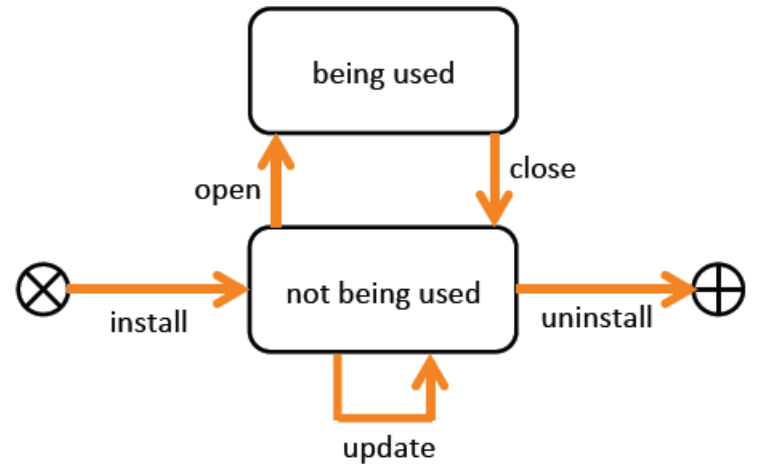
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Previous work

- Virtual sensor *AppSensor*
- *appazaar*: mobile app recommender deployed on the Android app store
- Collected app usage data of 4.125 users over 6 months



Previous work

- On average
 - Smartphone usage: 59 minutes per day
 - App session: 72 seconds
- Smartphones still mostly used for communication
- Single app sessions much more frequent than sessions with two or more apps

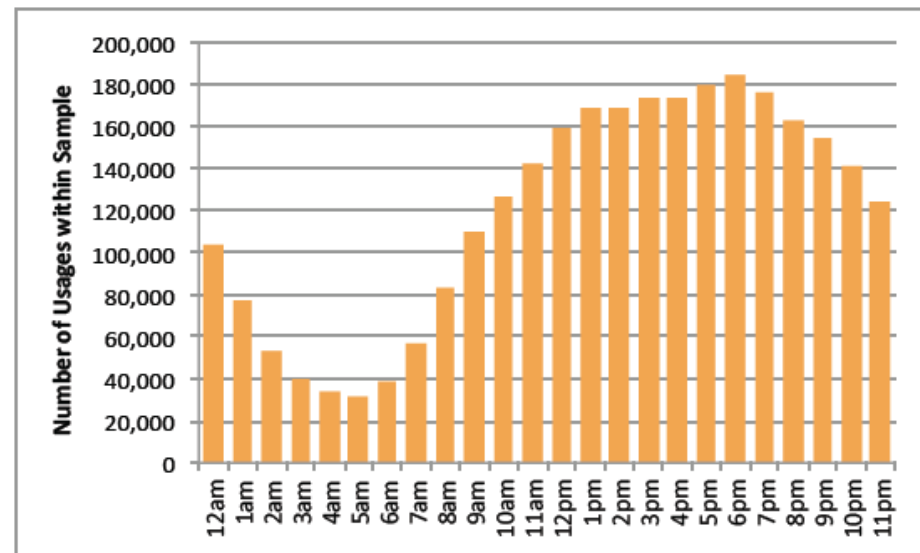
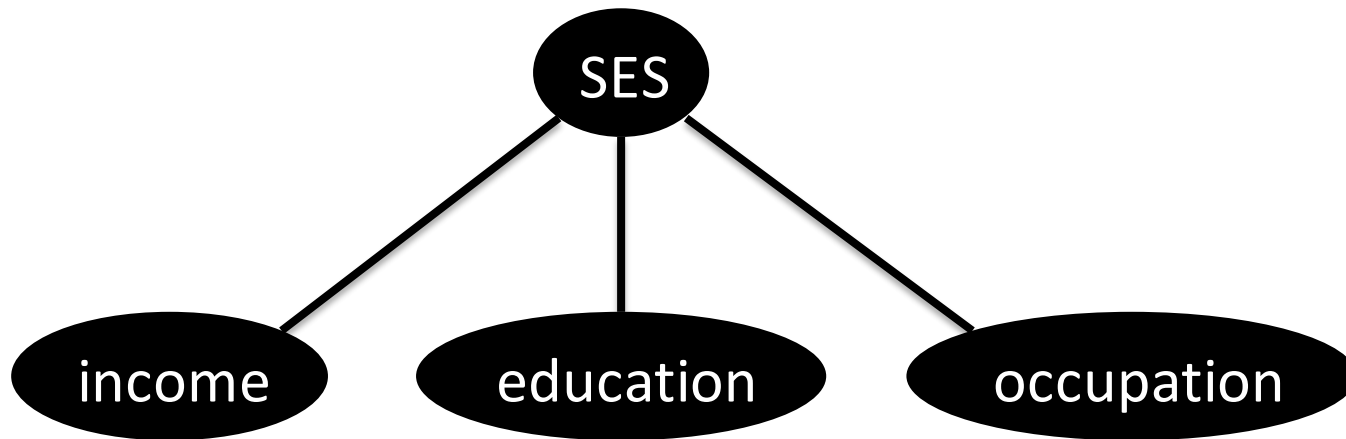


