Value Drivers and Inhibitors in Municipal Open Government Data Ecosystems

an in-depth analysis of stakeholder perceptions on values, barriers and success factors in open government data initiatives in Dutch municipalities

Jesse Johannes Hablé

TU Delft

OPEN STATE FOUNDATION

Value Drivers and Inhibitors in Municipal Open Government Data Ecosystems

an in-depth analysis of stakeholder perceptions on values, barriers and success factors in open government data initiatives in Dutch municipalities

Master thesis submitted to Delft University of Technology in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE
in **Engineering and Policy Analysis**

Faculty of Technology, Policy and Management

by

Jesse Johannes Hablé
Student number: 4259637

To be defended in public on August 29th 2019

Graduation Committee

Chairperson	: Prof.dr.ir. M.F.W.H.A. Janssen	Section ICT
First supervisor	: Dr. A.M.G. Zuiderwijk - van Eijk	Section ICT
Second supervisor	: Dr.ir. L.M. Hermans	Section Policy Analysis
External supervisor	: T. Kunzler MA	Open State Foundation

An electronic version of this thesis is available on `https://repository.tudelft.nl/`

TU Delft
Delft University of Technology

OPEN STATE FOUNDATION
Open data for digital transparency

Acknowledgements

Amsterdam, August 15th, 2019

It is with relieve and humble pride, that I present my master thesis here. I can not believe how much time has passed since I started writing the proposal for this thesis and applying to Tom for another internship at Open State Foundation, but I almost made it. I have learned a great deal and I am proud to have been able to stay focused on one topic and complete this long quest for completing this study. The highs were awesome, the lows were dark and cruel. I have a bunch of people to thank.

First, I can not complete an internship at Open State Foundation without proper visualization author references. With regards to the front-page: city skyline icon used under CC licence by Natasha Sinegina and diamant icon made by Freepik from www.flaticon.com. I have made research visualizations made using draw.io, which I highly recommend to everyone in the TPM-faculty.

Secondly, I would like to express gratitude to all interviewees for their time, openness and honesty. Special gratitude to Groenlinks councilman of the municipality of Stichtse Vecht as well, for opening the backdoor of the municipal organization in order for me to gather my data. Also thanks to the experts attending the open government seminar at USBO in Utrecht that were willing to fill in the survey.

Thirdly, gratitude is expressed regarding the TU supervision. Marijn, for preparing me back in January for my thesis and encouraging me to be bold and claim scientific insights. Leon, for a critical stance on methodology in the thesis and providing detailed feedback on ensuring a consistent story-line. Special mentions to Anneke, I am truly grateful for your supervision. I was lucky to have a true expert on the topic to have substantive discussions with, while on the same time I was continuously challenged and encouraged by you as a coach that stimulated me with a comforting combination of appreciation and critical and detailed feedback.

Fourthly, to all coworkers and fellow interns at Open State Foundation, I am glad that you wanted me back for this research. Open State Foundation is an extremely important organization in value creation mechanisms regarding OGD. I have enjoyed working at the office and we will definitely not be strangers. Thanks to everyone for offering their help when needed and providing me with the network that I used to conduct case studies. Tom, special thanks to you for offering a critical 'real-life' perspective on my research to make sure that my work has contributed to the work of OSF and other open data catalysts.

Lastly, I conclude the acknowledgements with some to my loved ones. My dear friend Elias, from day 1 of EPA we were in this thing together. I think spending thousands of euros on snobby coffees at Lebkov and heading to faculty together after - on the days I did not oversleep - have got us through. Zen, thanks for rephrasing poor English sentences. And to everyone else, I know that my company in times of stress has not been the most pleasant, thanks for the tolerance and the encouraging love.

Executive Summary

Research context

Open government data (OGD) publication and use is an important feature of an open government. However, In Dutch municipalities, the presumed created value from municipal OGD fails to live up to its potential, despite various OGD initiatives. Furthermore, there is a lack of knowledge about how value creating mechanisms work and how they can be stimulated in municipal contexts.

The objective of this study is therefore to identify value drivers and inhibitors in municipal open government data ecosystems. In order to do so, an in-depth analysis is conducted into the stakeholder perceptions regarding values, barriers and success factors related to these systems.

Research approach

In order to find an answer to the central research question *how can the creation of value in municipal open government data ecosystems be facilitated?* the ecosystem is approached using actor and strategy models (ASM). This methodology allows in-depth analyses of the stakeholder perceptions throughout the entire ecosystem, and in doing so opens up what is known in ASM as "the actor dimension" in policy making. By applying the ASM method to open government data ecosystems, this thesis argues for a re-evaluation of the actor dimension in policy making decisions. Furthermore, this thesis seeks to contribute to current OGD theorizations by showing how an in-depth analysis of stakeholder perceptions throughout open data ecosystems not only strengthens policy making decisions down the line, but also expands various forms of value creation through OGD publication and usage.

Findings

The research question is divided into four sub-questions. The first question is: *what does the municipal OGD ecosystem look like?* Using a systematic literature review a conceptual model is developed of a municipal open government data ecosystem, portrayed as an actor arena, which is central in an ASM-approach. The ASM-approach allows an assessment of social/political, operational/tactical, and economic value creation. The actors in this model are municipalities, infomediaries, and citizens, who interact by performing tasks, which leads to value creation. Value creation is thus not inherent in specific groups of actors, but created in interactions and dispersed outside the OGD ecosystem itself throughout society. Furthermore, a distinction is made between active and passive interaction executed by citizens. This allows identification of four ecosystem categories: in the administrative domain (1) citizen informing and (2) citizen sourcing; and in the political domain (3) transparency/accountability and (4) collaborative democracy. Lastly, an overview of seven categories of barriers and success factors is presented.

This conceptual model was evaluated in an expert review, which led to the second sub-question: *to what extent is the conceptual model of the municipal OGD ecosystem accurate, insightful and useful?*. The conceptual model was perceived as too data-central, which led to the addition of a societal incentive in the ecosystem as a starting point. Secondly, the distinction between active and passive citizens tasks was perceived as novel insight, which underscored the importance of this viewpoint. Thirdly, the policy context was lacking in the experts' view, hence it was taken into account by the identified success factors, which included policies.

Subsequently, the conceptual model was examined empirically in two case studies concerning a citizen informing OGD initiative and a citizen sourcing OGD initiative. Stakeholder perceptions of infomediaries, municipalities

and citizens were measured in order to answer the third sub-question: *what are stakeholder perceptions on values, barriers and success factors of data initiatives in municipal OGD ecosystems?* This led to several insights.

1.Stakeholders tend to perceive social/political and operational/tactical value of municipalities partaking in OGD initiatives more than economic value. In open government data initiatives for administrative purposes that consist of active citizen interaction mechanisms, additional value is created. This is the case because this research has shown that in such initiatives citizen sourcing benefits account for additional operational/tactical value and responsive governance benefits account for additional social/political value.

2. Infomediaries that were categorized as typical technical initiators of OGD initiatives tend to seek institutional support from municipalities or supra-municipal governmental organizations to implement OGD initiatives. Infomediary initiation is effective to ensure a societal incentive for these initiatives.

3. Municipal motives for participating in initiatives were assessed. Whereas some municipalities enthusiastically participate, others are less willing to do so when OGD initiatives do not fit their perceived institutional contexts. This is especially the case if cross-municipal data-standards are embedded in municipal procedures that do not add value for that municipality. Sometimes municipalities expect infomediaries to generate data technically and are therefore, sometimes municipalities are less dedicated to perform their ecosystem tasks.

4. This research has shown that citizens need to be made aware of their interests in open government data initiatives, and actively encouraged in order for value to be created.

The results of the three analyses (literature, expert review, and case studies) insist on a revision of the conceptual model of the municipal ecosystem and generate answers to a fourth sub-question: *what factors need to be incorporated in the model in order to increase the creation of value?* Four value drivers have therefore been added: (1) institutional support for infomediary initiation, (2) technical support for implementation, (3) reaching out to citizens by engaging re-use platforms, and (4) mobilization of citizens by user-friendliness in OGD applications. Policy recommendations have been formulated to infomediaries, municipalities, and supra-municipal governmental organizations related to coordination and encouragement of value creation in OGD initiatives.

Scientific contributions

This study contributes to the open government data literature by identifying factors that stimulate value creation in the municipal OGD ecosystem (value drivers) and factors that reduce value generation in this ecosystem (value inhibitors). In contrast to many studies throughout open data literature, this study obtained in-depth insight into the actor dimension underlying municipal OGD ecosystem interactions and revealed some of the structuring mechanisms that influence OGD value creation. Moreover, tasks related to value creation in citizen centered open government data initiatives have not only been made explicit but are specifically attributed to various stakeholders. This study is among the first to apply an ASM approach to open data research, and its findings suggest ASM can be a fruitful method for analyzing open data ecosystems.

Societal contributions

Value creation in municipal OGD ecosystems should be encouraged by considering the suggested policy recommendations for infomediaries, municipalities and supra-municipal governmental organizations. Additionally, the conceptual model of municipal OGD ecosystems developed in this thesis can potentially be used in order to design more valuable OGD initiatives.

Future research

In future research, additional case studies of OGD initiatives are advised to use an ASM-approach in order to better take stakeholder perceptions into account. Future research should also consider examining OGD initiatives with a more economic focus, as well as those initiated by other categories of infomediaries such as media organizations or academic institutions. Lastly, citizen perspectives could be further evaluated using surveys and this aggregated citizen perspective could then be integrated into the ASM-model.

Contents

List of Figures

List of Tables

Acronyms

ASM Actor and Strategy Modeling.

BAG Registration standard Addresses and Buildings, *Basisregistratie Adressen en Gebouwen*.

BZK Ministry of the Interior and Kingdom Affairs, *Ministerie van Binnenlandse Zaken en Koninkrijksrelaties*.

CBS Central Bureau of Statistics, *Centraal Bureau voor de Statistiek*.

CCM Comparative Cognitive Mapping.

CSV Comma Seperate Values.

EP19 European Parliament elections 2019, *Europese Parlementsverkiezingen 2019*.

GR18 Dutch local elections 2018, *Gemeenteraadsverkiezingen 2018*.

OGD Open Government Data.

OSF Open State Foundation.

PS19 Dutch regional elections 2019, *Provinciale Staten- en Waterschapsverkiezingen 2019*.

PZH Province of South Holland, *Provincie Zuid-Holland*.

SLIM Smart Notification, *SLIM Melden*.

TK17 Dutch national elections, *Tweede Kamerverkiezingen 2017*.

VNG Union of Dutch municipalities, *Vereniging van Nederlandse Gemeenten*.

WIMS Where is my polling station?, *Waar is mijn stemlokaal?*.

Wob Law transparent governance, *Wet openbaarheid bestuur*.

Woo Law open government, *Wet open overheid*.

Chapter 1

Introduction

In this introductory chapter, the research topic and scope is presented. First, a brief overview of the context is given in section 1.1, that results in a problem statement consisting of a policy problem and a scientific knowledge gap in section 1.2. The corresponding research objective and approach is given in section 1.3, which results in research questions and methodologies in section 1.4. In section 1.5, the societal and scientific relevance of the research is given. Lastly, section 1.6 presents the outline of this thesis.

1.1 Context

1.1.1 Open government data adoption in the Netherlands

Nowadays, the publication of Open Government Data (OGD), defined as data produced and/or funded by governments, to the public is activated worldwide in guidelines like the PSI Directive in the European Union and the Open Government Directive in the United States. Central governments translate these top-down directives into strategies to enable data publication for local government levels. In the Netherlands, the Law transparent governance, *Wet openbaarheid bestuur* (Wob) has been established, which obligates local governments to provide information on government proceedings. Currently, the law is under consideration for replacement by the Law open government, *Wet open overheid* (Woo), widening the concept of open government into the proactive release of information rather than reactive release, which is the dominant practice under the Wob. In this way, the Dutch government is aiming to encourage more, complete and accurate municipal data-sets.

The publication of OGD enables benefits including transparency, innovation and operational efficiency for governments (Jetzek, Avital, & Bjorn-Andersen, 2013). Together these benefits account for the value creation out of OGD. Activities concerning value creation out of OGD defined in the PSI directive are data generation, data collection, aggregation, processing & data distribution, delivery and final data use (Ubaldi, 2013). This implies that OGD should not only be published but governments should take action promoting the use of data as well. Only when data publication and use are aligned, can presumed benefits live up to their potentials. This logic is part of the doctrine of open government or e-government, which in its simplest form means that people have the right to access proceedings of policies and OGD (Lathrop & Ruma, 2010, p.xix), which carries the potential to strengthen both the economy and democracy. However, this is dependent on use and publication practices. In the last years, open government data research has therefore often focused on the alignment of data publication and use.

1.1.2 Value creation from the alignment of data use and publication in OGD ecosystems

To achieve the presumed benefits of an open government, scholars agree that a huge challenge lies in ensuring that when the data is published in the right format, time and place, the data actually will be used (Conradie & Choenni, 2014; Lee & Kwak, 2012; Zuiderwijk & Janssen, 2014). Means of assuring that publication and use of data is triggered by a societal incentive are open data initiatives in the so called OGD ecosystem (Zuiderwijk & Janssen, 2014; Reggi & Dawes, 2016). An ecosystem must consist of stakeholders and tasks related from

production to use and pathways integrating the elements as a whole (Zuiderwijk, Janssen, & Davis, 2014). This approach matured from data-, program-, user- and impact-oriented approaches and applying a holistic view on value from OGD (Reggi & Dawes, 2016; Dawes, Vidiasova, & Parkhimovich, 2016).

This logic implies that in a municipal OGD ecosystem value is created as data is published by municipalities and used by citizens. This interaction is mediated by data-specialists. In the literature, these data-specialists are referred to as *infomediaries* (Johnson & Greene, 2017; Mayer-Schönberger & Zappia, 2011; Reggi & Dawes, 2016), that typically possess capabilities to contextualize data in a way that it is made tangible for citizens. After infomediaries and citizens have done some processing or examination of the data, value is created. An initial conceptual model of what a municipal ecosystem would look like is given in figure 1.1.

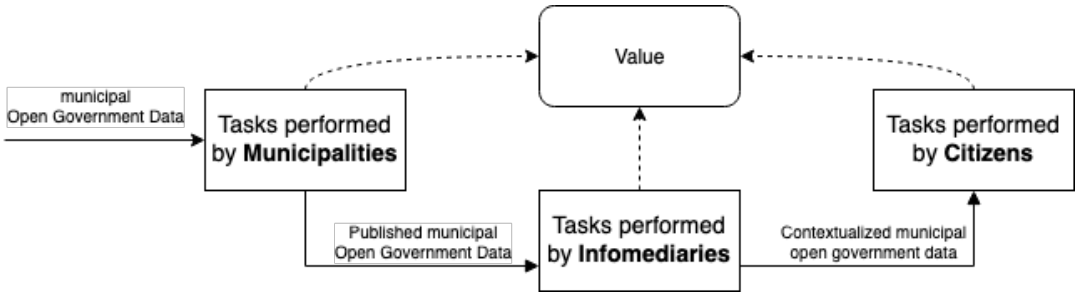


Figure 1.1: An OGD ecosystem with values and stakeholder tasks concern data generation, data collection, aggregation, processing and data distribution, delivery and final data use

1.2 Problem statement

In this section the problem statement is given. First, the problem of municipal open government data publication not living up to its potential is explained. Then, the main scientific knowledge gap is discussed.

1.2.1 Limited publication of municipal open government data

OGD produced and or funded by governments on the local government level is defined as municipal OGD. Some municipal OGD are gathered centrally and released on national platforms, such as financial data disclosed to the Central Bureau of Statistics, *Centraal Bureau voor de Statistiek* (CBS). In these top-down procedures typically numerical, manageable data are gathered that are of considerable societal value. In such procedures, municipalities are obliged to provide data to centralized institutions that manage standardized data publication. This allows users and re-users of these data to retrieve municipal data easily and make comparative analyses. However, the pluriformity of Dutch municipalities makes centralized release unmanageable for all kinds of data (Conradie & Choenni, 2014). Therefore, many data are expected to be published by municipalities themselves, as stated by the responsible Dutch minister Ollongren (2019) of the Ministry of the Interior and Kingdom Affairs, *Ministerie van Binnenlandse Zaken en Koninkrijksrelaties* (BZK).

In an individualistic society like the Netherlands, a high impetus publishing and using data is observed (Saxena, 2018). Wijnhoven, Ehrenhard, and Kuhn (2015) showed that motivational factors for citizens to participate are pro-social behaviour, pastime, career, change, aims, learning, reciprocity, reputation, fun, ideology and money. This implies that Dutch data publishers are not so much unwilling to release data, but the complexity of governmental actors and structures hamper data release. Conradie and Choenni (2014) highlight that especially within local governments, barriers arise. Data policies are relatively new and the pluriformity of actors makes it hard to determine standards. Municipalities often have different procedures regarding publishing data and although standardization processes between municipalities occur, the diversity of the 355 (as of 2019) Dutch municipalities will always be a factor complicating uniform OGD release. The group of users is diverse and its diverse needs and capabilities make it difficult to design general policies (Reggi & Dawes, 2016; Dawes & Helbig, 2010).

For some of these, municipality owned data, a High Value Data list has been established, concerning the essential data to be published by municipalities. It has been developed by the Union of Dutch municipalities, *Vereniging van Nederlandse Gemeenten* (VNG) in collaboration with BZK. It consists of twenty-six data-sets

that are considered of high value and are encouraged to be properly and proactively published by municipalities. Examples of data-sets that are part of the High Value Data list are transcripts of local council meetings and information on waste collection. There is a monitor on the performance of municipalities established by specialist open (government) data organizations, like Open State Foundation (OSF) and Civity. This shows that as of January 2019, in a sample of 50 municipalities the majority of these data-sets are not correctly published to allow users to create value (Kunzler, 2016).

