

Summary



This bachelor assignment describes a research and design process to implement personalisation of an energy-reduction app. Personalisation is defined as “the adaptation of a system according to the needs and preferences of an individual user” (Taylor, Papadopoulou, Gallacher, & Williams, 2013). In case of an app, it means that the app provides the desired information and features to the user. Each user will have different desires, needs and preferences, which is why implementing personalisation is challenging.

Especially in the case of Ipsum, because the target is to reach one million people in the Netherlands with their energy-reducing app. All these people should like to use the app in order to keep them motivated to save energy on the long-term and have a positive impact on the national energy consumption. That is the aim of Ipsum.

The Ipsum app needs to accomplish this by providing the user detailed insight in his energy usage and real-time feedback with practical tips to save energy. The app communicates with a smart meter to collect the energy data. On this way, the user receives energy data about his electrical devices, can save on these energy usages by saving actions and can follow his progress by the app.

The app, as already described, is app 2.0 of Ipsum which provides each user the same tips and features. This is not in line with the aim of Ipsum, the app should be more personal attractive to reach a million potential users. This cannot be achieved by an one-fits-all solution (Wever et al., 2008). That is why, the scope of this bachelor thesis is focussing on personalisation of app 3.0 and further versions.

The goal of this research is to find the characteristics of interested users, which functions they are interested in and how to use these insights to implement personalisation in an app. This information is gathered by literature research, focus groups and a survey executed by Multiscope. Based on the literature research and Multiscope survey, a design process is started to create ideas. After evaluating them by the focus groups, user profiles are found. These are, additionally, confirmed in general on a larger scale by the Multiscope survey. The focus groups resulted in new ideas as well, which became concepts by adding the user profiles. Finally, these concepts are, after a last evaluation by a small survey, the basis of a practical advice to Ipsum about how to implement personalisation to their energy-reduction app. This advice will make sure that the Ipsum app 3.0 or further versions improve the awareness of its users about energy consumption and stimulates to save energy.

The Multiscope survey stated that 33% of the 505 participants were interested in the Ipsum app. Another 36% doubted about added value of the app, mostly because of reliability issues about the app, the smart meter or both. This means that about 70% of the participants will consider installing the app, however this percentage is only reached by underlining the reliability and security of the app and smart meters. Furthermore, it seemed that 3- or 4-person households have most interest in the app and the younger the more interested they are.

The focus groups and Multiscope survey resulted in three important user profiles: ‘Carers’, ‘Sobers’ and ‘Majors’. The survey, however determined another unknown user profile. This meant that more research is needed to this user profile. *Image 1* gives a description of these user profiles.

	Incentives	Behavioural tips	Change device tips	Characteristics	Context
'Carers'	Costs Insight Education Environment	Very interested	Interested	Mostly 50 > years old High self-awareness Surely interested in app	Modal income or less
'Majors'	Costs Insight Saving as a 'game'	Interested	Maybe interested	Maybe interested in app	1- or 2-person household MBO or lower
Unknown				< 50 years old Willing to pay for app	Most WO
'Sobers'	Costs Insight	Not interested	Not interested	< 50 years old Low self-awareness Not aware of usage Interested in app	> 1-person household > modal income

Image I - Description of the user profiles

Based on the research can be concluded that the functions of app 2.0 are a strong base to build additional features on. A feature will only be showed to the user profiles that are interested in that feature to make the app more effective. The user cannot choose their user profile themselves appeared from the concept evaluation. Participants did not understand what user profiles really meant and what the consequences were. For the reason of that, the app needs to recognize a user profile itself. This does not mean that everything show be out of side of the user. Participants of the concept evaluation stated several times that they want to know what the app did and where certain values came from. Thus, the app should provide this information, except from the user profile, to reinforce the reliability of the app. All this research and user evaluations resulted in the following advice to Ipsum (*Image II*).

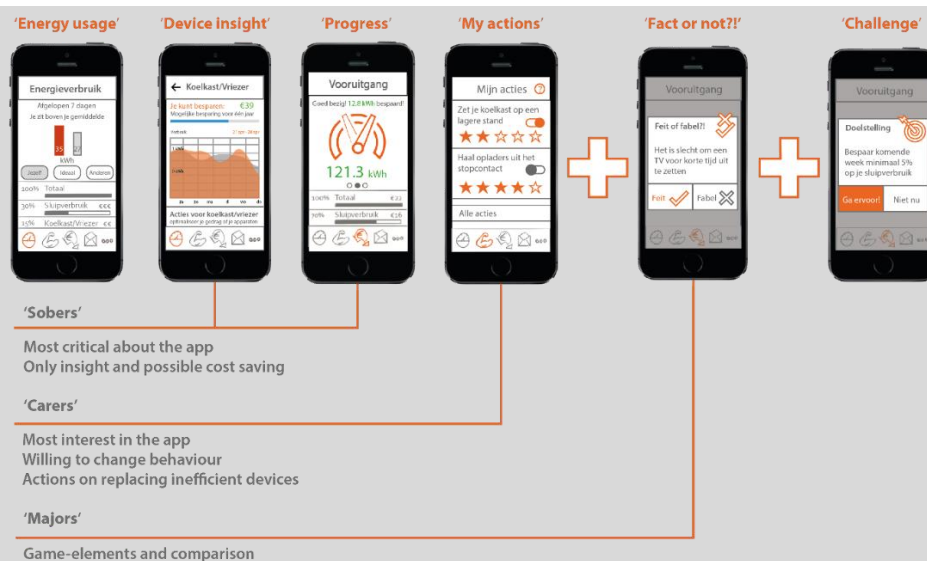


Image II - Visualisation of the advised implementation of personalisation

A user can walk through the following stages:

1. All users will start as 'Sobers' with the basis of the app, discovering the app on their own
2. When a user is regularly selecting and executing actions, he is a 'Carer' and will get more personal tips and feedback on his behaviour
3. When a user is regularly accepting the 'Fact or not?!' feature, he is a 'Major', so the app will provide the 'Fact or not?!' notification on a more frequently basis
4. When a user is regularly accepting the 'Challenge' feature, he will keep receiving challenges on a weekly basis

References

- Taylor, N. K., Papadopoulou, E., Gallacher, S., & Williams, H. M. (2013). Is There Really a Conflict Between Privacy and Personalisation? In R. J. Pooley, J. Coady, H. Linger, C. Barry, M. Lang, & C. Schneider (Eds.), *Information Systems Development: Reflections, Challenges and New Directions*. New York, NY :: Springer.
- Valencia, P., Haak, A., Cotillon, A., & Jurdak, R. (2014). Genetic programming for smart phone personalisation. *Applied Soft Computing Journal*, 25, 86-96.
- Wever, R., Van Kuijk, J., & Boks, C. (2008). User-centred design for sustainable behaviour. *International journal of sustainable engineering*, 1(1), 9-20.