Figure 3. Total number of recorded app utilizations during a day.

Socio-economic analysis

- Different socio-economic status (SES) groups



- In-device logger on a jailbroken iPhone
- 34 participants, 3 groups: high, low, very low SES
- Over 6 to 12 months

Socio-economic analysis

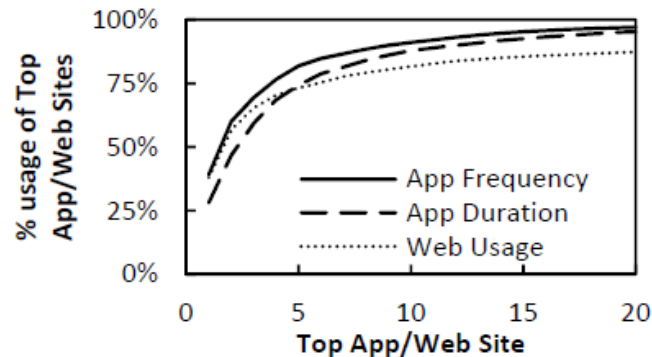


Figure 1: A small number of applications and websites dominate usage

Table 2: Effect SES on application adoption and usage

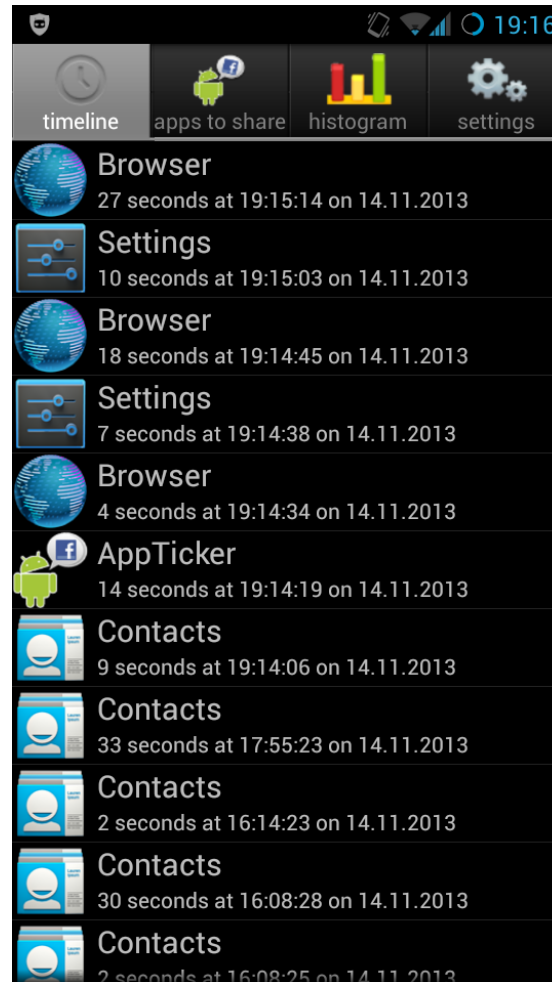
SES:	High	Low	Very Low
App visits / day	57	74	96
Duration / day (min)	53	77	122
% Top 10 app visits	94	90	84
All app installs	0.30	0.37	0.64
Paid apps / month	0.5	1.4	2.3
\$ / month spent on apps	\$1.3	\$2.6	\$3.0
% Top 10 web visits	95	91	82