1.2.2 Scientific knowledge gap

Despite the seemingly simple logic of the figure 1.1, municipal data publication is still poor. In recent years, an increasing amount of research into data ecosystems has shifted approaches and opened up possibilities. The concept of data ecosystems has been highly influenced by Dawes and Helbig (2010). In Reggi and Dawes (2016) and Dawes et al. (2016), expansion of concepts that should be part of ecosystems are further developed. However, the ecosystems described remain rather abstract and do not dive into specific actors and tasks associated in municipal ecosystems. On the contrary, Zuiderwijk et al. (2014) have defined a wide range of specific tasks related to data publication and use as essential elements of ecosystems. However, the tasks are not clearly attributed to ecosystem stakeholders and the research has not focused on municipal contexts. Furthermore, open data users are considered to be data specialists. However, the question then arises what roles non-data specialit citizens might have to gain from open government data publication.

There has been considerable research on open government data in the municipal context as well, such as Zuiderwijk, Volten, Kroesen, and Gill (2018). Their findings show that municipality size does not seem to affect tendency for open data adoption. Furthermore, other studies have explored barriers and success factors in open governments data initiatives (Shepherd et al., 2019; Parycek, Hochtl, & Ginner, 2014; Susha, Zuiderwijk, Charalabidis, Parycek, & Janssen, 2015). However, detailed research on value creation in municipal data ecosystems in Dutch contexts is still lacking. The findings in an extensive review of open government data research are in correspondence with this notion (Safarov, Meijer, & Grimmelikhuijsen, 2017). According to them, the causal relationship between type of user and public value being created remains unclear and is poorly researched. Therefore, they encourage research exploring detailed processes of value creation.

Thus, there is a lack of understanding of the value creating mechanisms in ecosystems in municipal contexts. Furthermore, it remains unclear why the expectations regarding value from the publication and use of OGD are disappointing.

1.3 Research objective and approach

The research objective that results from the identified scientific knowledge gaps is to identify value drivers and inhibitors in municipal open government data ecosystems. In order to do so, an in-depth analysis is conducted into the stakeholder perceptions regarding values, barriers and success factors in data ecosystems. This analysis allows an opening of the black box of implementation failures of open government data initiatives in municipalities. It has become evident that successful value creation in a municipal OGD ecosystem is a team effort in which a variety of actors combine their capabilities. Subsequently, the governance enabling it should be shaped by assessing the needs of those actors. Therefore, a great deal can be be gained by evaluating how the interaction of various entities in the ecosystem has enabled or inhibited value creation in municipal OGD initiatives. Therefore, an approach that takes these factors into account is necessary. Such an approach is found in Actor and Strategy Modeling (ASM), which lends itself to examining the functioning of the ecosystem in greater detail on the stakeholder level.

Actors and Strategy Modeling Approach

ASM is an emerging field of research that focuses on the multi-actor component of decision making. This approach has its grounds in the methodologies as described by Hermans and Cunningham (2018). In ASM, an actor arena consists of actors, relations and rules and the actor dimension in the arena consists of values, resources and perceptions (Hermans & Cunningham, 2018). Applying ASM can provide insights in how to establish the relations and rules in the arena, by exploring the values, resources and perceptions of the stakeholders. In other words, it helps governments, in this case Dutch municipalities, to manage their actor environment and increase

the understanding of the actor dimension in policy making (Hermans & Cunningham, 2013). The numerous tools and techniques associated with this approach offer a lens to reveal how actor behaviour has influenced the policy emergence. As an ASM-approach is innovative in the research field of municipal OGD release, it allows an examination of the processes of multi-actor policy making on a detailed level. Hence, such an approach is in correspondence with the research objective and it may add to the knowledge on how to shape municipal OGD policies.

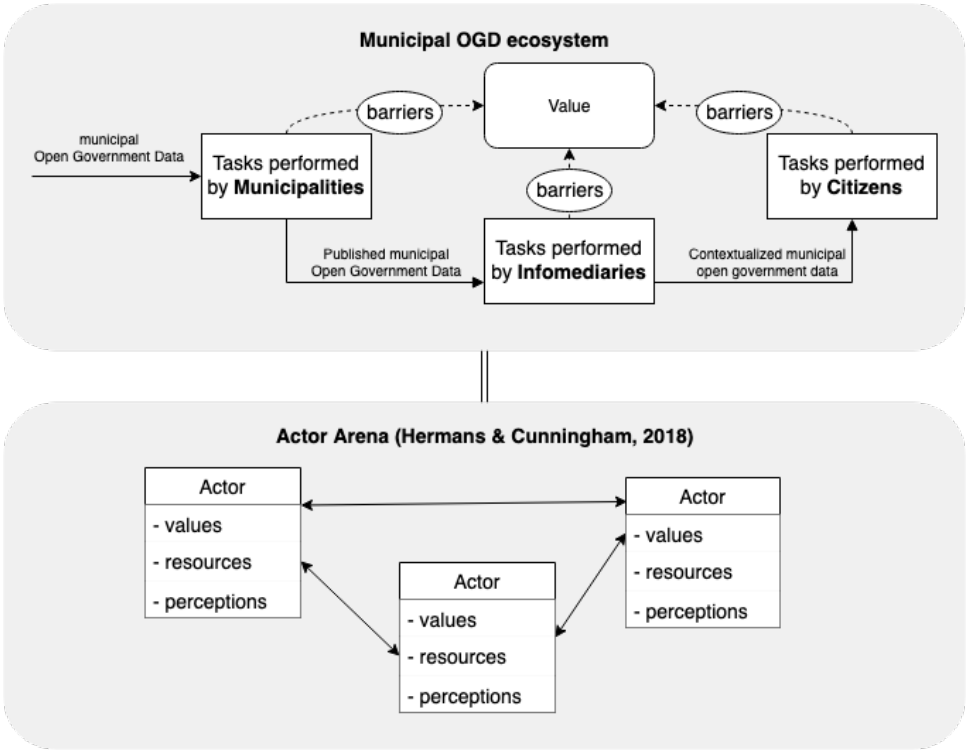


Figure 1.2: Scope of the research; the municipal open government data ecosystem is assessed as an actor arena, central in an ASM-approach

In figure 1.2 the scope of the research is given by showing the municipal ecosystem in relation to ASM-theory. Presumed **value** and **barriers** for OGD publication and use shape the *value*-dimension for actors. Stakeholder **tasks** concerning OGD publication and use may reveal what actors and actor interactions *resources* are needed in an ecosystem in order for value to be created. The third dimension, *perceptions*, implies that besides values and resources, the perceptions of stakeholders significantly shape the functioning of the actor arena in the OGD ecosystem. The focus of this research is therefore on this perception dilemma as an explanation of actor behaviour in OGD ecosystems.

Measuring actor perception in ASM may be done using perception graphs (Bots, 2007). This technique consists of designing maps of the different perceptions of stakeholders, using resources, goals, system-, and context factors. A systematic comparison of these perceptions can be done using Comparative Cognitive Mapping (CCM). On measuring perceptions in methodologies like CCM, Hermans and Cunningham (2018, p.248) write the following: *"Understanding how the different actors involved perceive these issues helps to understand their (in)action and to make informed assumptions about their future actions."* The procedure aims to make explicit representation of perceptions of stakeholders in order to analyze it structurally. Elements of comparative cognitive mapping are therefore used in this research to evaluate the perceptions of ecosystem stakeholders.

1.4 Research questions and design

From this research objective and approach, a central research question follows:

"How can the creation of value in municipal open government data

ecosystems be facilitated?"

The central research question is subdivided in four subsequent analyses, with corresponding sub-questions. First, a conceptual model of an open government data ecosystem in the municipal context is created using existing open government data literature. The conceptual model is evaluated in an expert panel. Next, the conceptual model is empirically substantiated by evaluating stakeholder perceptions in two case studies. Finally, the model is revised and policy recommendations are formulated. The flow of the research is visualized in figure 1.3. Below, the sub-questions are given using the different methodologies used. The exact research strategies per research phase are highlighted in the corresponding chapters.

1. What does the municipal OGD ecosystem look like?

Methodology	: Systematic literature review
Data-gathering	: Online desk research
Thesis chapter	: Chapter 2: "A conceptual model for a municipal OGD ecosystem"

In this first phase, a systematic literature review is conducted on open government data research. Literature from the past allows a conceptualization of dimensions of an OGD ecosystem as an actor arena as shown in figure 1.2. The elements are threefold: value, stakeholders and tasks. This allows to make a conceptual model from theory on how the municipal ecosystem looks like.

2. To what extent is the conceptual model of the municipal OGD ecosystem accurate, insightful and useful?

Methodology	: Expert review
Data-gathering	: Focus group
Thesis chapter	: Chapter 3: "Expert review of conceptual model of ecosystem"

In the second phase of the research, the conceptual model of the municipal open government data ecosystem is evaluated in an expert review. The dimensions of evaluation consisted of accuracy of the model, whether the model had provided valuable insights and whether it is useful for professional research and policy making purposes.

3. What are stakeholder perceptions on values, barriers and success factors of data initiatives in municipal OGD ecosystems?

Methodology	: Case study research
Data-gathering	: Interviews, document-analysis
Thesis chapter	: Chapter 4: "Value drivers and inhibitors in municipal OGD initiatives"

In the third phase of the research two cases of open government data initiatives in municipal OGD ecosystems are explored. In this phase, the perceptions of stakeholders regarding values, barriers as value inhibitors and success factors as value drivers are assessed and compared. The conceptual model is refined into an empirically substantiated model.

4. What factors need to be incorporated in the model in order to increase the creation of value?

In the fourth phase of the research, the conceptual model is expanded using the insights from the expert review and the case studies. Furthermore, by assessing the extra factors that need to be incorporated in the conceptual model, policy recommendations for municipalities, infomediaries and supra-municipal governmental organizations are formulated.

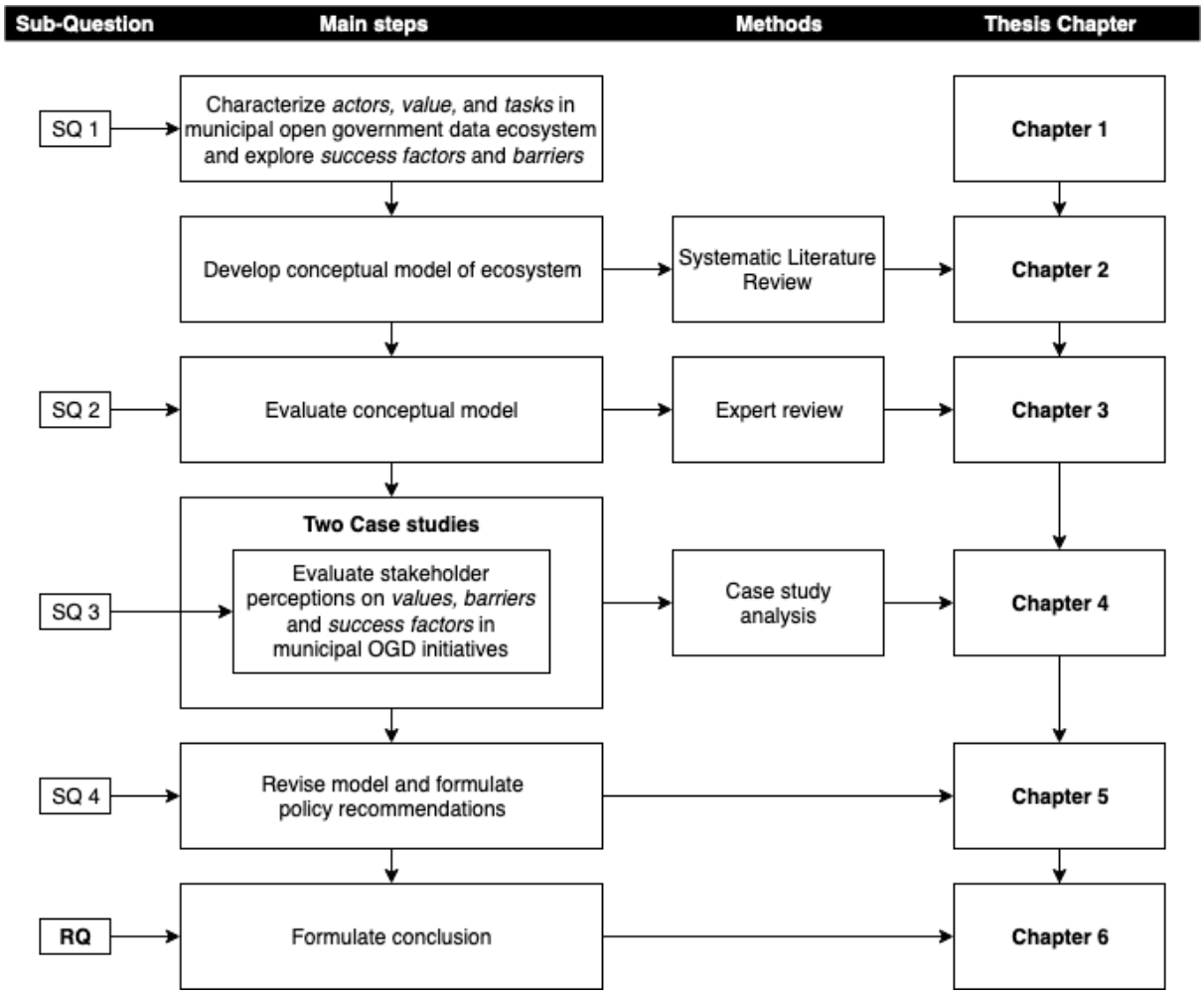


Figure 1.3: Overview of the research in research flow diagram

1.5 Contributions of this research

The contributions of this research are twofold. First, as explained in section 1.2.2 important additions to existing open government data research are made. Factors are identified that stimulate value creation in the municipal OGD ecosystem (value drivers) and factors that reduce value generation in the municipal OGD ecosystem (value inhibitors). In contrast to many studies in the open data literature, we obtained in-depth insight into the municipal OGD ecosystem and revealed the underlying mechanisms influencing OGD value creation. Researching the municipal open government data ecosystem using an ASM approach constitutes a novel method in open government data research, and proved especially suited for analyzing stakeholder dimensions in value creation processes.

Secondly, by developing a conceptual model policy makers are equipped with a tool to evaluate stakeholder integration in open government data ecosystems. These elements offer insights in the potential of open government initiatives and assist the designers and initiators of OGD initiatives. By including the perception of non-data specialist citizens, the insights of the research help to shape open government data ecosystems around widely relevant societal incentives.

1.6 Outline of the report

The rest of this thesis is structured as portrayed in figure 1.3. In chapter A the development of the conceptual model is given by the systematic literature review. In chapter 3, the results of the expert review of the conceptual model are given. In the 4^{th} chapter, the case studies are described. In chapter 5, the results are synthesized into a

revised conceptual model, identification of four essential value drivers and formulation of policy recommendations. Lastly,chapter 6 concludes and reflects upon this research.

Chapter 2

A conceptual model for a municipal OGD ecosystem

2.1 Introduction

From the identified knowledge gap and the research approach to find an answer to the research question, in this chapter the first sub-question is addressed: *what does the municipal OGD ecosystem look like?*. A systematic literature review has been conducted to answer this question. The main goal of this phase of the research was to conceptualize the relations between entities (governments, infomediaries, citizens), their activities and value derived from adequately published municipal data. In this way the ecosystem parts of the actor arena consisting of actors with values and resources are examined. Secondly, the relationship between the three as established in possible designs of the ecosystem are examined. We adopt the term *ecosystem citizen interaction designs*, which is defined as how interaction is established between the entities in the ecosystem to collaboratively synchronize the tasks in order to create value. Thirdly, to investigate blockers and enablers of the functioning of the flow of data and value, a preliminary scan of barriers and successes for data release is made.

2.2 Systematic literature review approach

For reviewing the literature systematically the input of methodologies as described by Kitchenham et al. (2009), Levy and Ellis (2006) and Webster and Watson (2002) were used. The goal of the systematic literature review was to evaluate specific identified concepts relevant to the municipal open government ecosystem in order to develop a model of a municipal ecosystem how it ideally should play out. This methodology already has a narrow focus and therefore a slightly adjusted procedure has been conducted concerning the following steps:

1. **Define literature search questions and keywords**. A first step in conducting a systematic literature review is to define questions that shall be answered while searching for literature (Kitchenham et al., 2009). Initial keywords that were used were *Open data*, *Open government data*, *e-government* and the combination of those with *ecosystem*. Per aspect additional keywords were used and scoping happened by adding keywords associated with municipality *local, municipal*. Below the list of five questions and the additional keywords used to search are given.

   (a) What value is derived from Open Government Data?
   Keywords: *benefits, value AND Open Government Data*

   (b) What activities are associated with the Open Government Data Ecosystem?
   Keywords: *tasks, activities, elements, AND Open Government Data*

   (c) What entities does the Open Government Data Ecosystem contain in the municipal context?
   Keywords: *entities, stakeholders, users AND Open Government Data*

   (d) What purposes do active and passive citizen interaction have in the ecosystem?
   Keywords: *interaction, feedback, responsive AND Open Government Data*

(e) What possible barriers and success factors hamper or stimulate value creation in the ecosystem? Keywords: *risks, barriers, success factors AND Open Government Data*

2. **Quality assessment / selection criteria**. The quality assessment of articles is a never-ending process and could be very extensive. In some procedures, this step involves setting up a research-specific set of criteria and score card of these criteria to evaluate what kind of literature is relevant. Yet such a procedure is particularly important when the scope of the literature review is big and there has been a lot of research already. In this case, the topic is relatively new (since approximately 2010) and the scope is specific. Therefore, the quality assessment was limited to review the journals and conferences of publication and to formulate some selection and exclusion criteria, two crucial steps in the procedure of (Kitchenham et al., 2009). The following selection criteria were used to select papers:

   - The articles were published in a scientific journal or at a scientific congress.
   - All articles were peer-reviewed

   The following exclusion criteria were used to leave out articles.

