

## Reflection

In this section, I will personally reflect on this graduation research. Based on five prescribed themes and with additions from my own experience this reflection is composed.

### *The relationship between research and design*

In the different courses of the Master track Management in the Built Environment, my definition of designing has changed. I thought, I would leave the practice of designing behind after choosing for this specific master track and 'abandoning' the real design discipline of architecture, but I was wrong. Throughout the full master track, including this master thesis, I used my designing background to approach challenges. For me, researching is also designing, as it entails putting all bricks together to form one consistent report. Especially in the beginning of the graduation research, obtaining an overview within the field and choosing my angle was a difficult process. The gap of prior knowledge was difficult to reduce while participating in two other courses as well. After finalising the research proposal I felt more freedom to design the process and chose the methods that would fit an user-centred angle of the research. The user journey method is an illustrative way of presenting information derived from interviews. As the method is not very strict, many different forms can be found, the process of designing a blue print to obtain the same information in every interview, was a creative process. I found it interesting to see what 'seeing their own user journey' can do with the people I have interviewed. I received many happy faces and lovely reactions when verifying the information with the interviewees. They recognized themselves in the journey. Using this method throughout this research was for me a very convenient journey. Although coming to the blueprint was a long process, I was great to see that my own composed way of conducting the interviews worked.

### *The relationship between your graduation topic, the studio topic, the master track and the master program.*

Being able to connect to a research group was of great value for my research. In the beginning this steered me in a direction but also gave me the freedom to interpret information in a different way and review the topic from a different angle. After some explorations between different user groups, university employees and visitors, new users became my focus.

I was able to enrich and use the data derived by the smart campus research team as well. This gave me a concrete starting point after p2 and provided extra data to base the conclusions upon. As the focus of the research group is on the managerial and user point of view, I was able to zoom in on the user perspective and analyse the data from a different angle.

My reason of choosing a Real Estate Management topic was because I really liked the REM course but still had the feeling I did not fully understand the discipline. During to my internship I explored the fields of urban area development, housing and project management. To broaden my knowledge and explore the field of Real Estate Management further, I choose for this graduation lab.

### *Elaboration on research method and approach chosen by the student in relation to the graduation studio methodical line of inquiry, reflecting thereby upon the scientific relevance of the work.*

The user journey method in my opinion a very interesting method to use in the setting of the built environment. Although I did not know this method before looking in to it, some of the interviewees were using journeys already for several purposes. ING used journeys at the beginning of their smart

tool project to identify the different functions they could implement. I think it is a very effective approach to grasp the nuances and minor annoyances of the experiences of users during their workday. Verifying the results with the interviewees after the interviews resulted in many enthusiastic reactions and recognition. I think this is a good alternative for analysing interviews and enables the researcher to present the findings in an additional way. The user journeys contain very much detailed information. By drawing this, instead of writing everything down, the information was condensed and easy to 'read'. The down side of this approach is that there is not some kind of guide to conduct a user journey. There are much differences in how to use this method and how comprehensive the method is carried out. The article of Halvorsrud et al. (2016) provided one of the few scientific approaches to this method. This article was of great value to customize the approach for the purpose of my research.

*Elaboration on the relationship between the graduation project and the wider social, professional and scientific framework, touching upon the transferability of the project results.*

Qualitative research is case specific. This does not mean you cannot learn anything from looking at other cases, this means you cannot copy the results directly. Nevertheless, I think contexts are sometimes more similar than we think. The diversities the workplace offers can be found in every office, maybe slightly different but not totally different. The analysis of the 25 smart tools provides more generalizable information but also shows the diversities in smart tool functions at organisations. A combination of qualitative and quantitative information, derived over an extended period of time would provide the most complete data set. Therefore the research of Leesman (2017a) would be interesting to add to a case. The standardized survey of Leesman can provide a pre and post implementation evaluation and is able to reflect the data to their enormous data set. Together with in-depth data derived from the journey method, this would provide an interesting and complete combination of methods.

*Discuss the ethical issues and dilemmas you may have encountered in (i) doing the research, (ii, if applicable) elaborating the design and (iii) potential applications of the results in practice.*

Although the connection to a company is very valuable for connecting to possible case studies, I am glad I did not call myself a Royal Haskoning DHV Graduate Intern. The advantages of an independent graduate student, with connections to corporate contacts through the network of Royal Haskoning DHV and the network of the smart campus tool research group, gave me the opportunity to get in touch with many different professionals.

Having a direct connection to case study organisation is preferred. In one case this direct connection was not made which resulted in difficulties for getting access to the right data. Besides that, as a researcher it is important to know you are not the top priority. Sometimes priorities of organisations shift and therefore it can be better to choose another case instead. As a graduate student, you are not top priority. This resulted that I had to change one of my cases. Luckily, the TU delft was willing to participate, which gave me a quick alternative.

Obtaining a user focus in practice is important. This user journey is getting much attention and seems to be an appropriate way to grasp the ideas of 'the user'.

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