- Diverse app usage throughout the study in terms of duration and frequency
- Very low SES group stays longer on religious and adult websites, but shorter on institutional websites than both other groups



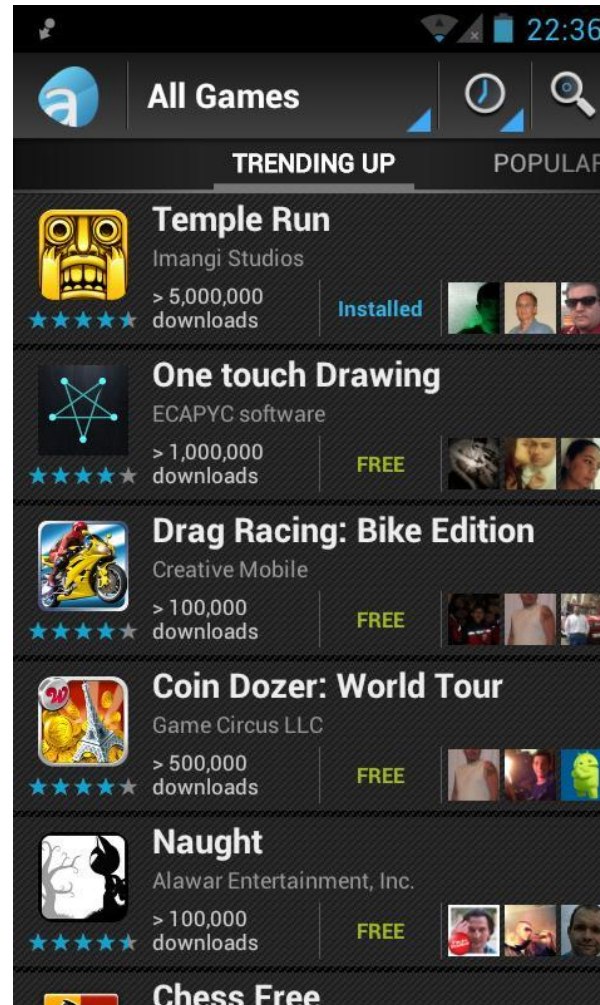
AppTicker

- Developed at the hciLab, University of Stuttgart
- App usage share application
- Focus on sharing