   - In the case of no scientific methodology more then unsystematic literature consultation (Gurstein, 2011).
   - In the case of a report of an non-independent organization (Ubaldi, 2013).
   - In the situation of a case study being on geographically to high level (for instance supra-national) Mayer-Schönberger and Zappia (2011).
   - Articles that were classified as outdated (before 2012) if there was relevant followup literature of similar author(s) (Dawes & Helbig, 2010)
   - Articles that used descriptive schemes rather then overviews(Krishnamurthy & Awazu, 2016; Saxena, 2018).

3. **Process the literature by defining relevant concepts as found in the literature related to the questions.** For this step the step of 'apply the literature' by (Levy & Ellis, 2006). An application-level mastery table was made. This is a table of articles in rows of the table and the concepts as described in the research questions for literature review in the columns. By scanning the articles on the concepts, relevant insightful contributions of the article to a concept could be verified. Only those contributions were adopted that added extraordinary insight to the concepts.
4. **Identify relevant concepts and meanings per literature search question.** Using the application-level mastery, the concepts could be synthesized using the insights of the articles. A synthesis per concept was made.

In searching literature, next to the procedure as described above, snowballing was used to find additional literature. Snowballing refers to "using the reference list of a paper or the citations to the paper to identify additional papers" (Wohlin, 2014, p.1). In its article guidelines are given using snowballing as an addition to the procedure of Kitchenham et al. (2009). Snowballing is an effective addition to systematic literature review in finding relevant articles (Jalali & Wohlin, 2012).

2.3 Literature review on aspects of the municipal OGD ecosystem

The literature search was conducted between 2019/03/21 and 2019/04/02. Articles published after are therefore not included. The search engines used were Web of Science, Scopus and Google Scholar. The combinations of keywords yielded relevant literature and showed that Open Government Data was a relatively new field of research (from 5 articles in 2010 gradually increasing to 120 in 2018, in Scopus). Also the ecosystem approach was a newly-emerging field, since published articles on the topics were higher in the last decennial. To scope searches, sometimes the keywords *municipal, local* were added. Even though the focus in this research is on local governments, literature that did not had an explicit focus on local or municipality release was not excluded, to not leave out influential literature on OGD release in non-local specific contexts. However, the consideration

of an article focusing on local governance was explicitly influential in characterizing and analyzing the article. Especially barriers and success factors were assessed specifically for local governments. While analyzing the literature, relevant additional literature was found using snowballing as well. The literature review and selection and exclusion criteria yielded a selection of 25 articles to be analyzed. To evaluate the quality, an overview of the sources of the articles is given in table 2.1.

Table 2.1: Scientific sources of studies selected in the systematic literature review

Source	**# Articles**
Scientific Journals	*22*
Government Information Quarterly	9
Information Systems Frontiers	1
Information Polity	2
Information Systems Management	1
International review of administrative sciences	1
JeDEM-eJournal of eDemocracy and Open Government	2
Journal of Organizational Computing and Electronic Commerce	1
Journal of the Urban & Regional Information Systems Association	1
Journal of Theoretical and Applied Electronic Commerce Research	1
Records Management Journal	1
Review of Policy Research	1
Social Science Computer Review	1
Scientific Conferences	*3*
International Conference on Electronic Government and the Information Systems Perspective	1
International Conference on Information Systems	1
International Conference on System Science	1
Grand Total	*25*

Government Information Quarterly is a highly influential journal, because it yielded special information for Open Government Data specifically. Ecosystem approach is a field of research of open data in general, sometimes specified to Open Government Data. OGD and open data in essence is different, but sometimes the distinction is not specifically made. Open data literature did yield useful insights on topics like information systems and electronic commerce. Literature on these topics was often published in different journals or conferences. With regards to research topics, goals and methodologies, more information is given in table. Workshops, interviews, surveys, focus groups and case studies dominated the methodologies. This highlights the socio-technical character of the topic and how it is a new emerging research field where the scientific community is assessing policy implementation of how to implement open government data based governance.

Table 2.2: Analysis of studies and information extraction on focus areas

	Reference	focus on local government	Benefits	Barriers	Entities	Activities	Interaction	Implementation
1	Alexopoulos, Loukis, and Charalabidis (2014)	low				X	X	
2	Attard, Orlandi, Scerri, and Auer (2015)	low	X			X		X
3	Charalabidis, Loukis, and Alexopoulos (2014)	low					X	
4	Conradie and Choenni (2014)	high		X				
5	Dawes, Vidiasova, and Parkhimovich (2016)	high			X			X
6	Gascó-Hernández, Martin, Reggi, Pyo, and Luna-Reyes (2018)	low		X	X			
7	Janssen and Zuiderwijk (2014)	low					X	
8	Janssen, Charalabidis, and Zuiderwijk (2012)	low	X	X				
9	Jetzek, Avital, and Bjorn-Andersen (2013)	low	X					
10	Johnson and Greene (2017)	high			X			
11	Johnson and Robinson (2014)	low					X	
12	Lee and Kwak (2012)	low					X	
13	Meijer, Curtin, and Hillebrandt (2012)	low					X	
14	Parycek, Hochtl, and Ginner (2014)	high	X					X
15	Pereira, Macadar, Luciano, and Testa (2017)	high	X					
16	Reggi and Dawes (2016)	low					X	X
17	Safarov, Meijer, and Grimmelikhuijsen (2017)	low	X	X	X		X	
18	Shepherd et al. (2019)	high		X				X
19	Sieber and Johnson (2015)	low					X	
20	Susha, Zuiderwijk, Charalabidis, Parycek, and Janssen (2015)	high		X				X
21	Vetrò et al. (2016)	low		X		X		
22	Wijnhoven, Ehrenhard, and Kuhn (2015)	medium			X		X	
23	Zuiderwijk and Janssen (2014)	low						X
24	Zuiderwijk, Janssen, and Davis (2014)	low				X		
25	Zuiderwijk, Janssen, and Susha (2016)	low		X		X	X	

In an analysis of the articles, the contents were evaluated for terms of the ecosystem to be researched. In table 2.2 the selected articles can be viewed concerning aspects where the articles added value to. Even though a lot of articles covered multiple aspects, only those aspects were chosen where the article provided exceptional insight over general insight. In this way, reinventing the wheel is refrained from, and still a wide coverage of influential literature was achieved. Additional information on the selected articles can be found in table A.1 in appendix A. Some other first insights from analyzing the literature were:

- There were some studies that took a holistic approach on the implementation process of open government data. The implementation processes did not add to exceptional insights of a separate concept to consider, but did contextualize the relationship between them (Susha et al., 2015; Parycek et al., 2014; Zuiderwijk & Janssen, 2014).
- Generally, success factors was a good term to use as an additional term to assess benefits and barriers. Success factors were useful to bridge benefits and barriers.
- There were some articles that focused explicitly on local governments, making them highly relevant for the analysis. The geographical span was wide (Brazil, United Kingdom, Austria) (Parycek et al., 2014; Pereira et al., 2017; Shepherd et al., 2019) and few focused on Dutch municipalities, therefore true caution had to be brought to translating them to the Dutch cultural and organizational context. However, these articles provided information on barriers for administrators that have limited knowledge or resources.

In the next three paragraphs of this section, the literature is synchronized into separate aspects to be considered, each answering the first three search questions, respectively. The answers to these search questions provide the tools to develop a conceptual model of a well functioning municipal OGD ecosystem in the next section. Thereafter, the last two search questions of actor interaction schemes and barriers will be addressed in two separate paragraphs of that section.

2.3.1 Value of a well functioning OGD ecosystem

Table 2.3: Literature review on value of OGD

Janssen, Charalabidis, and Zuiderwijk (2012)	**(I) social/political**	**(II) economic**	**(III) operational/ technical**
Jetzek, Avital, and Bjorn-Andersen (2013)	improving government transparency, private participation and collaboration	stimulating private sector innovation	gaining government efficiency
Parycek, Hochtl, and Ginner (2014)	societal	economic	organizational/ internal
Attard, Orlandi, Scerri, and Auer (2015)	transparency	releasing social and commercial value	participatory governance
Safarov, Meijer, and Grimmelikhuijsen (2017)	societal	economic	good governance
Pereira, Macadar, Luciano, and Testa (2017)	transparency, participation, impact measurement policies	innovation, new knowledge	government efficiency and effectiveness

In the literature the terms benefits and value of OGD release offer insight on why municipalities should open their data in the first place. The input of the articles decided us to use three categories of benefits: social/political, economic and operational/tactical. These three categories from the vary influential work of Janssen et al. (2012) were adopted for the following reasons in this paragraph.

In table 2.3 different terms used in articles are categorized in one of the three adopted categories. Even though the focus of a term is somewhat applicable to one category, some terms were difficult to put in one box, since some presumed benefits cover more then one category. An example is innovation (Jetzek et al., 2013; Pereira et al., 2017), which implies economic benefits in scaled up OGD applications but could yield operational benefits as well when the innovation entails a government service. Secondly, terms related to participation and collaboration (Jetzek et al., 2013; Pereira et al., 2017; Attard et al., 2015) are difficult to attribute to one category. Yet given the showed necessity of reuse of OGD in order to create value, they are extremely relevant. While analyzing, the question arose what is a benefit and what is a means to achieve a benefit.

Terms like transparency, participation and collaboration are a good indication of where the collective action in an OGD ecosystem ideally is headed to, because only while achieved social/political, economic and operational/technical benefits from OGD release are derived. Only then the policy is focused on a (re)use perspective, as shown to be the motor for value creation. Innovation and participation are therefore terms that could be interpreted as means to achieve social/political, economic and operational/technical benefits. Therefore, the terms as adopted by Janssen et al. (2012) are a useful categorization when answering question of why OGD should be released. Therefore, it is in the view of this study that value creation is thus not inherent in specific groups of actors, but created in interactions and dispersed outside the OGD ecosystem itself throughout society.

Parycek et al. (2014) conducted a survey in local OGD initiatives and assessed presumed benefits among city representatives and external stakeholders. The differences between the two show that stakeholder perceptions in derived benefits varies, and therefore could influence the willingness of a stakeholder to play their part in the ecosystem-oriented OGD release. This observation strengthens the claim of the research goal of this thesis to contribute to scientific knowledge of stakeholder perception alignment as a determent for successful OGD implementation.

2.3.2 Activities in the municipal OGD ecosystem

Table 2.4: Literature review on ecosystem tasks

Author(s)	**release**	**use**	**maintenance**
Zuiderwijk, Janssen, and Davis (2014)	releasing, publishing on the internet	searching, finding, evaluating, viewing, cleansing, analyzing, enriching, combining, linking, visualizing, interpreting, discussing, providing feedback	managing quality, establish meta-data
Alexopoulos, Loukis, and Charalabidis (2014)		grouping and interaction, data processing, enhanced data modelling, feedback and collaboration, data quality rating, data linking, data new versions publication and data visualization	
Attard, Orlandi, Scerri, and Auer (2015)	creation, selection, harmonization, publishing	interlinking, discovery, exploration, exploitation	data curation; data exists, digital form, online, machine-readable, bulk, timely and up to date, free, open licence
Zuiderwijk, Janssen, and Susha (2016)		Searching, finding, analyze, visualize, interact	OGD quality analysis
Vetrò et al. (2016)			traceability, currentness, expiration, completeness, compliance, understandability, accuracy

In this paragraph, the focus is on what activities are part of the ecosystem. Attard et al. (2015) roughly aggregate tasks in two categories: OGD publishing and OGD consuming. These tasks correspond to release and use. A third process of aligning the two activities in the OGD handling process is to data maintenance or data curation. This third phase is important, as it involves updating the publishing process in order to be properly consumed. These three tasks in this research are referred to release, use and maintenance of OGD. The tree tasks consist of multiple activities, which is extensively covered by existing literature. An overview can be found in table 2.4.

Data release, use and maintenance are used in this research as the main activities in the municipal OGD ecosystem. OGD use is very much dependent on how the data is released. Maintenance of the data improves the data release process to better prepare the data for use. For this reason, there has been a lot of research on what requirements of data enable actual use. A set of eight criteria have been established by the ministry of Internal Affairs and Kingdom Relations: (1) data online, (2) free access, (3) no registration necessary, (4) open license, (5) up-to-date, (6) machine-readable, (7) meta-data available and (8) standardization. The level of compliance of OGD to these requirements determine the openness of the data. They have their roots in the theorem of linked data of Bizer, Heath, and Berners-Lee (2011), which states that when all requirements are satisfied data could be automatically gathered, compared and analyzed. Data conditions follow from the harmonization of use and release and should be met in a well functioning OGD ecosystem.

As can be derived from table 2.4 various articles focused on activities associated to the tasks in the ecosystem. Some specifically went in to either one of the activities and some covered a wider scope of activities. The most detailed articles (Alexopoulos et al., 2014; Attard et al., 2015; Zuiderwijk et al., 2014) did not focus specifically on the local context, so attention should be brought to which activities are applicable on local context.

2.3.3 Entities in the municipal OGD ecosystem

Now that the benefits, activities and tasks in the ecosystem are clear, they should be attributed to entities of data-oriented processes. Dawes et al. (2016), in their sequel work on the ecosystem categorized stakeholders involved in the ecosystem as providers, users and beneficiaries or consumers; translated to this research provider applying to municipal officials or political leaders, with users they refer to ”transparency advocates” and ”civic technology community”. With consumers they seem to aim at stakeholders on the citizen level. Their definitions provide an overview of entities from an ecosystem perspective. Likewise, the terms transparency advocates and

civic technology community imply and show that direct users of data not only have idealistic motivations, but chase rather practical and commercial motivations as well to engage in OGD use. The distinction in users and consumers shows that citizens and users are clearly separate categories to consider. However, this separation is rarely made. Some scholars mainly focus on citizens (Wijnhoven et al., 2015), whereas many focus on the broad sense of users. In order to attribute the activities as identified in the previous paragraph to these entities, the literature on stakeholders is synthesized into figure 2.1. In this research, therefore the narrow term users is not used. We distinguish rather between a focus on municipal governments, infomediaries and citizens. In the next paragraphs the design of figure 2.1 is explained.

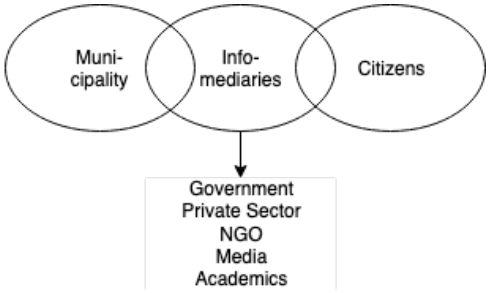


Figure 2.1: Literature review on entities in the municipal OGD ecosystem

The term infomediary is a buzzword in OGD ecosystem literature and therefore is adopted. Gascó-Hernández et al. (2018) categorize infomediaries as innovators, data journalists, researchers and activists. Safarov et al. (2017) assessed users in their literature review as citizens, business, researchers, developers. NGO's and journalists, yet despite the overlap of stakeholder as mentioned by Gascó-Hernández et al. (2018), they do not explicitly mention the term infomediaries. The literature on infomediaries is thin because it is a relatively new finding in OGD literature. As one of the first, Johnson and Greene (2017) did a scan of infomediaries in a local context and categorized infomediaries into governments, private sector, no-governmental organization, academics and media. Their definition of infomediaries is: "intermediaries that support the creation and sharing of digital information" (Johnson & Greene, 2017, p.7). The difference in their indication of users in comparison to previous research allowed to conclude that the boundaries between the three categories of ecosystem entities is not entirely evident. In other words, infomediaries could be governmental officials or citizens as well, making it hard to attribute roles to certain people. In some research infomediaries are considered to be systems rather then humans, yet in this research the term is used solely to indicate the people behind the systems, because the focus is on (social) interaction.

Despite the notion that different organizations or groups of individuals could be located on the intersection of more than one level of the main ecosystem entities, the distinction should be made in terms of roles that are played in an ecosystem. Some attribution of activities to roles are evident and should be complete, such as OGD release being primarily a task of municipal officials. It is also evident that infomediaries process data in a way that the broader public can make sense of the data. Also, for an ecosystem to function, that is to all tasks being executed, interaction between the municipality, infomediaries and citizens is to established. Yet it is important to consider whether this citizen interaction not actually is limited to infomediary interaction, because the boundaries between the two is often not made.

In the next section, the insights of this section are combined into an overview of a theoretically well functioning conceptual model of a municipal OGD ecosystem. It consists of all possible tasks in relation to their presumed executioners and their possible benefits. Then, interaction establishment will be examined as the logic of the design of an ecosystem.

2.4 The municipal OGD ecosystem for bottom-up value creation

In the last three paragraphs the benefits, activities and entities in the ecosystem of municipal open government data have been derived from the literature. Together, these insights provide a blueprint for a well functioning

ecosystem (figure 2.2). The figure is a basic flowchart consisting of the tasks of the ecosystem, where the initial task is the *data search*, indicated by the ellipse-shaped tasks. The ends of the chart are indicated by the rounded-shaped benefits outside of the figure. The striped lines lead from the execution of tasks to presumed benefits.

The literature shows that open government policies should be designed in a way that data publishers or re-leasers, i.e. governments and users, i.e. infomediaries and citizens interact. In this way value can be created. Economic benefits are derived from use after innovative OGD driven applications, both internally -at the municipality level from possible procurement services -, and externally, when citizens use OGD driven products and services. Societal benefits occur when transparency occurs after citizens interact with OGD, and when the municipality is responsive by the revision of policies based on carefully examined feedback from citizens and infomediaries. Operational benefits occur when governments increase internal use of data, possibly by the development of OGD applications for internal use. Also, the quality control as performed by responsible municipal services, but inspired and assisted by infomediary input, improves OGD implementation operationally.

