

# 1 Reflection

In this chapter I will reflect on my personal experience conducting this research process, in particular regarding the following:

1. The steps taken and the improvements that could have been made in hindsight;
2. The scientific relevance and the validity of the results;
3. The Societal relevance;
4. The utilisation potential, especially regarding the expected relevance as stated in chapter 1
5. What advice to give students

## 1. Steps taken and improvements that could be made

Previously to this research I performed an internship at the municipality of Amsterdam, for Transform as assistant to the project coordinator as well as assistant to the Work Package 4 coordinators, who were in charge of making the Implementation Plans for all the involved European Cities of Transform. This gave me access to the different contacts in the Transform project, as well as insight information about the actual practice of Smart City implementation in Amsterdam and other cities in Europe. All these cities were supposed to be frontrunners in the field of Smart City implementation, but it showed all cities were having a lot of difficulties to actually implement Smart City projects. This, together with the many ideological Smart City events and meetings I have participated or attended, made me feel very biased towards the Smart City concept. I felt it was more about window-dressing than actually sustainable city development. Findings which were substantiated by doing pre-research and interviews on this topic. I had to make sure not to be (too) biased about the topic before starting this thesis, or at least being aware of my bias, and not to let it influence the research in a negative way. However I could not ignore the facts I faced, during this internship, which showed me the rough practice of Smart City implementation in 'the real world', and the long run of urban development projects in general. Apart from practical experience, which showed really useful, especially in such a conceptual topic as the Smart City, the internship provided me with a network of people who were very helpful in guiding my graduation. I got support from the people working at the municipality of Amsterdam, making time for discussion and giving me valuable insights as well as motivational support. I can imagine, and know from experience, this can be different in an environment other than a municipal organization, for example in a private organization. I guess it all depends on the agreement you make with your company coach from your internship or graduation company. In this case I did not combine the writing of my thesis, with the Transform project, since the Transform project finalised in June 2015.

During the initial phase of my graduation thesis, an exploration study was done towards the research on Smart City implementation. This showed to be a very broad field of research, with many insights from many different perspectives. The research resulted in an overload of information, ranging from more popular sources, to a dense academic base. Instead of trying to make sense of all models and describing all the different models available, a concise analyse should contribute to the right choice for a specific model to use as a theoretical framework. Since the different models for Smart City implementation were

very broad general frameworks, at first this resulted in choosing to test the complete general model by Chourabi et al. (2012) for Smart City initiatives in practice. I presented this at my P2 presentation, motivated with the choice to improve this model based on contributions from other research perspectives, like project management and process management, which would result in an improved model for Smart City implementation. This work was done after the P2 presentation, where I thought the research model was to be improved, so it could be used for case studies. So I developed a complete checklists of success factors and barriers for all influencing factors of Chourabi's model, also based on literature on programme and project management frameworks. However, it showed to be irrelevant, since the scope of the research was still too broad, which would lead to general findings. As I later noticed in other Smart City research outcomes, who did use this framework. Although I discussed with my mentors to converge my research after the P2 presentation, I actually started diverging again. This is something to look out for after the P2 presentation, since more questions rise to the surface. The first meeting with my mentors was scheduled about 6 weeks after this P2 presentation. In retrospect, I should have kept monitoring the progress in between to check if I was on the right path, building on the general framework.

In discussions with my two mentors and based on findings from other academic articles, the focus narrowed down to researching strictly the governance factors in Smart City implementation. As a consequence, the literature study took about an extra two month's time, since the focus shifted from a more general perspective, to a specific topic in Smart City implementation and urban development. Trying to avoid the previous mistake of describing the container concept like the Smart City, now I had to make sure not to fall for the same trap again. Thus, I described the field of governance from a more specific perspective, focusing on urban governance and especially Smart City governance. Here I had to make decisions about which interpretation to choose from. I spend too much time postponing this decision, eating into my case study research time. In hindsight, I should have been more secure about my analysis of governance, and continued on the path I was on. Actually choosing for my governance definition based on the sub processes: collaboration, participation, partnership, leadership, communication, data-exchange, service and application integration, accountability and transparency. This showed to be relevant for further case study research. In the interviews the respondents answered in similar terms, when examining the barriers and success factors of governance processes, only sometimes including policy and other barriers in their answers.