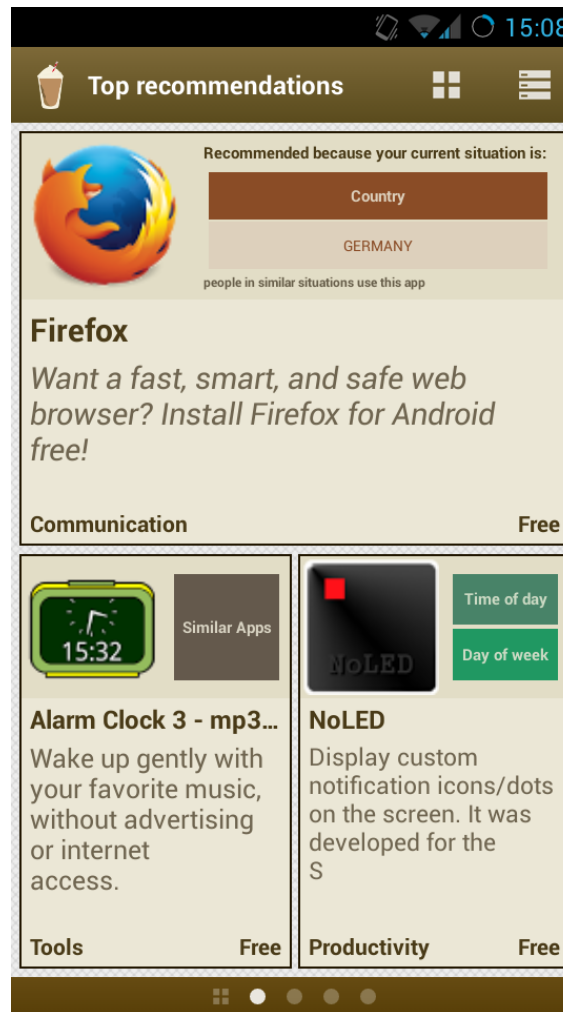
AppAware

- Developed by 42matters AG
- Social-driven app recommender
- Tracks only installations, updates and uninstallations of apps



Frappé

- Developed by Telefónica Research
- Context-aware app recommender
- A few data visualisations



<http://frappe.cc/>

Image on the right from <https://play.google.com/store/apps/details?id=es.tid.frappe>

Similar lock screen widget from the Fairphone OS

FAIRPHONE OS
LEARNS FROM YOU

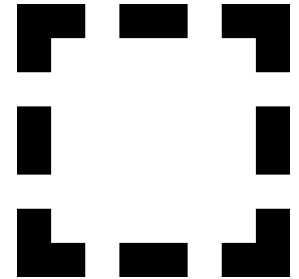


Comparison

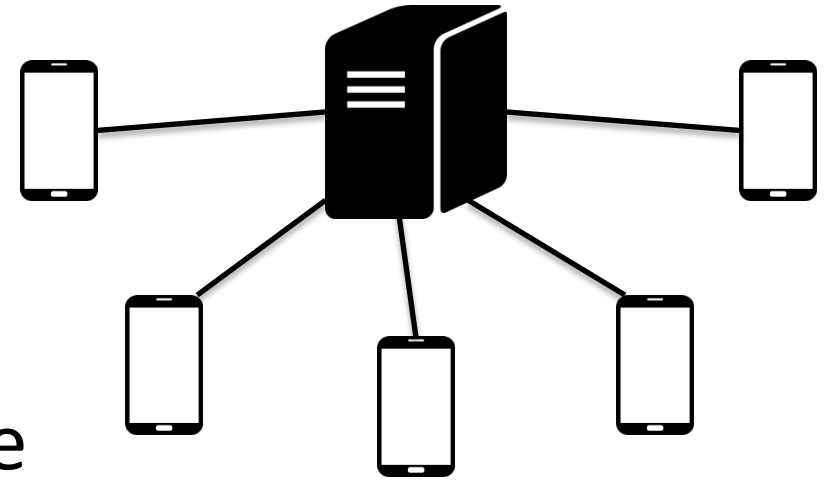
	Recommender system	Social features	Privacy options	Number of data visualisations
AppTicker		sharing on Facebook	X	2
AppAware	X	comparing with friends	X	1
Frappé	X	sharing through NFC	not necessary by design	6
Fairphone widget			not social	2
AppScrobbler		comparing with friends & sharing on Facebook	X	currently 5

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Concept



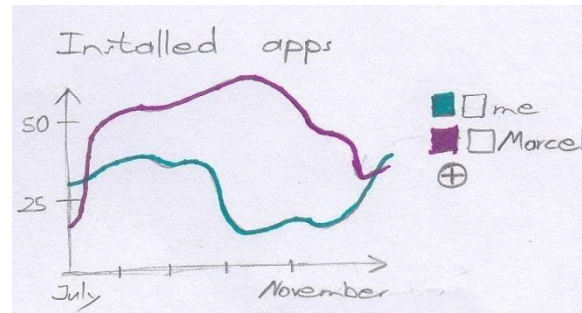
AppScrobbler project

- Client-server architecture
- Library for Android developers
- Website with app usage statistics for developers
- App giving users insights into own app usage based on the library