These insights allow to asses the model as a collective action to create value using OGD. Some notion triggers the search of the data, setting of the flow of actions in the ecosystem. In other words, the model comprises bottom-up municipal OGD implementation in OGD initiatives. That is, a focus on user perspective, a societal incentive, rather then a top-down initiative from supra-municipal governmental organizations, triggers the data-search and then the process begins. The cycle will be initiated by a specific information request on the citizen/infomediary level. The aspects of the model: entities, benefits and activities are well researched and therefore a theoretical flow of the activities could have been made. To further examine the ecosystem, it needs to assessed what initiations start the process. What kind of societal needs determine the ecosystem design logic. In the next paragraph, the insights on literature on actor interactions in OGD ecosystems have been used to assess this question.

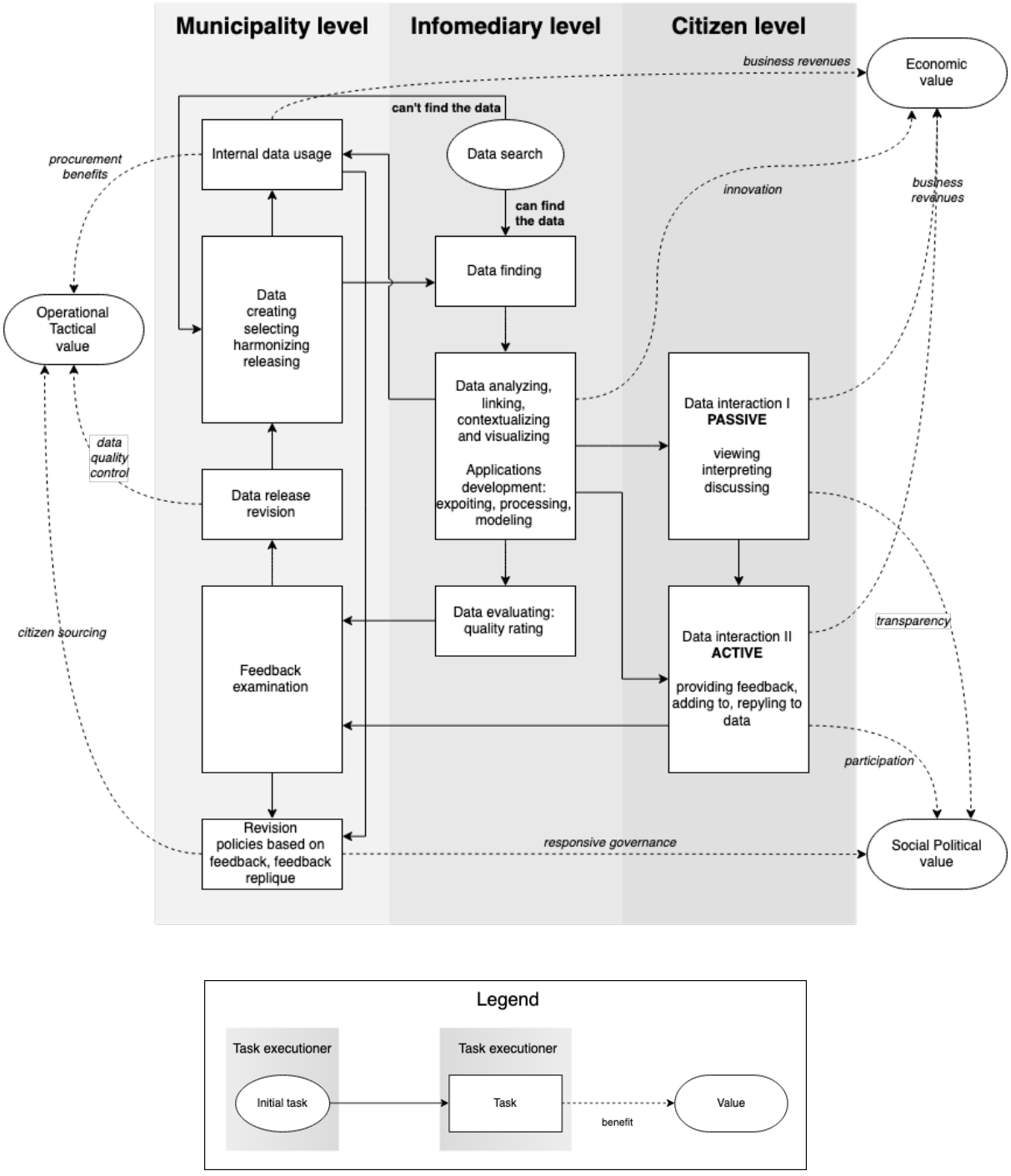


Figure 2.2: A conceptual model for a municipal OGD ecosystem

2.4.1 Ecosystem design logic with citizen interactions

In the authors view, interaction between governments and citizens is the main driver of ecosystem oriented value creation. These notions are derived from all the insights in the literature on open government and e-government. As highlighted in section 2.3.1 transparency, participation and innovation are key to consider as value creators alongside 'types' of usages like hackathons and data-analytics (Safarov et al., 2017). This created the view of the author of this research that the phenomena covered by these terms determine the underlying logic of the establishment of an ecosystem. This logic is the basis of how economic, social/political and operational/tactical value is created and therefore determine the design of the ecosystem and how the actor interaction looks like. It determines which releasers, infomediaries and citizens have to be engaged, which tasks have to be conducted, and

which value is created. Then the question arises what possibilities of this 'actor interaction' exist in ecosystems. In this paragraph, possible ecosystem designs are explored.

Some theorize on how actor interaction manifests when an open government 'matures'. For instance Lee and Kwak (2012) developed an Open Government maturity model. Initial conditions lead from transparency into participation and collaboration, which then further develops into ubiquitous engagement. By maturing, the information exchange and level of conversation between governments and citizens enhances. Also Sieber and Johnson (2015) assessed interaction between citizens and governments as the essential logic of e-governance, and developed four models with similar attributes as Lee and Kwak (2012). In their research, the role of an open government gradually evolves from a data publisher to a civic participation engaging governor, as the openness of the government matures. The concepts of these researches help to indicate where an open government movement ideally is headed and they indicate *what* interaction between governments and citizens is considered as an important success factor of OGD implementation in ecosystems. However, the indicated research has not shown in what situations what maturity level is required in order to yield benefits. Furthermore, it remains unclear how the level of maturing relates to what kind of benefits. Lastly, the shown distinction between citizens and infomediaries is not explicitly made, there is no explicit focus on local contexts and it is not given how this interaction should be established

Therefore, in further developing answers to questions concerning *why* actor interaction is established the work of Wijnhoven et al. (2015) is relevant. Besides motivations for citizens to participate in governance, the focus in their study was on what opportunities for civic participation exist from a government perspective. They categorized four kinds of participation divided into a two axes matrix of domain (administrative, political), and innovation ambition (low, high), Two conclusions were done. First, the study showed that there was more participation observed in less ambitious (low level of innovation) projects. This is the case at low levels of innovation, administrative project referred to as citizen sourcing, whereby the input of citizens serves a rather practical purpose, to mainly increase operational benefits of governments. Secondly, despite no explicit referring to infomediaries, they did distinguish between low and high level participation, which insinuates to attribute these two kinds of participation to ordinary citizen and infomediary participation, respectively. Together these two insights reveal that in studies about participation the question arises: *participation by whom?*. A wide citizen engagement should be considered differently than the participation of a few more technically equipped infomediaries. Also Johnson and Robinson (2014) wrote about reasons for citizen-government interaction focusing on infomediaries in the context of hackathons, typically partaken by software developers and classified as a type of OGD use by Safarov et al. (2017). In the line of the insights of Wijnhoven et al. (2015), this kind of interaction is considered citizen innovation, on the domain of high innovation, implying that their study focuses on infomediary participation.

Thirdly, it is relevant to assess *how* this interaction should be established. As stated before, there is an important role for the infomediary OGD sector in the creation of value out of OGD. Janssen and Zuiderwijk (2014) conducted an analysis of what kind of infomediary business models of OGD can be established. Two essential dimensions to assess in business models are level of access to the data and level of dialogue, where the former contributes to transparency and the latter to participation and collaboration. Meijer et al. (2012) also make a distinction between the two, in their work on relations between what they define as "vision" and "voice". They urge the message that the two do not necessarily have synergistic relationships, implying that some combinations hamper and some stimulate the value creation.

In this paragraph actor interaction has been identified as the logic of ecosystem design (the 'what'), by assessing relevant e-government participation literature (Lee & Kwak, 2012; Sieber & Johnson, 2015). Then, insights on actor interaction on why to establish civic participation were viewed by adopting governmental perspectives (Wijnhoven et al., 2015; Johnson & Robinson, 2014). The relevant variables derived from these researches are domain (administrative and political) and level of innovation (low, high). However, the main limitation of these researches is that they solely focus on *active* citizen participation as a form of interaction established between governments and citizens. In these articles the view is portrayed that from citizens and/or infomediaries additional tasks are required than the solely viewing the data. However, the tasks associated to the use of OGD in the ecosystem as identified in paragraph 2.3.2 cover passive activities as well, mainly

viewing the data as a possible value creator as well. Therefore, active interaction should not necessarily be perceived as an essential for value creation and value creation out of passive interaction should be taken in consideration as well. To take into account passive interaction alongside civic participation as a value creator is also implied by literature suggesting that level of dialogue or voice (active interaction) and level of access or vision (passive interaction) in different combinations have different outcomes in terms of benefits (Meijer et al., 2012; Janssen & Zuiderwijk, 2014). Thus, to conclude this paragraph and what types of ecosystem could be designed a combination of dimensions in literature is adopted in order to establish a *2x2 matrix* of possible ecosystem designs in table 2.5. The administrative/political dimension is adopted from Wijnhoven et al. (2015) and active/passive citizen interaction is derived from Meijer et al. (2012) and Janssen and Zuiderwijk (2014).

Table 2.5: Ecosystem designs derived from active and citizen interaction schemes

		Citizen interaction	
		Passive	*Active*
Domain	*Administrative*	Citizen Informing	Citizen Sourcing
	Political	Transparency and Accountability	Collaborative Democracy

The ecosystem design is defined as the logic for an initiative to establish interaction between a governing actor and its citizen peers by releasing the concerned open government data-set in high quality. The four flavours of designs are briefly exemplified.

Citizen informing

Being on the passive, administrative domain, citizen informing is considered an initiative using a high quality data-set to inform citizens on administrative concerns, such as public art installations, garbage collecting schedules and voting locations. An initiative on this level aims to improve the informing of citizens. This could be done by the development of a platform or integrating the data into an existing platform. Also the development of an app, on public transport planning for instance, is an example of a citizen informing logic, which is the case for municipalities on an app for local ferry rides for example. However, the initiative does not aim to collect replies to data or feedback from citizens.

Citizen sourcing

Citizen sourcing is a means of collecting citizen feedback as an improvement and facilitation of administrative government services. A widely known example of citizen sourcing is a platform where citizens can notify the municipality on disturbances is public space. However, within the scope of OGD, citizen sourcing in this context adds to the necessity pf high quality data to establish a platform or service.

Transparency and Accountability

The logic of this domain is very similar to citizen informing described earlier. However, the goal is not solely to inform a citizen, but to improve transparency and accountability, Therefore, in initiatives inspired by transparency and accountability the exposing of governmental procedures really is required. Financial data are an example of politically sensitive data that shall be published in high quality in order to develop platforms, websites or apps in these initiatives.

Collaborative Democracy

Collaborative democracy as a logic of ecosystem design expands upon the logic of transparency and accountability by including mechanisms to collect input of citizens. Civic participation is a key term to consider and initiatives on this level really aim to collect input for municipal policies or budget allocations. OGD platforms developed in this quadrant typically entail policy information in data format and consist of input forms where citizens can file suggestions for policy making.

2.4.2 Possible barriers and corresponding solutions

The systematic literature review concludes with an exploration in the literature on barriers and succses factors that could hamper or stimulate the flow of the designed ecosystem. In this section, the literature on local governments is particularly important to consider, because barriers on a local level might vary a lot compared to barriers on higher government levels. A lot of research of the past has focused on barriers in order to obtain answers why data release is not yet well established. *Risks, barriers, conditions* and *success factors* of OGD implementation are relevant terms that have been covered in OGD literature to identify barriers and success factors in ecosystems. Janssen et al. (2012) categorize barriers for deriving benefits from OGD publication into six categories: institutional structure, task complexity, use and participation, legislation, technicalities and information quality. The information in literature on barriers/success factors and conditions were combined and categorized alongside their categories to gain understanding of these barriers and their corresponding solutions referred to as success factors. As an additional factor, *evaluation* was defined.

Table 2.6: Barriers and success factors on seven contextual, internal, external and technical categories

	Author(s)	institutional structure	task complexity	use and participation	legislation	technicalities	information quality	evaluation
Barriers	Janssen et al. (2012)	institutional structure	task complexity	use and participation	legislation	technicalities	information quality	
	Conradie and Choenni (2014)		new policy, not being able to find the data		uncertain judicial frameworks	technical issues		uncertain economic outcomes
	Shepherd et al. (2019)	small consistency organizationally. unclear responsibilities		acknowledgement external users		technical infrastructure: OGD, websites, long-term provision of access	storage of data and meta-data	no agreement about benefits
	Attard et al. (2015)	Capacity, Budget provision, Institutionalization, Conflicting Regulations	Awareness, Motivation	Competition	Privacy, Data protection, Copyright and licensing	Technical support	Liability	
Success factors	Parycek et al. (2014)	Clear definition of responsibilities and process steps	Process model for OGD publication	Stakeholder specific target group management, Networking between different target groups, Publication of political data, Homogeneity of external-facing implementation	OGD backed by legal framework	Integration of OGD platform into existing CMS systems to kick- start the progress	Homogeneous data standards	
	Safarov et al. (2017)	Policy	Skills	Skills, Availability	Legislation, Privacy	Infrastructure	Quality of data	
	Susha et al. (2015)	Management support and publication processes within governmental agencies, Strategy and political support	Training of and support for civil servants	Training of and support for open data users, Incentives for open data use, Collaboration, Research and education	Legislation, regulation and licenses	Open data platforms, tools and services	Accessibility, interoperability and standards	Evaluation of the open data initiative, Feedback and sustainability, Success stories

The overview can be found in table 2.6. Next to the given categories, a seventh category could be defined as *evaluation*, which consists of success factors related to success stories, sustainable OGD implementation etc. It was added as a category. because in studies on success factors this category is explicitly named. In the studies selected on success factors (Parycek et al., 2014; Susha et al., 2015) the focus was on municipal/local initiatives in Vienna. Also Dutch local initiatives (Conradie & Choenni, 2014) were researched. The insights of this paragraph allow to indicate that a lot has to be done in order to convince stakeholders to execute their tasks in the ecosystem. Yet barriers have shown that stakeholders might not know their responsibilities, are not able to identify outcomes, struggle with judicial frameworks and overall: tasks are to complex.

In this part of the literature analysis, both barriers and success factors have been categorized along the same categories, to indicate that both barriers and solutions vary on these seven categories. Institutional barriers correspond to organizational barriers, such as the absence of resources and responsibilities in organization structure. Possible solutions or success factors on this category manifest in the establishment of institutional features. Task complexities relate to motivational issues and capabilities of responsible agents in publicizing and using OGD, and solutions on the category of task complexities correspond to guidelines and training. Likewise, there are technical barriers and solutions, and both factors on legislation and use and participation. There are barriers related to information quality and success of information quality lie mainly in standardization.

It is important to note that a barrier on a specific category does not necessarily is overcome by a success factor on the same category. For instance, it is not unlikely that task complexity could be revealed by technical support and use and participation could be encouraged in legislation and institutional policy structure.

2.5 Conclusion

In this second chapter, the first sub-question was answered: *What does the municipal OGD ecosystem look like?*. A systematic literature review has been conducted to identify values, stakeholders and tasks as elements of an OGD ecosystem. Because the aspects are well researched, a conceptual model of an ecosystem could have been developed conceptualizing the task responsibilities of stakeholders and their relations to presumed OGD values. Then, different designs of ecosystems could have been defined by assessing a political or administrative domain of an initiative on the one hand, and an active or passive citizen-government interaction on the other hand. Lastly, barriers and success factors as blockades or reinforces of the flow in an ecosystem were identified, implying that stakeholders should be convinced of responsibilities, tasks and benefits in order to play their role in the ecosystem.

Value is derived on social/political, operational/tactical and economic scale by open government data initiatives in municipalities. The value is created by the execution of various tasks concerning the publication, use and maintenance of data by three main ecosystem stakeholders: municipalities, infomediairies and citizens. Citizens either interact passively or actively with data typically in OGD initiatives initiated by infomedairies. Infomediaries consist of data specialists in governmental, private sector, NGO, academic or media-organizations. Depending on the incentive for citizen interaction, which could be political or administrative, four citizen interaction schemes were defined as ecosystems. Citizen informing and citizen sourcing correspond to passive and active citizen interaction on the administrative domain, respectively. On the political domain, accountability & transparency accounts for passive citizen interaction and active citizen interaction is established in collaborative democracy initiatives. Lastly, barriers and success factors relate to seven features: institutional structure, task complexity, information quality, use and participation, technicalities, legislation and lastly, evaluation.

Chapter 3

Expert review of conceptual model of ecosystem

3.1 Introduction

In this section the expert review on the conceptual model of the ecosystem is discussed. An answer is given to the second sub-question of the research: *to what extent is the conceptual model of the municipal OGD ecosystem accurate, insightful and useful?*. On June 16th, a seminar was organized with mid-term presentations of four graduate students about open data and open government at the department of Public Administration of Utrecht University (UU) in the Netherlands. Alongside three student of the master degree Public Administration at UU, the preliminary results of this research was presented in a six minute presentation. While presenting, a paper survey was distributed among participants of the seminar. In this section the results of the survey and the implications for this research are described.

3.2 Survey methodology

The goal of the survey was to evaluate the conceptual model of the municipal OGD-ecosystem using expertise of participants of the seminars. The general methodology was to present the ecosystem and ask open questions about the ecosystem on completeness, clarity and understandable, representation and usability in terms of policy making and jobs of experts.