The size of this thesis is about twice the amount of pages, of which is given as a guideline at our faculty. At my 'Go-Nogo' P4 presentation, prior to the summer holiday of June 2016, this thesis was about that size: 100 pages. However, I didn't pass the presentation, since the actual case studies were only described specifically regarding the governance factors, thus not elaborating on the 'story' of both Smart City projects as described now in the five phases from the Smart City Roadmap. Elaborating on this development process from starting to monitoring and evaluating, using many detailed descriptions, is the main reason why the size of this thesis is out of proportion. Another reason behind this, is that I found it really hard to take on the advice I got from my mentor Tom Daamen, to work backwards: from my conclusions towards the introduction. I found it hard to define my conclusions, at a stage where 'the body' or story of the case had not been explained yet properly. Planning wise, it took too long to describe the details of the case, in order to draw up relevant conclusions, after which I could work my way back and separate the main from the side issues. This has been an iterative process for me, in which at times, I even had to reassess my literature study. To improve this, I should have either focused on

describing only one case, since both cases are complex in their nature, or I should have kept for example a page limit in describing the different phases, thus forcing myself to pre-select the story I want to share, and to make sure it would be in line with my conclusions. As I got as advice the weekend prior to handing in this thesis: “Cut the crap and kill your darlings”. In hindsight, I think I could have probably better stuck to describing only one case, since I think the amount of detail and context is necessary in order to understand the conclusions, and in order for practitioners to see whether the outcomes and results relate to their context or not.

## **2. Scientific relevance and validity of results**

The content of the case study research is about two European funded Smart City projects in The Netherlands, thus the outcomes of the two projects cannot be one-on-one relevant for other Dutch or European cities in becoming Smart. Both programmes are in different phases and of different types: Amsterdam being a more research and planning focused programme, and Eindhoven more of an implementation programme. Nevertheless since Transform deviated from the original objective of only describing an implementation plan, but actually tried to implement projects, both cases can be compared, as in this study.

The Transform project is already finished, making it possible to evaluate the entire process, and look back on the actually achieved results. Whilst Triangulum, on the other hand is on its way, to implementing the Smart City programme, making it harder to draw conclusions on the governance processes. This may have influenced the outcomes of the research. For example, the people in Eindhoven may have been more optimistic about the project, or less open than they should be, trying to spread a positive signal. For the people in Amsterdam, who have already finished the project in the summer of 2015, the information and their interpretation of the process could have been influenced over time. However, it seemed to me I got very honest opinions during both the interviews on the process of implementation, in which the interviewees were being quite critical towards the actual outcome or process of the projects.

It showed to be possible to involve and interview almost all the key actors in the Smart City implementation process of both cities. I did not get the chance to speak one key figure in the Transform project. This person knows all ins and outs, and is still involved in the area development process, but was not available for feedback. A risk of doing qualitative research, and in doing interviews is one in which the interpretation of information is subject to the researcher itself. A limitation to this qualitative research is that it hasn't made a quantitative interpretation of the importance of the different governance factors. Most interviewees announced this was an irrelevant or impossible task. However, it should be possible to make a governance maturity model, interpreting the different levels in governance processes by measuring the impact of each factor, based on measuring the eight governance sub-processes.

### Reflection concerning the interviews

- Warmerdam, the international coordinator of Transform, and Wenzler, consultant from Accenture, both had an international role in Transform. In these interviews it was sometimes hard to distinguish between the EU-programme level and the local Amsterdam Southeast city-project level. Thus here a possible margin of error can be taken into account, regarding the interpretation of their answers. This relates to the complexity of the project and the role of the interviewee. For example when

talking about the success of the program, how it is managed, and what the issues have been for implementation, answers might be given on a EU level, whilst I interpreted them on a local level, or vice versa.