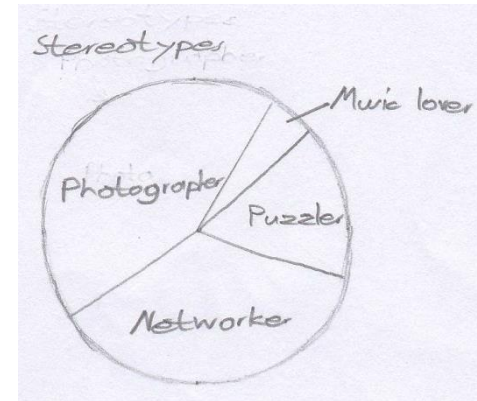
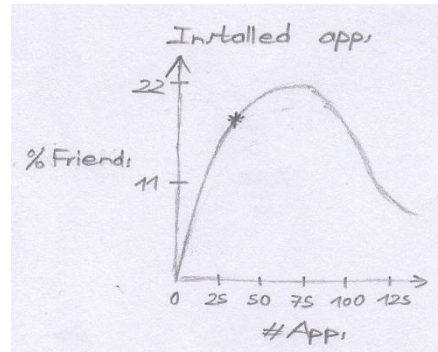
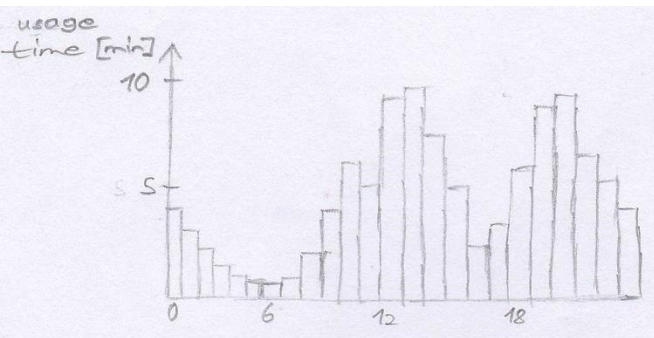


Prototypes

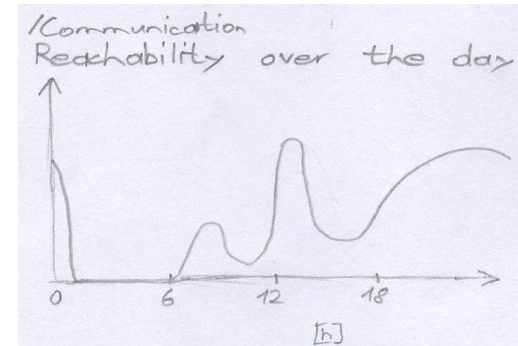
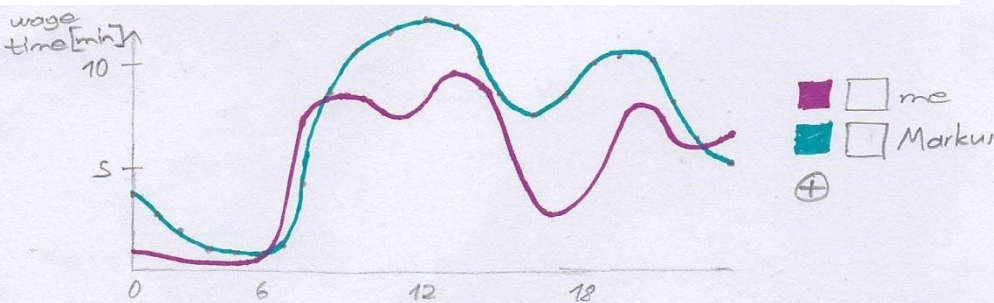
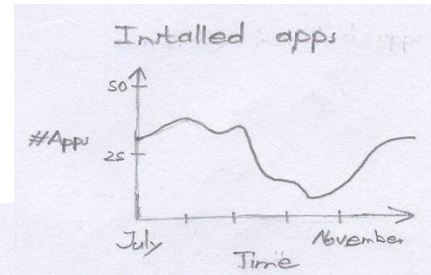
Data visualisation sketches