In formulating evaluation questions, the literature on technology acceptation was used. The influential work of (Venkatesh, Morris, Davis, & Davis, 2003) provided guidance in how to formulate the questions. In order to obtain both a quantitative and a qualitative indication of expert views on the ecosystem, both a scale from 1 til 10 and a free entry field were given. The questions and the obtained data can be found in appendix B.

3.2.1 Respondents

Around seven of the approximately 15 attendees of the seminar filled in the questionnaire. Even though this number is quite low, still valuable feedback was gathered. A digital summary of the answers to the questionnaires can be found in appendix B. The respondents were identified by the letter r plus a number from 1 to 7. The following respondents were reached. Further information about the respondents van be found in table B.1.

Table 3.1: Expert review respondent characteristics

Respondent	Organization	Function	Role
r1	*Leer- en Expertisepunt Open Overheid*, BZK	Coordinator	Knowledge creator, Connector between reusers and governments, policy maker
r2	Utrecht University	Academic professor	Open data researcher
r3	Province of South Holland, *Provincie Zuid-Holland* (PZH)	Project leader Transparency and Open Province	Open data advocate and initiator of provincial collaboration
r4	PZH	Project leader	Interaction policy & data science
r5	CBS	Product owner Open Data	Trendsetter from perspective of data suppy
r6	The Green Land	Open Data Consultant	Advisor to governments for internal and external open data adoption
r7	The Green Land	Partner	Open government leader

Among the respondents there were two private sector data infomediaries (The Green Land), one academic, one ministerial governmental agent (BZK), two coworkers from the province of South-Holand (PZH) and one representative from CBS. All respondents were affiliated with open data in a way.

3.3 Results

In figure 3.1, the quantitative results are given. The general impression of the results is that the academic and the representative of BZK perceived the conceptual model as more interesting than the rest of the respondents. They provided extensive comments. Most of the respondents found the conceptual model to be too much data-oriented, rather than focused on the societal incentive

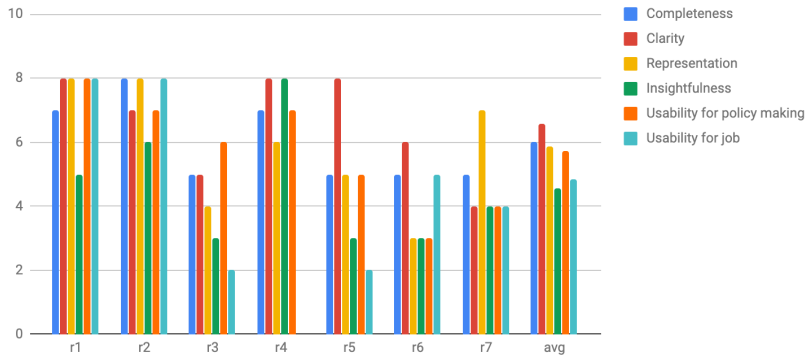


Figure 3.1: Expert ratings of conceptual model of ecosystem per respondent

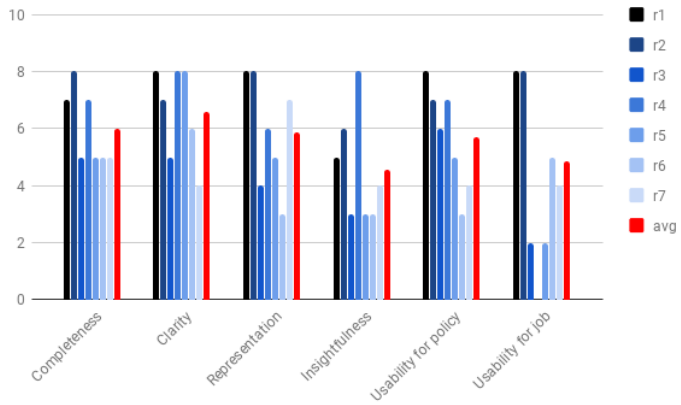


Figure 3.2: Expert ratings of conceptual model of ecosystem per category

Completeness

The completeness of the conceptual model scored a 6/10 on average. Every respondent that added remarks, commented that the aspect of data was complete, but the societal context was missing. The seminar was very broadly themed as open government. The additional speakers on the seminar were presenting findings about research regarding open government rather than OGD, which makes it reasonable that the conceptual model was perceived as too much focused on data in context of the theme of the seminar. According to the academic, the policy context could be added, a link with policy cycle could be interesting and data exchange between governments could be added.

Clarity

The ecosystems understandability and clarity scored a 6.6. Some argued in the comments that the level of detail was high and therefore not easily readable. One respondent added that it was unclear where to begin interpreting in the ecosystem.

Representation

A 5.9 was rewarded to representation. The only reasoning found for unrealistic representation was that it was idealistic. This corresponds with the view that it is a theoretic conceptual model of an ecosystem, rather than a real-life observed phenomenon.

Generating new insights

4.8. Many argued that there were no new insights. However, two respondents, the academic and the representative of BZK, highlighted that the distinction between active and passive citizen interaction was an interesting addition to their knowledge.

Usability for policy making open data

A 5.7 for usability for policy making of the conceptual model indicates that some clarifications were made possible by the conceptual model in terms of stakeholders and processes.

Usability for respondent work

4.8 For some it was difficult to answer this questions, because the aspects of the conceptual model were rather abstract and general instead of specific to a case. The representative of CBS did not see value in this aspect because he works at a central institution.

3.3.1 Implications of expert review

From the expert review a couple of implication for this research follow.

1. The core principle to distinguish between active and passive citizen interaction is perceived as insightful and innovative in analyzing value from OGD. This notion is endorsed by an academic researcher, which justifies the direction in this research that is headed.
2. As of the suggestion of the policy context to be part of the ecosystem, this research includes these contextual factors as success factors and barriers for ecosystem functioning. The conceptual model however is focused on bottom-up value creation from societal initiatives. It implies that it is relevant to assess in cases whether critical tasks have been executed by policymakers as well in the value creating process.
3. The lack of focus on the issue data are a means for addressing implies that in explaining and assessing the conceptual model, it has to be clear that the initial task, data search, actually is initiated by a societal initiative. This will be key in the cases to research as well.

3.4 Conclusion

By structuring the entities, activities and value of the ecosystem, in chapter 2 a conceptual model could have been created of a functioning municipal open government data ecosystem. In this chapter, the conceptual model was evaluated in an expert panel, answering the second research question: *to what extent is the conceptual model of the municipal OGD ecosystem accurate, insightful and useful?*. Although experts felt that not the societal incentive, but the data was central in the ecosystem, the ecosystem was clear and added some insights to the academic literature. The distinction between active and passive citizen interaction was highlighted as the main contributing factor to novel insights. Furthermore, policy context was advised to be added in the ecosystem. In the next chapter, two case studies of citizen sourcing and citizen informing are performed to evaluate the conceptual model in real-life and to explore the differences between the two.

Chapter 4

Value drivers and inhibitors in municipal OGD initiatives

4.1 Introduction

In this chapter, the focus is on the third sub-question of the research: *what are stakeholder perceptions on values, barriers and success factors of open data initiatives in municipal OGD ecosystems?"*. The goal of this phase of the research was to evaluate the flow of data and value from the conceptualized ecosystem (chapter 2) among different stakeholders in two case-studies. In conducting case studies the work of Yin (2018) provides useful guidelines. In his work criteria are given for case-study research as a suitable method for research, which apply to this phase of the research. First, the field of municipal OGD release in a proactive manner can clearly be seen as a contemporary phenomenon within its real-life context, since the digitization of governments is currently in a transition phase. Secondly, the objective of this research clearly aims at answering why-questions to find explanations of why decisions were made. Thirdly, the goal of this research phase is not to evaluate how manipulation by the researcher has influenced the decisions in the cases. The second and third notion make a case-study research a preferred strategy over other research strategies such as experimental design. Moreover, "the boundaries of phenomenon and context are not clearly evident" (Yin, 2018), implying that case study research is the right method.

The case studies are selected using the ecosystem designs on the administrative level derived from in the previous chapter (see table 2.5). Due to required high in-depth level of the cases, only two cases fit the scope of this research. The reason for choosing the administrative level, rather than the political level was threefold. First, cases on the administrative level were available to the researcher. Secondly, to really understand the tendency of stakeholders to value active and passive citizen interaction, the bias of political risk could have been taken away by selecting cases on the administrative level. Thirdly, selecting a case on the quadrant of collaborative Democracy turned out difficult and initiatives on this level seem to be essentially different. This has to do with the notion that high-level participation on this level is not as applicable to the broad sense of citizens on the one hand and there is reasonable doubt whether high quality OGD is as important for initiatives on this level of ecosystem design as on the other quadrants. This has to do with the fact that collaborative democracy entails highly informed and technically equipped citizens (Wijnhoven et al., 2015). In section 6.4.1 there is additional reflection to theses notion. In the next section, the case study selections and their backgrounds are given. Then, the case study design and how this strategy fits in the overall ASM-approach of this research. It is followed by the results and the sub-conclusion.

4.2 Case study selections

To assess value creation in both a citizen informing ecosystem and a citizen sourcing ecosystem one of each was selected. The citizen informing case is Where is my polling station?, *Waar is mijn stemlokaal?* (WIMS) (English: Where is my polling station?). WIMS is an initiative where Dutch municipalities release data on polling stations

as open data in a national standard using high qualitative data standards concerning location and meta-data like station accessibility for disabled people to the infomediary NGO OSF. The data is released and visualized on a central website. The citizen sourcing case is Smart Notification, *SLIM Melden* (SLIM) (English: SMART notification). SLIM is an open data initiative developed by Civity, an infomediary business developer focused on open government data applications for the public sector. *SLIM Melden* is an app where citizens can notify municipalities on disturbances in the public space. Garbage and broken objects in the public space are examples of disturbances where citizens tend to do notifications on. The notifying process is facilitated because the object data are loaded in the app, so notifications on specific objects can be made. Furthermore, the data on notifications is released as open data as well.

4.2.1 Selection criteria

The cases were selected for a couple of reasons. First, an ecosystem oriented municipal OGD initiative within the scope of this research is defined as a value creation process of at least a municipal, infomediary and citizen party from pro-active OGD release. The release of the OGD is a means rather than a goal of the initiative. Moreover, these goals related to the relevant design logic varieties: citizen informing and citizen sourcing.

Secondly, both cases entailed a significant alteration of data gathering and administrating processes within the municipal organization in order to change the processes into an OGD oriented process. This means that some processes had to be undertaken by municipalities in order to alter the processes. There was some level of technical complexity of data release, also implying an investment of capacity, and implementation of some level of procedural alteration. These criteria collectively lead to the general notion that for cases to be selected there had to be some level of barrier for municipalities to engage in the initiatives. These barriers have been identified in section 2.4.2. Together, these criteria account for barriers on *institutional structure*, *task complexity*, *technicalities* and *information quality* as described in table 2.6.

Thirdly, both cases were focused on use and participation of 'ordinary' citizens. As described in section 2.4.1 the ecosystems are presumed to be designed in order to establish interaction between governments and ordinary citizens. Voting and public space notifications are both practices where ordinary citizens are engaged. For this reason, both cases were very much comparable on this dimension and that made the selection of the combination of the two very favorable.

Fourthly, the citizen-sourcing aspect of SLIM and the unidirectional informing aspect of WIMS allow to make the assumed distinction in active and passive ecosystem designs as explained in paragraph 2.4.1. evident. Both cases applied to the administrative domain rather than the political domain. In other words, the goal of the initiatives was not so much to increase transparency and accountability or to establish high-level citizen participation in policy making. Rather, both initiatives aim to improve a governmental service. Additionally, by focusing on governmental services on the administrative domain in both cases, there was aimed to minimize the bias on political sensitivity of an initiative as a barrier for partaking in the initiative. This means that this factor could influence the reasons for municipal administrators to be less willing to release data, or to influence their perception on an OGD initiative otherwise.

However, it is not said that in these initiatives transparency and accountability played insignificant roles. Also, beforehand, it is not certain that there was no political sensitivity to data. For instance, OGD on poling stations might reveal that municipalities did not put sufficient effort in establishing polling locations in a fairly distributed manner in a municipality. Also notifications on public space disorder might reveal that municipalities are reluctant in processing notifications. Transparency and accountability are therefore not at all aspects to be disregarded on cases on the administrative level. However, in both cases transparency and accountability were not the main goal of the initiative. For this reason, the initiatives were qualified on the administrative level. How additional parameters have been taken into account in the case study research will be explained in paragraph 4.3.

Additionally, there were some practical reasons to these cases that caused them to be selected as well. The initiatives occurred in one or more Dutch municipalities. Fluency in Dutch language of the researcher made it easy to assess policy documents and to communicate with stakeholders. Secondly, relevant stakeholders for each selected case were available. Finding partaking and non-partaking municipalities is relevant to increase information availability on what reasons municipal administrators have to decide (against) an initiative. Furthermore, by keeping Dutch cultural context in the cases, cultural bias in perceptions is minimized.

In the next section paragraphs, case descriptions are given. By examining the implementation time-line and procedures, the relevant stakeholders could have been identified, both on the infomediary level and different departments within municipalities.

4.2.2 Description case 1: Where is my polling station? (*Waar is mijn stemlokaal*)

Waar is mijn stemlokaal? is an initiative managed by Open State Foundation in the Netherlands to gather data on polling stations to publish all Dutch polling stations on a central website (see figure 4.1). Providing information on polling stations as a citizen informing procedure in the Netherlands is a municipal task. The main concern in the initiative was to make it easier for voters to vote by providing information on where polling stations are located, and providing additional information such as accessibility and opening hours. In preparation of the national elections Dutch national elections, *Tweede Kamerverkiezingen 2017* (TK17), the infomediary NGO OSF started gathering polling station data and releasing it on a central web-location. Initially, the data was gathered at the address level and released at the website of OSF. A collaboration with Facebook was established to refer users on election day to the data on the website in order to assist voters in where to vote and to encourage them to vote. The platform was used again for the elections Dutch local elections 2018, *Gemeenteraadsverkiezingen 2018* (GR18), Dutch regional elections 2019, *Provinciale Staten- en Waterschapsverkiezingen 2019* (PS19) and European Parliament elections 2019, *Europese Parlementsverkiezingen 2019* (EP19).Hundreds of thousands of website visits made OSF conclude that there was a societal need of a central polling station platform. The web-application of WIMS can be viewed in figure 4.1.

Figure 4.1: Case 1: web-application *Waar is mijn stemlokaal?*

4.2.3 Description case 2: Smart Notification (*SLIM Melden*)

SLIM Melden is a citizen sourcing platform developed by Civity. It is developed to improve the process of citizen notification of public space disturbance. Via a web-application or a smart phone application, citizens can easily make notifications on disturbances in the public space, like broken lampposts, vandalized bus-stops, and garbage on the street. There are some competing initiatives that develop notification applications, like *Fixi* and *Verbeterdebuurt*. However, the self-claimed competitive advantage of SLIM Melden over these alternatives lies in the data-driven underlying process in the SLIM Melden. In the brochure on the website of the website it says SLIM improves the notification procedure by smart process, smart insight and smart policy (Civity, n.d.-a). The data-driven procedure yield these benefits. In figure 4.2 the application in the municipality of Utrecht is viewed.

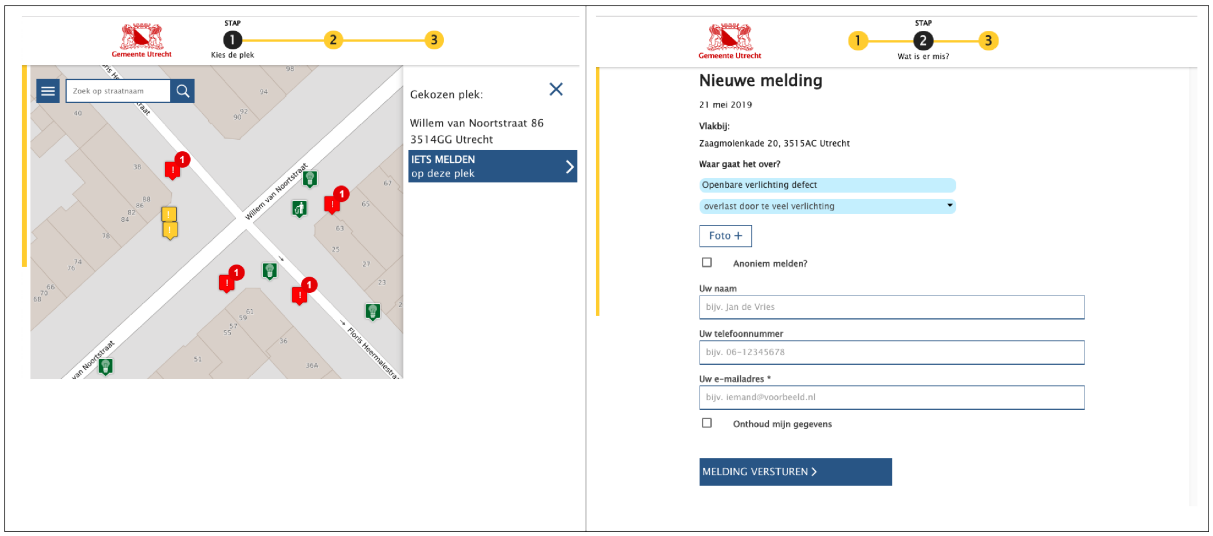


Figure 4.2: Case 2: web-application *SLIM Melden* implemented in the municipality of Utrecht

The data-driven aspect of SLIM Melden is twofold. First, object data is embedded in a map with a Geo-locator in the application, which means that objects like garbage-tanks and lampposts are visualized in the map. Secondly, a municipality specific data-standard is created by allowing certain categories of notifications. This means that the data on the notification itself is published as standardized open data.

4.3 Case study design

In this section, the ASM-approach of this research is fitted in a proper case study design using the theorem of Yin (2018).