- The time limit of an interview urges to focus on the main governance topics. That's why I have send all the interviews an overview of the governance factors including a detailed description of my definitions and research questions prior to the interviews. This way the interviewee could prepare him or herself. A risk here is that it narrows down the outcomes to only discussing the proposed factors, while actually other factors could play their part. On the other hand it also functioned as a checklist, making sure all governance factors would be touched in the conversation. By using a list of eight factors, and asking them what they find most important, without scaling them, the first three (leadership, partnership and collaboration) governance factors got the most attention. The interviewees had more distinct opinions on these factors than on the others. If the list was in a different order I would suggest the results would be the same, based on the often open questioned interviews, where I let the interviewee start off with what he or she found the most important governance factor. However, I found interviewees answering freely, and only mentioned with exception that a certain answer should be rephrased. A clear notification here is the deviation between the empirical interview outcomes and the literature review, regarding the importance of the factor data-exchange. Data showed to be fairly important for Smart City projects in literature, but it was more on the background in the interviews not being a main governance concern for most interviewees.
- What I have learned about the semi-structure method of interviewing, in which the interviewees are made aware of the main question and the specific focus points, is that it has been helpful to guide the conversation and to keep the main plot line insight. It helped as a structure for time management. Furthermore I noticed the interviewees were prepared in their answers, being able to categorise certain facts and factors, and not felt overwhelmed by the different subjects used in the interview. A negative side effect of this method could be that interviewees could prepare themselves better in order to exclude certain information, rather than being 'caught off guard'.
- I have send the results of the interviews back to my interviewees, in order for them to confirm whether I have interpreted their questions and answers in the right way. I received feedback in which mostly only minor adjustments have been made, thus excluding interpretation errors.

### **3. The Societal relevance**

The actual outcomes of this research can be used to inform other European cities, or stakeholders who want to join a partnership for a European Smart City initiative, to make sure they keep an eye on the right governance processes for successful Smart City implementation. This can inspire them in making plans and develop working procedures by showing them how to act on the different governance processes and relations and how to overcome the barriers on the road by optimising the effect of success factors mentioned in this thesis, if relevant in their specific context.

### **4. The utilisation potential**

This research only focused on two Smart City projects in the Netherlands, and especially on European funded Smart City initiatives. Therefore results are not generalizable. As context is always a very important influencing factor for Urban Development and Smart City projects, it is always difficult to generalize results. However, although the actual outcomes may not be generalizable, this research has

shown the proposed governance factors to be relevant factors to include in decision making about a Smart City initiative. All interviewees were convinced these factors were very relevant, with the main focus on collaboration, leadership, partnership, participation and transparency. The offered definitions and checklists with success factors and barriers can help them in developing dedicated governance processes and clear terminology and working agreements between the stakeholders. There is not such a thing as a spontaneous agreement on 'governance', it has to be developed time and time again dedicated to the situation.

### **5. Advice to fellow students**

- Create a clear literature framework, specify a clear research approach and set boundaries to focus the research, stick to your research questions, but be flexible enough to deal with change when your questions or theory is not compatible to your results;
- In order to create a clear literature framework, specify the main and key researchers in your specific field, and elaborate on their findings. Stay close to the core body of research regarding your topic and define up front a closing date for ending the retrieving of new information. I personally found it almost impossible to stop collecting new information, because almost every day new publications saw the light;
- Contact your study advisor if you feel blocked. Also communicate this with your mentors. They are here to help you to exellerate;
- Sign up for an internship, in relation to your graduation thesis. It showed to be very useful to be involved in the internship at Transform for the municipality of Amsterdam and Dienst Ruimtelijke Ordening. This way I got insight information and I could learn from observation, connect with relevant contacts and specialist in the field, and gather project documents. A well known risk here is to get stuck doing work for the actual project itself, instead on your thesis. Therefore you have to be transparent with your company mentor on how many days to work for them and how many days to work on the thesis. I experienced this first hand during two months in which Transform had to deliver documentation to meet a European deadlines, thus obstructing my research steps;
- Keep information properly structured and sorted. Make sure you have useable ICT and or physical infrastructure to keep articles, documents, comments, images, videos, newsletter, basically any kind of information, well organized, also make sure to make backups in the cloud in case your computer breaks down;
- Sign up for Events, meetups, and gatherings, to discuss the topics, get insight in newest developments, meet people from research and practices, join networking possibilities, see the topic from different perspectives, and motivate yourself, and convince yourself about the relevance of this topic you are dedicated to;
- Everyone is graduating in his or hers own pace, stay motivated and never give up, it can be a run with a longer distance than you planned for;
- Graduating is an individual process, try to share your experiences, and make it fun!
- Discuss your findings during the entire process with your mentors, a group of fellow students, friends, family, or experts in the field. Continuous feedback can be very helpful. But make sure to stick to your main plot line!