- Stereotypes
- 📷 Photographer
 - 🌐 Networker
 - 🏃 Couch sportler
 - 🧩 Puzzler
 - 🎵 Music lover
 - 💰 Banker




Marcel is now best reachable by WhatsApp, Gmail, Call, SMS

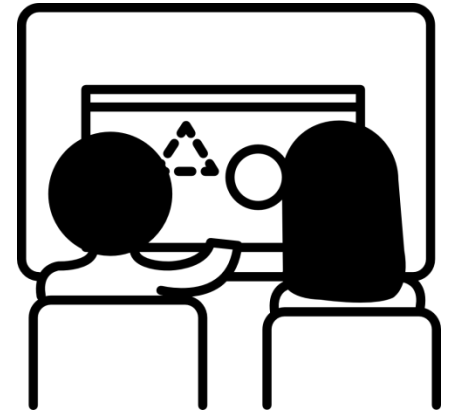


Old school ▼ Geeky

Evaluation

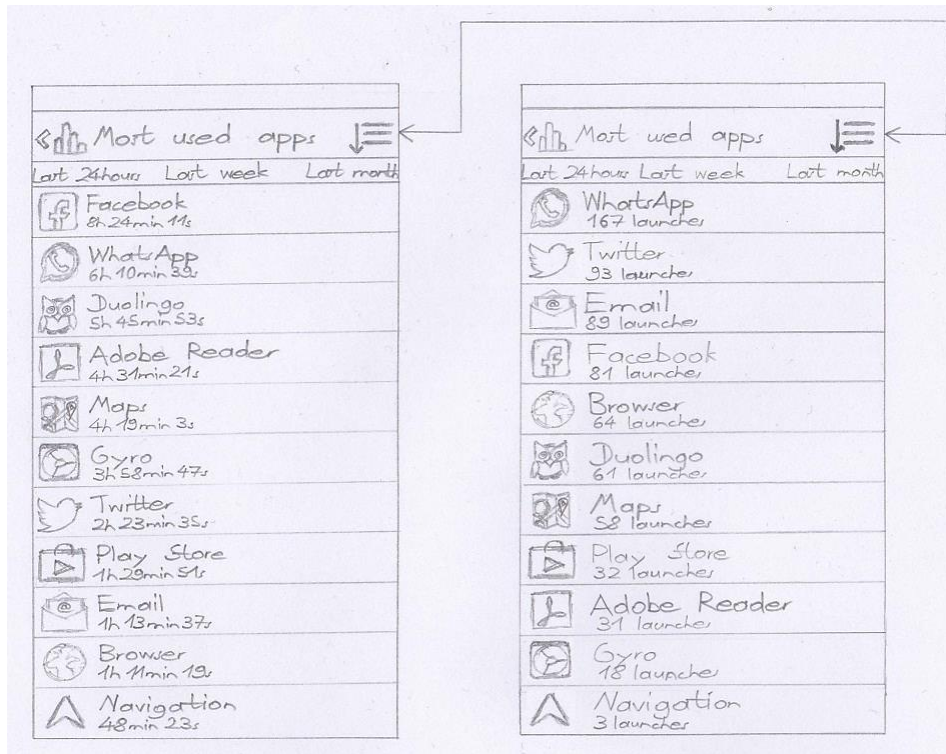
Requirement study

- Informal, open-ended interview
- 6 participants, 2 female, 20-25-year-old students of diverse subjects
- Most used apps, communication availability and stereotypes seem popular
- Common lack of interest in number of installed apps
- Privacy concerns 