4.3.1 Case study protocol

In order to conduct accurate and reliable case studies, a case study design and protocol is advised. In this case study design according to Yin (2018) consists of five components: case study questions, case study propositions, the unit of analysis, the logic linking the data and the propositions & criteria to interpret findings. These categories were adopted in the case study design, except for the propositions. Propositions relate to certain expectation with regards of case outcomes. Instead of propositions, *case parameters* were defined using the insights from chapter 2. These case parameters are expected to be of influence of stakeholder perceptions.

Case study questions

The first component of a case study design aims to define what answers shall be extracted from the cases. In order to answer the sub-question *"What are stakeholder perceptions on values, barriers and success factors in municipal OGD ecosystems?"*, the following case study questions have been defined:

1. What are perceptions of OGD ecosystem stakeholders on...
   (a) ...recognition and responsibility concerning ecosystem tasks associated to value creation?
   (b) ...what and how social/political, economic and operational value is created?
   (c) ...what barriers and possible solutions are experienced in the case initiatives?
2. To what extent do shared or conflicting perceptions explain why municipalities partake in open data initiatives?

Case study parameters

In order to answer case study questions, stakeholder perceptions are measured by using various information sources. The insights of the systematic literature review revealed parameters in OGD initiatives that might

influence case results. Mainly, in section 2.4.2 many possible OGD adoption barriers and corresponding solutions on seven categories have been defined. This implies that factors that corresponds to these categories are *proposed* to influence the perceptions of stakeholders. To fit these influences in the case study design, parameters were defined based on the insights sections 2.4.2 as influencing factors. For instance, the barrier *institutional structure* as defined in section 2.4.2 relates to the case parameters relates to municipality and the *Endorsed by additional influential player*. Likewise the barrier *legislation* relates to the case parameter *judicial risk*. In this manner, the seven barrier categories are translated into these case parameters. These parameters either relate to the characteristics of the data, the municipalities or the initiative. An overview can be found in table 4.1.

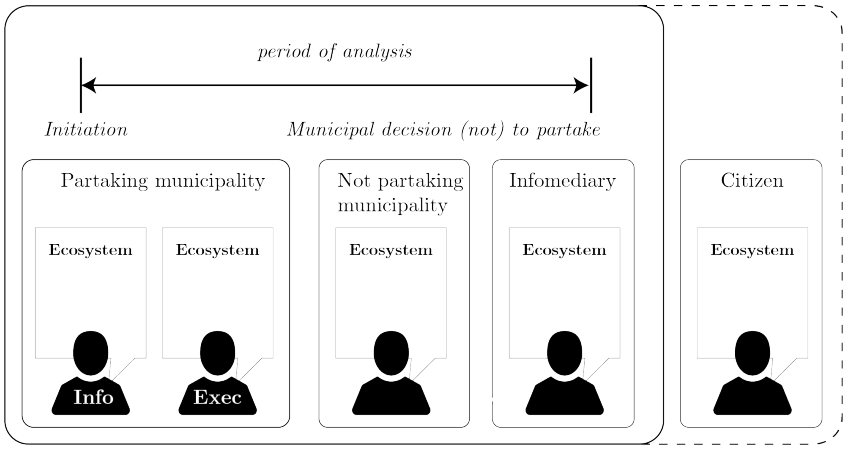
Table 4.1: Case study parameters in OGD initiatives derived from Systematic Literature Review

Parameter group	**Parameter**	**Parameter description**
OGD type	Release responsibility	OGD related to the case has to be released by municipal responsibility. The data related to the cases should be advised on the high-value data-list
	Intended data quality achievement in initiative	*(1) data online, (2) free access, (3) no registration necessary, (4) open license, (5) up-to-date, (6) machine-readable, (7) meta-data available and (8) standardization:* at least (1)-(6) and some level of (7) and (8)
	Judicial Risk	No or minimal risk for breach of personally identifiable information or private company information
Municipality	Size municipality	for WIMS: amount of polling stations influences effort to engage in initiative. For SLIM indifferent.
	Open data adoption municipality	Early-adopter, follower, defensive. Relates to political climate regarding OGD.
Initiative	What kind of infomediary	NGO, developer, governmental, academic.
	Endorsed by additional influential player	What ministry, supra-municipal organization, journalistic player etc. performs additional pressure on municipalities to engage in initiative

The parameters from table 4.1 relate to the additional defined barriers and possible success factor for overcoming these barriers as identified in table 2.6. As can be derived from that table factors like adoption climate of OGD initiatives due to cultural factors such as determination and agreement to benefits and political dedication within municipal organizations influence the success of an initiative. They therefore influence willingness of municipalities to partake or not to partake in an initiative. Therefore, they must be taken into account while analyzing the cases. To minimize the chance of rival explanations (Yin, 2018), there was acceptable expectation that some case parameters fit in a certain range that the case study questions can still be answered. Most parameters do not have a specific range, yet it still could influence results. Therefore these parameters have been examined in case analysis and have been taken into account while evaluating stakeholder perceptions in interviews as well. When the differences between the cases on these factors are very big, there might be a chance of rival explanation.

Setting the unit of analysis

The selected cases have been analyzed as followed. Relevant infomediary and municipality stakeholders have been selected. Per case representatives of municipalities that did and that did not partake in the initiatives were targeted. The ecosystem conceptual model has been systematically evaluated among these stakeholders. Two stakeholders per partaking municipality have been selected, the first entailed an executive administrator within the responsible department of the concerned municipal data, the second one was a communication/information executive within the municipality. The time of analysis is the period from initiation of the OGD implementation initiative to the moment a decision is made on whether to partake or not to partake by the municipality. An overview is found in figure 4.3. As can be seen in the figure, the perception of the role of the citizen is asked for in interviews of the other stakeholders. This has to do with the problematic definition of who 'the citizen' is. Therefore, the decision was made to ask all relevant stakeholders on how they view the role and the execution of citizens. Additionally, data on notifications for SLIM, website metrics of WIMS and news-articles were used to conceptualize the citizen perception. How assessing perceptions relate to the information sources will be further explained in section 4.3.2.



Partaking municipality	:	Municipality that has partaken in the open data initiative of the case
Non-partaking munipality	:	Municipality that has not partaken in the open data initiative of the case
Info	:	Perspective measured of the information/communication munipal agent
Exec	:	Perspective measured of the executive municpal agent of the municipal departemnt concerned with the open data initiative.

Figure 4.3: Case level unit of analysis: period of analysis and analyzed perceptions of stakeholders

In figure 4.3 the unit of analysis is visualized in a figure. The perceptions of the stakeholders will be extracted from different information sources. The results yield answers to the first case study research question: what are perceptions of OGD ecosystem stakeholders on (a) tasks, (b) benefits and (c) barriers and success factors?. The citizen perception is visualized in a dotted frame because it is derived indirectly. This is explained in section 4.3.2.

Linking data to propositions: Data Analysis

The data gathered in the information sources is analyzed and compared to answer the second case study research question: *To what extent do shared and conflicting perceptions explain why municipalities partake in open data initiatives?*. The data analysis concerns mapping the individual stakeholder perception mapping regarding the elements of the conceptual model of the municipal OGD ecosystem. It allows insights in what tasks are acknowledged and executed according to the interviewee.

Criteria to interpret findings

According to Yin (2018), one crucial part of case study analysis is to define under what circumstances results are analyzed. Thinking about rival explanations for case study findings. Addressing the case parameters from table 4.1 alongside the stakeholder perceptions, allows to interpret stakeholder perceptions in the case specific contexts. It was made sure that these aspects are also covered in data gathering processes. In other words, by both assessing the case parameters and evaluating how the parameters have influenced the views of stakeholders, the findings can be interpreted.

4.3.2 Information sources

In order to obtain the perceptions of the different stakeholders, multiple information sources were selected. According to Yin (2018), the use of multiple information sources increase the construct validity in the data collection phase. These information sources are given in table 4.2, including their contributions to perception measurements.

Table 4.2: Case study information sources; analyzed interviews, data-sets and archival records with corresponding perceptions measured

		Infomediary	**Partaking municipality**		**Non-partaking mun**	**Citizen**
		Infomediary project leader	Executive	Information / Communication	Executive	Target group
	Case 1: ***WIMS***					
	Interviews					
1	Interview 1: Open State Foundation; coordinator WIMS	x				x
2	Interview 2: Municipality Eindhoven; Public Affairs		x	x		x
3	Interview 3: Municipality Eindhoven; Geo-information		x	x		x
	Data-sets					
4	Data-set polling stations	x	x	x	x	x
	Archival records					
5	Subsidy evaluation GR18	x	x	x	x	x
6	Subsidy request PS19	x	x	x	x	x
7	USBO report		x	x	x	x
8	Analytics website traffic					x
	Case 2: ***SLIM***					
	Interviews					
1	Interview 4: Civity; coordinator SLIM Melden	x				x
2	Interview 5: Municipality Utrecht: Information Commissioner		x	x		x
3	Interview 6: Municipality Velsen: Public works		x	x		x
4	Interview 7: Municipality Stichtste Vecht: Customer contact				x	x
	Data-sets					
5	Data-set Meldingen openbare ruimte Utrecht					x
	Archival records					
6	News article *NRC Handelsblad*					x

- **Interviews** were the main sources of information. In measuring a perception, interviews are very suitable as a data collection method For WIMS, three interviews were conducted. Only the non-partaking municipal perception was not interviewed, because there was an available archival record to measure this perception. For SLIM, four interviews were conducted. Only for measuring the citizen perception, the interview method is less applicable. This has to do with the fact that citizens are very diverse and interviewing one citizen would only portray a specific perception. Other information sources were selected to conceptualize the citizen perception. In paragraph 4.3.3 more information about the interviewees and interview procedure is given.
- **Data sets** were analyzed to assess the data quality of the produced data in the initiative, This relates to the case parameter *intended data quality* (see table 4.1). Additionally, the data of notifications of the municipality of Utrecht were used to assess the perception of the citizens in terms of doing notifications.
- **Archival records** were used as information sources as well. First, a report was available on motivations for municipalities to partake or not to partake in WIMS. It was executed as a qualitative research project by five BSc Public Administration students at Utrecht University (Boverhuis, van t Hoff, Hofstra, Mijnlieff, & Noij, 2018). Various partaking and non-partaking municipalities were interviewed. Only the results chapter was analyzed, where various quotes and direct perceptions of municipal representatives were given. In this way, perceptions of non-partaking municipalities were conceptualized. Secondly, a subsidy request and evaluation written by OSF was analyzed. These reports reflect on feedback sessions with municipalities as well and therefore add to the knowledge about municipal perceptions as well. Thirdly, the analytics of

website traffic for WIMS was used to assess the perception of citizen visitors. Fourthly, a news-article in *NRC Handelsblad* provided valuable information on the citizen perception in SLIM.

4.3.3 Interviewee selections and protocol (appendix C)

As the infomediary party, the project leader of WIMS at OSF was selected as an interviewee. OSF is a non-governmental organization that promotes digital transparency of governments by lobby and assistance in the release of data and building open data application (Open State Foundation, n.d.). The latter allows to qualify OSF as an infomediary NGO.

As is turned out, the municipality of Eindhoven was a municipality that showed a lot of activity on the platform. Also, the data on polling stations in Eindhoven have been pro-actively provided to WIMS from the first initiative. On the municipal website of Eindhoven, in anticipation of election days the WIMS application tool was embedded. These factors allowed to target the municipality of Eindhoven as an partaking municipality. In the first interview, an executive of the election team, as part of the sector Public contacts was interviewed, accounting for the executive role of the partaking municipality. In that interview a perception conflict with the departments of Geo-information was highlighted. For this reason, a second Eindhoven representative in this department was interviewed. As an information officer, she fitted the information role of the municipality.

As for **SLIM**, Civity was the private sector infomediary party as the developer and initiator of SLIM melden. Civity is a small business located in the Utrecht metropolitan area focused on smart city applications. On the website of Civity, the organization is described as a smart city application developer by combining knowledge on local governance, insights in operational processes at the municipal level, the believe in networking and passion for data (Civity, n.d.-b). Civity is a market participant in auction (Dutch: *aanbestedingen* procedures for governmental procurement). These characteristics qualify Civity as a private sector infomediary.

Different municipal services have stake in the processes that SLIM influences. The municipality of Utrecht was one of the first participants of SLIM Melden. Utrecht is one of the leading municipalities in the Netherlands when it comes to open data adoption. The information commissioner of Utrecht was targeted as the information/communication representative of Utrecht. His job is described as aligning information and data policies with citizen needs. For this reason, he was a good candidate for interviewing the information perspective. Due to unavailability of the project leader of SLIM Melden at the municipality of Utrecht, another municipality where SLIM Melden was implemented was contacted. This led to the executive of public work maintenance services in the municipality of Velsen.

The municipality of Stichtse Vecht was chosen as a non-partaking municipality. Stichtse Vecht is a neighboring municipality of Utrecht. This means that from an operational perspective, there are advantages when SLIM Melden is implemented there as well. Citizens who regularly cross municipal borders would benefit from the use of one application over multiple applications and shared municipal maintenance services would benefit because of uniform procedural systems. However, Stichtse Vecht implemented another non-data driven alternative, *Fixi*. For this reasons, Stichtse Vecht was analyzed as the non-partaking municipality.

In assuring that the interviewees give answers that are in correspondence to this research question, an interview protocol has been developed. Because of the consistency in stakeholder perception levels that need to be measured, a standardized open-ended interview has been developed. This yields comparable results and at the same time leaves space for extensive motivation for decisions made by stakeholders during the interviews (Turner III, 2010). To make sure that the interview contains effective questions that correspond to the aspects that need to be measured, in developing the protocol the Interview Protocol Refinement (IPR) Framework of Castillo-Montoya (2016) is used. It entails developing a protocol matrix with questions ans actor views that have to be revealed in interview questions. The protocol was tested, piloted and refined. The protocol and its refinement can be found in appendix C. The protocol has led to construct a rather detailed list of questions. The list served as a tool to monitor whether interviewees have touched upon subjects as indicated on the list.

4.4 Case study analysis

In this section the results of the case study follow. Before diving into the perception analyses, various case characteristics have been identified. These characteristics allow to assess the case parameters as identified in table 4.1.

4.4.1 Case study parameters (appendix D)

In this paragraph, the descriptions of the cases are summarized by filling in table 4.1. In appendix D, the implementation, organizational procedures and intended data quality in both cases have been assessed. These finding contribute to the case parameters as well.

The results are given in table 4.3. Even though polling stations are not yet on the High Value Data-list, data concerning polling stations are considered to be added (Kwaliteitsinstituur Nederlandse Gemeenten, 2017). The data quality assessment has shown that both cases can be qualified as open municipal data initiatives. Some judicial risk followed from analyzing the notification data-set, because there is a free entry field in the notification form where citizens may provide personal information. This means that privacy violation is possible. However the risk was not perceived as big. There is strong endorsement by BZK and VNG for WIMS, but since there are no obligations and half of the municipalities did not supply data in initiatives, this factor is not perceived as problematic for case interpretation. Open State Foundation and Civity as different kind of infomediaries, but there is no implication that municipalities portray the two infomediaries in an essentially different way.

Table 4.3: Case study parameter descriptions

Parameter group	**Parameter**	**Case 1: WIMS**	**Case 2: SLIM**
OGD type	Release responsibility	Polling Stations, considered by VNG to put on HVD list	Object data and Notification data, on HVD list
	Intended data quality achievement in initiative	All criteria Open data fit	All criteria Open data fit for notification data
	Judicial Risk	None	Minimal
Municipality	Size municipality	Amount of polling stations does not provide explanations for partaking or not partaking of municipalities	No significant influence
	Open data adoption municipality	Included in perception analysis	Included in perception analysis
Initiative	What kind of infomediary	NGO; included in perception analysis	Private sector; included in perception analysis
	Endorsed by additional influential player	Strongly: VNG, BZK , included in perception analysis	Weak, included in perception analysis

The assessment of case parameters allow to conclude that both initiatives fit the conditions of an municipality level open data initiative. In this section it was shown that there are some key differences between cases, but the differences, we argue, do not have implication for the research strategy. Nonetheless, these characteristics are taken into account while analyzing stakeholder perceptions on tasks, values, barriers and success factors.

4.4.2 Citizen perceptions in initiatives

The citizen perceptions in the initiatives WIMS and SLIM are extracted from information sources by analyzing data and looking for indirect citizen perceptions mentioned by stakeholders.

WIMS; synthesis of the citizen perception

First, the success of WIMS in terms of citizen use was analyzed by analyzing websites. During TK17, the website `www.waarismijnstemlokaal.nl` was not yet online. The publication of polling stations occurred on the website of OSF. For the following three elections, the website of WIMS was created. The data on website metrics in table 4.4 were extracted using Google Analytics with admin access at OSF.

Table 4.4: WIMS website metrics for election rounds; website metrics retrieved from Google Analytics

	TK17	**GR18**	**PS19**	**EP19**
Date	Mar 2017	Mar 2018	Mar 2019	May 2019
Voter turnout (%)	81.9	55	56.2	41.8
Voter turnout previous election round (%)	74.6	54	47.8	37.3
Voter turnout increase (%)	7.3	1	8.4	4.5
Visits on web-page on election day and day before	431821	102048	164488	80131
Average time spent on website per visit (s)	28	25	39	47
Average visited pages per visit	1.2	2.84	1.52	1.51
% Visits linked from social media	93.9	87.2	46.9	1.8
% Visits linked from other websites	0.4	6.9	37	53.7

In the table can be found that each election round during which the initiative WIMS was implemented, the voter turnout was higher then the previous election round. It is impossible within the scope of this research, but probably even essentially unlikely to be able to assess whether WIMS has influenced the voter turnout. The reason for this is that there are much more imaginable contributing factors to voter turnout. Therefore, we will refrain from implying that there is a causal relationship. However, the voter turnout does imply that different elections have had different liveliness among citizens. This has implications for the website metrics. Historically, the voter turnout of general elections of the parliament (TK) is much higher than local, provincial or European Parliament elections.

As can be extracted in table 4.4, the first time of WIMS, 400.000 unique visits occurred on the day of and the day before election day. Over 90% of the visits were linked via social media, mostly via Facebook, because Facebook informed all Dutch users on election day that there were elections in user time-lines and with one click of a button a Facebook user could was located to the website with polling station data. For the other elections, the amount of visits where still high but less then the first time. This could probably be attributed to the fact that citizens generally care more about general elections. For the metrics can be seen that the visits for PS19 were higher then for GR18, which is remarkable, since generally citizens voted more in GR18. However, in comparison with GR18, during PS19 way more websites had links to the website of WIMS, which can be seen by the rise in percentage of 'linked via other websites'. Especially referrals from news-websites could have explained the rise in visits for PS19. For EP19, Facebook did not notify its users anymore, which might explain the drop in visits. However, since EP19 was only a couple of months after after PS19, there might have been a decrease in information need on polling stations, since people already voted a month before.

Due to limited time and capabilities of Google Analytics it is not possible to answer concrete questions on how citizens have perceived WIMS. However, in each election round, visitors remained on the website for 25 seconds and half of the people visited multiple pages (average pages per visit was approximately 1.5 at minimum). The exception for this was TK17, but then, possibly attributed to the fact that the initiative back than was not as mature as it was on the website of WIMS. If citizens have stayed on the page for 25 seconds, there must have been some visibility of elections or searching for polling station information.

Although the analytics only show an increased amount of visits from devices in the Amsterdam area, for the places from located visits were distributed. Additional demographic data is not available in the website analytics.

Using the analytics as far as they are available, the citizen perception is that linkage via both social media and news websites helps citizens to find the website on polling stations. Even though it is unclear whether people have actually voted (moreover, that otherwise would not have voted), the analytics show that people generally explore the website, move around and retrieve information. Additional methods are needed to extract additional citizen perception information out of website analytics, there will be more about this in section 6.4.1.

Additional ideas about citizen perceptions are indirectly extracted via interviewees with stakeholders. First, all interviewees seem to agree that the target group of WIMS are citizens that navigate through various online channels, mostly youngsters. Typically, the voter turnout on young people is low, and with this kind of reasoning the infomediary project leader at OSF highlights the necessity of WIMS. Various partaking executive municipal agents agree, yet some argue that digital citizen informing on polling stations needs to be an addition to offline

informing, in older to reach elderly people. For various representatives of non-partaking municipalities, the citizens in their municipalities, mostly elderly and conservative people, do not need WIMS.

> *"We only want to transition digitally to certain extent, because many elderly citizens in our municipality do not tag along with digitization"*

Representative Non-partaking municipality WIMS

Secondly, according to various municipalities, the information on polling stations is exceptionally relevant for voters that commute on election day; these voters have to fit voting in tight schedules. Moreover, more and more voters expect advanced, user-friendly information about processes such as voting in visual tools, according to one representative of a partaking municipality.

SLIM: synthesis of the citizen perception

As for SLIM, it is evident that not all citizens do notifications when a disturbance in public space is noted. However, all municipalities who have implemented SLIM Melden or alternative notification systems have seen a great rise in notifications. Representatives of the municipalities of Velsen and Stichste Vecht have mentioned that they have seen the amount of civic notifications double.

To see what people vote on, the data for the municipality of Utrecht was analyzed. The data was retrieved from WistUData (2019). In figure 4.4 the 20 most notified categories in Utrecht were given. It can be seen that most of the notifications were made about garbage.

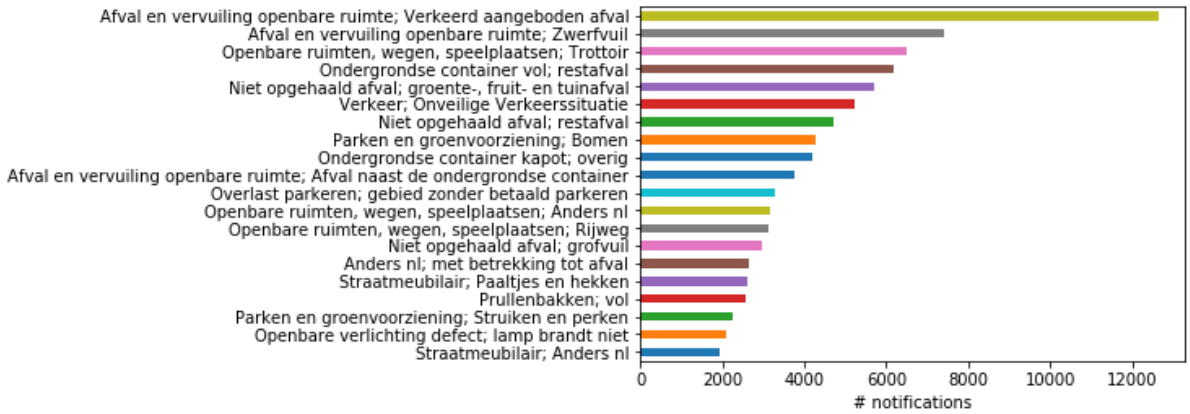


Figure 4.4: Top 20 categories notified disturbances in public space with SLIM Melden in the municipality of Utrecht

The rise in notifications implies that increased user-friendliness of the notification procedure has made citizens more willing to do notifications. In (Verdonk, 2019), the procedure of doing a notification is described. The author describes how he easily has located the procedure to do a notification via SLIM Melden via a search on his computer. He also describes how difficult it was in a municipality without SLIM Melden. The only pain that is described in the application is the lack of response about what has been done in order to fix the disturbance.

> *"I just had to press the button 'notify this as well'...[...]... But months later the notification is still open, even though the light in the lamp posts has been fixed for a long time."*

Notifying Citizen, as described in news-article

This perception of citizens is endorsed by several interviewee perceptions. According to the information commissioner - for whom the primary job is to coordinate municipal open data initiatives in correspondence with citizen needs - the lack of feedback is one of the biggest challenges in winning trust of citizens. Also the

executive of SLIM municipality Velsen has experience with providing feedback to citizens and highlights that citizens get frustrated when they hear nothing after a notification. According to the experience of the non-partaking municipality of Stichste Vecht, culture is a very important aspect. In discussions with representatives of municipalities in the north of the countries, he heard that providing feedback is not part of the handling procedure. According to him, this has cultural explanations.

4.4.3 Stakeholder perceptions on value

Perceived values of stakeholders in the initiatives were extracted from information resources by identifying perceived benefits and probable disadvantages of partaking in both open data initiatives. The values have been categorized alongside the three categories of benefits as identified in section 2.3.1: social/political, operational/tactical and economic value. For each identified factor, it was valuated whether an effect was acknowledged by the stakeholder. In other words, when identified as a contributing value, did the stakeholder acknowledge that the factor was a true benefit or drawback as well. If acknowledged, the assessment was made whether the effect was perceived as weak or strong. The results on perceived benefits have been visualized in tables for both initiatives in table 4.5 and 4.6. The default of values were benefits. Disadvantages were inversely visualized, in dark cells with white text. Acknowledged benefits without perceived significant effects were visualized in yellow. Weak and strong benefits were visualized in light and dark green, respectively. Similarly, weak and strong disadvantages were visualized in soft and bright red.

In both SLIM and WIMS, social/political and operational/tactical benefits were identified. No perception on identified economic benefits has been extracted. In one interview, saving costs by operational efficiency of the municipality was framed as an economic benefit, but after consideration, the stakeholder himself identified that this effect strongly fits the operational/tactical category. Similarly, in one interview a perceived economic effect was that external usage of data could potentially generate economic gains. However, in asking what kind of re-users would be able to gain economically from the initiative, it became evident that mostly societal interest groups would re-use the data. This allowed to attribute this effect to the social/political category. In the next paragraphs the perceived values can be viewed in the tables and the way the factors contribute to value is described.

Table 4.5: Stakeholder value perceptions for WIMS; mentioning, acknowledgement and perceived effect of values

Value	**Benefit**	**Factor**	**Infomediary**	**Partaking municipality**		**N-p mun.**
			Project leader WIMS	*Executive Officer*	*Information Officer*	*Various*
Social political	Participation	Increased voter turnout				
		Potentially reaching people that usually do not vote				
		Improved information about polling stations				
		Increased visibility elections				
		The WIMS standard substituted a better self-developed method				
		Focus on WIMS potentially excludes older voters				
	Accountability / Transparency	Makes it easier for citizens to request information				
		Societal evaluation of polling station policy				
		Potential future research				
		Visible transparency due to digital transition adoption				
Operational Tactical	Procurement	Procurement in Citizen Informing				
		Increased spreaded distribution of voters due to WIMS makes it harder to distribute staiton personnel				
	Data Quality control	Data quality control				
	Data-driven policy making	Data-driven policy making				
		Bench-marking between municipalities				

T Factor mentioned as negative value

Factor acknowlegded as strong negative value

Factor acknowlegded as significant negative value

Factor acknowlegded as possible contributing to value, not perceived as significant

T Factor mentioned as positive value

Factor acknowlegded as stong positive value

Factor acknowlegded as significant positive value

Factor not mentioned

Table 4.6: Stakeholder value perceptions for SLIM; mentioning, acknowledgement and perceived effect of values

Value	**Benefit**	**Factor**	**Infomediary**	**Partaking municipality**		**N-p mun.**
			Project leader SLIM	*Executive Officer*	*Information Officer*	*Contact center*
Social political	Participation	On site notification				
		Make notification based on Geo-information				
		Facilitates identifying object for notification				
	Responsive Governance	It is easier to give feedback to citizens				
	Accountability / Transparency	Increases citizen trust				
		External reuse increases accountability				
Operational Tactical	Procurement	Easy mobilization of relevant maintenance services				
		It is easier to educate new workers				
	Data-driven policy making	Data-driven policy making				
		Bench-marking between municipalities				
	Data Quality control	App incentives data quality				
	Citizen sourcing	Quick awareness of disturbances at municipality				
		More notifications is more work				

T Factor mentioned as negative value

Factor acknowlegded as strong negative value

Factor acknowlegded as significant negative value

Factor acknowlegded as possible contributing to value, not perceived as significant

T Factor mentioned as positive value

Factor acknowlegded as stong positive value

Factor acknowlegded as significant positive value

Factor not mentioned

WIMS; social/political benefits

IN WIMS, perceived social/political benefits were extracted on the levels of participation and accountability/transparency.

> *"We need to move to the digital space in informing on polling stations, because that is where not votin youngsters typically are located"*
>
> Project leader WIMS, Open State Foundation"

Participation benefits were characterized by presumed effects of the alteration of informing about polling stations on the elections. Stakeholders perceived the way that WIMS has affected elections in a slightly different way. Directly increasing voting turnout as a result of WIMS was not acknowledged by any stakeholder. As can be found in table 4.4, each election where WIMS was implemented an increase in voter turnout was observed compared to the precious round. However, it is impossible to attribute this effect on voter turnout to WIMS. All stakeholders involved in WIMS acknowledged this, however all has some view on how WIMS could potentially influence voter turnout.

> *"No way that people who did not vote before, now all of a sudden have voted, because of WIMD"*
>
> Geo-information officer, Municipality of Eindhoven

For example, the executive officer and project-leader of WIMS at OSF mentioned that WIMS potentially reaches people that usually do not vote. For both of them, WIMS has an effect on reaching youngster that typically are present on online spaces. Furthermore, the information about polling stations, like location, accessibility and opening hours is perceived as a benefit for influencing elections. The project leader OSF highlighted the excessive informing in WIMS as the main benefit. However, the partaking municipal officers differed in their perception and only view this effect as a benefit with limited value. The executive officer as the municipality of Eindhoven said in the interview that location is the one and only relevant information. People need to know where to vote. This may help people that want to vote while commuting, and helps people vote that struggle to fit voting in their daily routine.

For the GEO-information officer at the municipality of Eindhoven, WIMS did not make people vote who otherwise wouldn't. She showed an perceived disadvantage of WIMS that was acknowledged by the project leader of OSF: the initiative of WIMS caused a previous application of information about polling station to be taken offline. According to the managing architect of the platform, the information officer, the citizens of Eindhoven have had worse information, since the previous application was more extensive and user friendly. She could imagine that people with specific disabilities would search on the internet for WIMS and would benefit of using it. Despite the difference in opinion about the effects between the two coworkers of the municipality of Eindhoven, the executive officer convinced the organization to take over the WIMS standard. The Communication office agreed with him, rather than the GEO-information officer. Non partaking municipalities generally did not agree on additional value for improving procedures concerning elections. They felt like people already know where to vote. Some even argued that focusing on digital channels in election informing might exclude the elderly who typically do not have internet. This sentiment is acknowledged by the executive in Eindhoven, but he argued that informing should occur both offline and online. The increased visibility of the elections was not acknowledged or mentioned by municipal officers as an additional value. Only the project leader at Open State Foundation mentioned this as a strong benefit. The website metrics as described in table 4.4 show that hundreds of thousands of visits occurred on election day. People have spent half a minute on the website, which means that people actually have taken considerable amount of time to take in contents of the website. These metrics are only available for the project leader of WIMS, so this probably made him conclude this.

Accountability and transparency benefits were identified by stakeholders as well as a value by social political benefits. Digital adoption of governments shows that governments are innovating, they are participating in trends

and this has a positive effect on how governments are perceived, according to the project leader WIMS at OSF and the executive of municipality of Eindhoven. The GEO-information officer understands that polling stations are a suitable case for national standardized data-sets, since it is low hanging fruit. There is a symbolic value to showing that nationwide municipal data can be standardized, visualized and released on a central platform. Furthermore, the executive officer at the municipality of Eindhoven mentions that WIMS has made procedures concerning information requests easier. In his daily work, he saw information requests about not only polling stations but linked voting results on the polling station level, made easier for citizens by WIMS. Lastly, external usage of the raw data has made municipal policies concerning polling stations more transparent. In data analyses by several reusing journalist infomediaries, municipalities can be hold accountable for certain policies, as can be read in articles like van de Reep and Linnekamp (2019).

> *"I think that nowadays, citizens expect initiatives like WIMS, where they can obtain voting information and extract additional information in an easy and user-friendly manner"*
>
> Public Affairs officer, Municipality of Eindhoven

WIMS; operational/tactical benefits

Value had been created in WIMS on the operational/tactical category by benefits of procurement, data quality control and data-driven policy making.

Procurement benefits are shown in improvements of the process of citizen informing by external (that is, by OSF) development of a visualization tool. The main reason why citizen informing has been improved is that the central visualization is embeddable in municipal websites. According to project leader WIMS at OSF, procurement benefits are mainly for those municipalities that do not have the internal capabilities to develop such a tool themselves. As shown before, in municipalities that do have such internal skills, like at the GEO-information department of the municipality of Eindhoven there seems to be a loss of value by the procurement procedure.

> *"The citizens of Eindhoven are worse off with the initiative of WIMS."*
>
> Geo-information officer, Municipality of Eindhoven

Non partaking municipalities generally have not mentioned any probable benefits that might have tempted them to partake. However, there was a clear sentiment among various non-partaking municipalities that providing the ability to voters to vote where ever they want, makes is hard to manage the voter distribution among stations. This is acknowledged by the execute officer of election for the municipality of Eindhoven, but is not perceived a legitimate argument not to partake in WIMS: it is more important that citizens are allowed the opportunity to vote where they want.

> About alleged operational difficulty in managing polling station personnel due to WIMS: *"That could be, but does not matter, you need to do as much as possible in order to stimulate people to get out and vote"*
>
> Public Affairs officer, Municipality of Eindhoven

Data quality control is a perceived small benefit of OSF and the Eindhoven executive because the data are validated by being visualized in the tool. It is easier to identify an error on the map. Furthermore, using the Registration standard Addresses and Buildings, *Basisregistratie Adressen en Gebouwen* (BAG)-id, there is an automated check whether the ID exists. It helps to improve data accuracy. These benefits are not mentioned by

any municipal stakeholder.

Data-driven policy making Project leader WIMS at OSF mentioned in the interview that sometimes the data on polling stations were used as the source material in the partaking municipalities. This value is not portrayed as a very big benefit by him, but both stakeholders in the municipality of Eindhoven acknowledge the fact that data are improving policy making by municipalities. The executive administrator mentioned that the data are used internally to execute additional processes besides the communication and information towards citizens. First, the data help to handle information requests. As mentioned before in the part about social political benefits, a lot citizen perform information requests on polling stations and particularly on station level election results. These requests are processed by himself, and in his perception the procedure is made easier due to the WIMS Standard. Especially on the level of identifying the station in combination with the results document, WIMS has provided assistance. For the GEO-information coworker, the benefits lies in the standardization on the national scale. This makes information exchange and the identification of benchmarks in policy making between municipalities easier.

SLIM; social/political benefits

IN SLIM, perceived social/political benefits were extracted from information sources on the levels of participation, responsive governance and accountability & transparency.

Participation is clearly a value that is perceived by stakeholders in the WIMS case. Citizens are encouraged to make notifications when they perceive a disturbance in public space. The process has been made easier by both SLIM Melden and Fixi. On site notification is made possible by the application for smart phones and the location identifying element in both apps makes doing notification as they are noticed. All stakeholders perceive this as an important social political benefit and have seen the amount of notifications double since the apps have been implemented in the municipal notifications procedure.

> *"The value of SLIM Melden lies in the fact that my neighbor now also is able to make notifications"*
>
> Information commissioner, Municipality of Utrecht

Using object data in SLIM Melden to help citizens identify the object they want to make a notification on, like lamp posts or garbage sites, was a very important feature for the interviewees of the municipalities of Utrecht and Velsen to choose SLIM Melden in the procedures of auction (Dutch: *aanbesteding*). In previous procedures before SLIM Melden it was very complex to describe the notifications and according to all interviewees this was a big hurdle for citizens to partake. The executive of the municipality of Stichtse Vecht did not see added value in using object data. According to him, the citizens in his municipality typically would prefer to describe locations using familiar indicators instead of doing a click. He also attributes the perception that object data do not fit his municipality to the fact that notification there are mostly water related and not object related, because Stichste Vecht is a municipality with a lot of water related incidents.