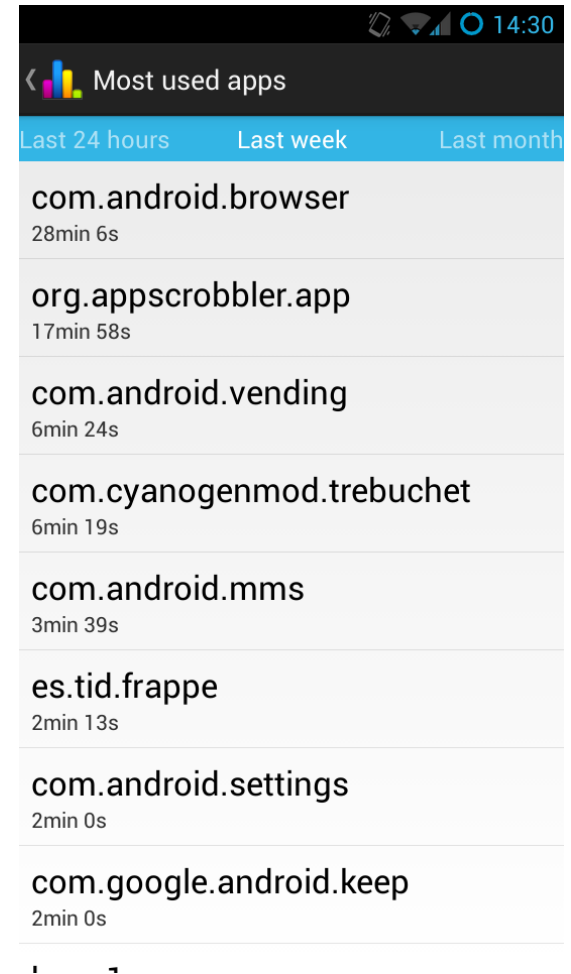


Implementation

- Wireframes serve as basis





- Early version with first data visualisation



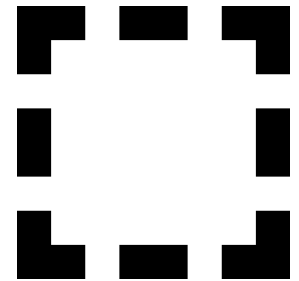
Next steps



- More visualisations
- Comparisons with friends 
- Privacy options like hiding particular apps
- Early beta versions for a test group
- Reaction to feedback 

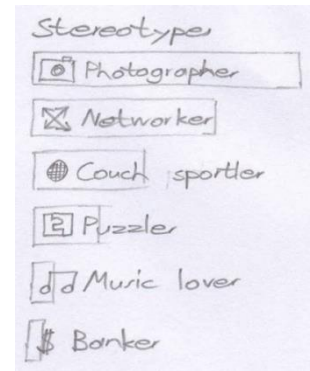
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Conclusion

- Smartphones and apps become more ubiquitous
- AppScrobbler app will provide users with insights into own app usage
- Informal, open-ended interview to evaluate the first sketched ideas
- Take feedback from test group into account

A screenshot of an Android phone's 'Most used apps' screen. The status bar at the top shows the time as 14:30. The screen has a dark header with a back arrow and the text 'Most used apps'. Below the header are three tabs: 'Last 24 hours', 'Last week', and 'Last month'. The main content is a list of apps with their package names and usage time. The data is as follows:

Package Name	Usage Time
com.android.browser	28min 6s
org.appscrobbler.app	17min 58s
com.android.vending	6min 24s
com.cyanogenmod.trebuchet	6min 19s
com.android.mms	3min 39s
es.tid.frappe	2min 13s
com.android.settings	2min 0s
com.google.android.keep	2min 0s



Do you want to try out the app?

Contact me: daniel.waxweiler@gmail.com

Digital attributions

- Bucket designed by Alice Mortaro from The Noun Project
- Clock designed by Brandon Hopkins from The Noun Project
- Feedback designed by David Ly from The Noun Project
- Footstep designed by Taylor Medlin from The Noun Project
- Friends designed by Luis Prado from The Noun Project
- Location designed by John Caserta from The Noun Project
- Outline designed by Alex Fuller from The Noun Project
- Pdf by ipapun
- Privacy designed by Lars Kloster Silkjær from The Noun Project
- Question designed by Anas Ramadan from The Noun Project
- Server designed by aLf from The Noun Project
- Smartphone designed by Nathan Grealish from The Noun Project
- Work designed by Ainsley Wagoner from The Noun Project