> *"You can see that people here prefer to describe locations like 'accros the street of the bakery' and notifications here are typically water-related and not object-related. "*
>
> Customercontact quality service, Municipality of Stichtse Vecht

In both SLIM Melden and Fixi, notifications are published in the application in order to make notifying citizens aware of already existing notifications. In this way, citizens can decide to not make the notification while knowing that the municipality is already handling the disturbance.

Responsive governance is most important for the information commissioner of the municipality of Utrecht. For him, one of the great benefits of SLIM Melden is that the process of getting back to citizens about their notification is made easier. According to him, social/political benefits occur when citizens feel like they are being

heard and when they have the idea that someone within the municipal organization really took some time to handle the notification. He also noted that this is still a thing that needs to be improved in Utrecht. Similarly, the maintenance public works officer at the municipality that a great deal can be achieved when these procedures are better. For this reason they are working together with Civity to implement a back-office application integrated with SLIM Melden that improves this process. The coworker of the municipality of Stichtse Vecht has named the feedback element in the notification procedure as the most labour-intensive element of the notification handling procedure.

Accountability and transparency benefits were perceived to be achieved by citizen trust according to the information commissioner. Also, according to the project leader at Civity, releasing the data on notifications automatically allows external re-users to establish accountability mechanisms, as can be read in a local newspaper article (De DataDUICers, 2017). The executive officer at the municipality of Velsen does not see external usage very possible, except maybe for academic purposes as he figures that the interviewer probably uses the data as well. This perception is shared by the information commissioner of Utrecht, the external reuse of the data is still poor. The notifications in Fixi are not released as open data.

SLIM; operational/tactical benefits

Operational benefits were identified in interviews on the levels of procurement, data-driven policy making, data quality control and citizen sourcing benefits.

Procurement benefits are evident for SLIM Melden. The executive of Stichtse vecht has mentioned that Fixi has not altered the back-office procedures. The procurement benefit that was identified during the interview is that notifications were automatically linked to archive systems. For the executive of the municipality of Velsen, the integration of notifications into back-office procedures shows how SLIM Melden has altered the front and back-end of public space disturbance notifications. According to its information commissioner, the municipality of Utrecht has not seen its procedures change much when SLIM Melden was implemented.

The process of *data quality control* in SLIM Melden is improved as well. First, the application only works when the object data are loaded correctly. This means that high quality data is continuously assured because it became an essential condition for the process of notification operation as a whole. Whereas in the past, data quality control only periodically occurred when the object data were used for a specific purpose. Another incentive for high quality object data is that Civity directly brands its services by a working application. The information commissioner of Utrecht said that Civity would not allow a malfunctioning application, because notifying individuals would attribute the errors to Civity. In other words, because Civity leases its name to SLIM Melden, there is an additional motivation to uphold data quality.

Besides, the submit form for notification is standardized in a way that release of high quality open data on notification themselves is fully integrated in the process. This means that management information can be extracted easily from SLIM Melden, which has implications for policy making.

Data-driven policy making: implementing procedural adjustments based on management information from notification data was one of the critical factors that made the municipality of Velsen choose SLIM Melden. By learning from data what topics are subject of citizen notifications, prioritizing can occur in maintenance services. Furthermore, the user-friendliness of SLIM Melden can be improved using data analysis.

> *"We found it crucially important to obtain management information from the notification data"*
>
> Executive public work maintenance, Municipality of Velsen

To illustrate these two benefits, the example was given about overfull underground garbage containers. This turned out to be the most notified disturbance. Not only does the municipality prioritize garbage services in maintenance mobilization, when citizen click to make a notification, the category 'overfull' underground container

rises at the top of the topic list. This shows that data-driven policy making occurs in both front- and back-end processes. From the interview with the representative from the non-partaking municipality, the data-driven policy making aspect was less evident.

Besides, learning strategies between municipalities and determining benchmarks are facilitated by SLIM Melden, according to the infomediary. However, in order for this benefit to live up to its potential, cross-municipal uniform notification standards are needed. This is not the case, so this benefit is qualified to as a weak advantage.

The differentiating aspect of value creation in terms of operational tactical benefits in the SLIM case is the operational benefit of *citizen sourcing*. In its simplest form it means that knowledge and capabilities of citizens replace a primary municipal task. In other words, no longer disturbance patrol services are needed, as the citizens notify the municipality in case of a disturbance. Municipalities are easier and quicker aware of disturbances by holding notifying citizens everywhere in the field via mobile applications. In both applications SLIM Melden and Fixi this benefit is acknowledged, yet not everyone within the municipal organizations perceives this as a benefit, mainly because SLIM has resulted in more notifications. Besides, the essential feedback element of getting back to citizens about their notification is more work. The 'people in the field' generally do not perceive this benefit as highly beneficial. According to the project leader of SLIM at Civity, in the new process there is probably not a net-gain of amount of work. More likely is that more notifications are processed more efficiently.

4.4.4 Stakeholder perceptions on barriers and success factors

In this section, perceptions on barriers and success factors are given for WIMS. Alongside the seven categories for barriers and success factors as identified in the literature review (see section 2.4.2), the data were analyzed. These categories were: Information Quality, Institutional structure, Legislation, Task Complexity, Technicalities, Use and participation and Evaluation. In analyzing quotes, three kinds of lines of reasoning were identified. Each kind of reasoning identified a different perspective.

- *Initiative success factors.* Partaking municipalities and infomediaries have identified initiative success factors along the seven categories. These factors explain in their eyes what features of the initiative have made partaking in the initiatives a success. These factors were identified as initiative success factors.
- *Barriers.* Barriers were identified by analyzing quotes of the infomediaries, representatives of partaking municipalities and stakeholders from municipalities that did not partake in the initiative. For barriers, the distinction is made between perceived barriers where indication exists for how to overcome these barriers and perceived barriers that are more structural.
  - *Structural barriers.* These factors were identified by analyzing the case data for mentioned barriers without suggested solutions. It is important to identify barriers where stakeholders do not have solutions in mind. These factors allow to point out the critical barriers for partaking in the initiatives.
  - *Surmountable barriers with corresponding suggested solutions.* In some quotes, barrier and presumed solutions for these barriers alongside the seven categories could have been identified. These factors allow to analyze in what category of success factors stakeholders seek solutions.

WIMS; initiative success factors

The success of WIMS according to stakeholders is attributed to factors and features as described in table 4.7. Alongside the seven categories of barriers and success, factors were categorized using quotes of the project leader WIMS at OSF and the executive on election procedures of the partaking municipality of Eindhoven. The Geo-information officer of Eindhoven has not explicitly identified specific success factors. She was not as concerned with WIMS as her colleague, so this may have caused this effect.

Success factors categorized on *Information quality* had to do with a positive perception of the developed data-standard. The integration with the existing standard of BAG makes future data linkage easier. Furthermore, the standard was easily adoptable for the municipality as source material for additional municipal procedures, such as the allocation of polling station personnel. In *Institutional structure* the infomediary stakeholder identified the endorsement of BZK and VNG as contributing factors. For the coworker of Eindhoven, the internal support by the communication department and the the fact that the initiative was aligned with the focus on the citizen

perception in municipal policies, had made WIMS successful in Eindhoven. Moreover, according to him increased user perspective in *legislation* helped the decision to partake in WIMS. The availability of a help-desk at OSF and various data-delivery features developed by OSF reduced *task complexity*. Various support tools in the category of *technicalities*, like system interactions, municipality-friendly crowd-sourced data delivery forms, data-platforms not only made it easier to partake, but also increased the embedding of WIMS data in the municipal organization. From the municipal perspective, the reuse of and sharing of WIMS data by political parties and interest-groups was identified as a success factor for *use and participation*. The infomediary expanded upon the notion of sharing and reuse by highlighting that WIMS was partly so successful because of the active sharing of WIMS by Facebook and various news websites.

Table 4.7: Perceived initiative success factors for WIMS

Success factor	**Infomediary; project leader WIMS at OSF**	**Partaking municipality; Executive**
Information Quality	Availability of standard Adoption data-set as source material Integration with data-standards (BAG)	Source material Linkage to additional administration systems
Institutional structure	Endorsement VNG Information provision by BZK Identification of open data 'believers' in municipal organization	Support at communication department Focus on citizen policies Internal adoption open data policy
Legislation		Increased focus on data-usage in legislation (Woo)
Task complexity	User-friendly data-delivery Pre-filling data from previous collection round Notifications on successful data delivery	Infomediary help-desk for data delivery
Technicalities	Crowd-souring data delivery Availability platform for data maintenance Filter features to increase user-friendliness	Integration with information request procedures
Use and participation	Visual tool for finding polling stations Visible sharing by media Notification WIMS at Facebook	Reuse by political parties Reuse by interest groups
Evaluation	Monitoring reuse Monitoring municipal partaking Monitoring feedback on standard Election 'wave' created momentum	Pressure on municipalities to partake increased while more partook

Table 4.8: WIMS; Stakeholder quotes related to perceived barriers; structural barriers and barriers with suggested solutions

Related to barriers on category:	**As mentioned by**	**# Quotes indicating structural barriers**	**# Quotes indicating surmountable barriers by suggested solutions on category:**							***Total quotes***
			Information Quality	*Institutional structure*	*Legislation*	*Task complexity*	*Technicalities*	*Use and participation*	*Evaluation*	
Information Quality	Infomediary		1	1						***2***
	Non partaking municipality	2								***2***
	Partaking municipality; Executive	1					1			***2***
	Partaking municipality; Information	1		2						***3***
	Subtotal	4	1	3			1			***9***
Institutional structure	Infomediary	5								***5***
	Non partaking municipality	4								***4***
	Partaking municipality; Executive	2	1	1					1	***5***
	Partaking municipality; Information	3								***3***
	Subtotal	14	1	1						***16***
Legislation	Infomediary	1								***1***
	Non partaking municipality									
	Partaking municipality; Executive			1						***1***
	Partaking municipality; Information									
	Subtotal	1		1						***2***
Task Complexity	Infomediary		1	2		2	3			***8***
	Non partaking municipality	1		1						***2***
	Partaking municipality; Executive	1	2				5			***8***
	Partaking municipality; Information									
	Subtotal	2	3	3		2	8			***18***
Technicalities	Infomediary	2								***2***
	Non partaking municipality				1					***1***
	Partaking municipality; Executive	1								***1***
	Partaking municipality; Information									
	Subtotal	3			1					***4***
Use and participation	Infomediary			1						***2***
	Non partaking municipality	1								***1***
	Partaking municipality; Executive		3				1			***4***
	Partaking municipality; Information									
	Subtotal	1	3	1			1			***6***
Evaluation	Infomediary	3								***3***
	Non partaking municipality	2								***2***
	Partaking municipality; Executive									
	Partaking municipality; Information									
	Subtotal	5								***5***
Grand Total		***30***	***8***	***9***	***1***	***2***	***10***		***1***	***61***

WIMS; structural barriers

In table 4.8 an overview is given of barriers and if any, suggested possible solutions on the different categories as well, as mentioned by stakeholders. In this section the structural barriers for WIMS are explained.

Analyzing the information sources has led to identify that structural barriers to partake in WIMS mainly manifest on perceived hurdles in *institutional structure*. The infomediary perceived structural barriers in unclear responsibility and accessibility of the responsible individual in municipal organizations for requesting the data. It remains unclear who, and furthermore, how the person is reached. Often e-mails go to general municipal e-mail-addresses and then the request is lost. Furthermore, according to the infomediary there is a lack of open data expertise in municipal organizations and therefore OSF had to take this role. Additionally, supra-municipal organizations like VNG and BZK do not take a proactive role in timely informing municipalities about data-initiatives and do not want to make initiatives mandatory, which makes municipalities lack to deliver.

> *"The biggest hurdle is definitely to find the person in the municipal organization who is responsible for delivering data"*
>
> Project leader WIMS, Open State Foundation

Structural barriers for the partaking municipality manifest in the perception that as an early-adopter, advanced data-adoption standards get cancelled because of a national standard. Not only does the implementation of a data-standard costs time and money, the already implemented standard might simply be better in some ways. There is a sense of autonomy at these specialist municipal organizations, which forms a barrier to be overcome when initiatives like WIMS have to succeed. Additionally, some partaking municipalities share the idea that the timely communication of the standard by VNG was a barrier to deliver data in-time.

> *"The problem with standards is that the costs precede the benefits"*
>
> Geo-information officer, Municipality of Eindhoven

For non-partaking municipalities some institutional barriers were presumably to strong to partake. There are a lot of differences in structure of municipalities which are not taken into account in WIMS. Some municipalities only have a handful of polling stations, whereas others have hundreds. The size of the municipality and the Besides, in local elections in Amsterdam and Rotterdam, there were sub-local elections alongside local elections. This feature makes those elections complex and makes a national polling station standard that encourages voters to vote where they want, undesirable because of specific local institutional structure.

Structural barriers were perceived on the level of *evaluation* by the infomediary and non-partaking municipalities. The non-partaking municipalities highlighted the difficulty to assess whether citizens actually need WIMS. Several were not convinced that voter turnout has increased. In some municipalities there are no assessments of citizen needs, which makes the executive data suppliers unwilling to partake.

> *"It is difficult to shape policies according to the needs of citizens, if you do not know what citizens want"*
>
> Representative Non-partaking municipality WIMS

The infomediary has highlighted that it remains a black-box why municipalities do not partake. Therefore, it is hard to say what needs to be done in order to convince municipalities to partake. Furthermore, the citizen perception is difficult to assess, which makes is hard to optimize user-friendliness of WIMS.

Structural barriers on *information quality* were perceived by municipalities and manifested in the idea that the developed standard was insufficient. Especially the Geo-information officer of the partaking municipality of Eindhoven perceived the standard as a derivative of their self-developed standard. Additionally, according to various non-partaking municipality, there was a mismatch between location parameters of the WIMS-standard and standards used in municipal services. According to a partaking municipality the BAG data is inaccurate .

The rest of the categories were to a lesser extent identified as reasons for perceived structural barriers. Some of the identified structural barriers were on the intersection of *technicalities* and *task complexities*, such as a long upload-time and unclear technical concepts.

WIMS; overcoming barriers with suggested solutions

Whereas some barriers were mentioned somewhat isolated for preferred solutions, in some lines of reasoning stakeholders had preferred suggested solutions. These were identified as perceived surmountable barriers. However, the perception on the way that theses barriers could be overcome, differed between stakeholders. Barriers generally are perceived to be able to be surmounted by solutions on information quality, institutional structure, task complexity, technicalities.

Barriers that are perceived to be overcome by solutions on *information quality* have to do with further development of the standard. According to municipal workers the use and participation could be improved by adding data to the standards, like a photo of the front-door of the polling station. On the other hand, the task complexity could be reduced by using the government used standards rather that BAG. Furthermore, the description and explanations of parameter in the standard should be clarified. The infomediary agrees to the latter statement in one quote and also acknowledged that BAG has its limitations, like the fact that sometimes a building doen not have a BAG-id.

> *"We use XY all the time, and then all of a sudden the BAG-id needs to be added. And I do not understand why they (OSF) can not extract those data from the coordinates."*
>
> Representative Non-partaking municipality WIMS

According to the infomediary, a lot can be achieved by alterations in *institutional structure*. Summarizing it can be extracted that in his perspective, initiatives like WIMS could be made mandatory for municipalities to partake. A strong central institution should have the power and the mandate to develop well balanced mandatory standards. In this way, priority will be given to open data within municipalities and they will recruit data specialists. No longer do municipal organization publish in completely different formats.

> *"You can see that municipalities always lack to deliver data, because it is not a mandatory thing"*
>
> Project leader WIMS, Open State Foundation

The partaking executive at the municipality of Eindhoven agrees to certain extent, but only sees clear responsibilities within the municipal organization as a solution on the category of institutional reorganization. The Geo-information perceives that data standards and information quality could be improved by establishing balanced institutional structure in developing standards, where consultation of data experts at the municipal level is essential.

> *"If the VNG would have asked, I would have consulted them on the standard"*
>
> Geo-information officer, Municipality of Eindhoven

Solutions on reduced *task complexity* manifest in supporting civil servants in delivering data. Only the infomediary has mentioned that barriers can be overcome in this way. By validation mechanism in the crowd-source platform, software-support of both commas and points as delimiters, the task can be made easier for municipalities.

On the contrary, municipalities see solutions for barriers on task complexity to the greatest extent in advanced *technicalities*. Questions have been raised why a BAG-id does not automatically extract all additional data like

location parameters. Moreover, some argue that the release of addresses of polling stations should be technically sufficient information to automatically, algorithm-like generate the data to develop WIMS. Multiple partaking municipalities have indicated that they would have expected WIMS to be generated in a technical matter and do not see why the an extensive crowd-source Excel file is needed to be uploaded.

SLIM; initiative success factors

In SLIM Melden, the infomediary and both information commissioner and executive at the partaking municipalities have identified contributing factors to the success of SLIM.

The extensive municipality shaped standard of the notification procedure yields high *information quality* of notifications. Secondly, Furthermore, SLIM incentives continuous data quality of objects, because otherwise the app will not function properly. Additionally, additional data on objects like specifications of components, allows executive maintainers to fix disturbances efficiently. As for, *institutional structure*, the presence of notification data on the high value data list was identified as a reason to optimize the process of notifications. Additionally, management and support for open data implementation in procedures encouraged municipalities to partake. Being able to easily educate new workers using the extensive information in SLIM Melden and being able to conduct trials and pilots were identified as means how *task complexity* was reduced in SLIM. The *technical* integration of different systems in the design of SLIM and different *evaluation* success factors to develop learning strategies of the impact and success of SLIM were identified as additional success factors.

Table 4.9: Perceived initiative success factors for SLIM

Success factor	**Infomediary**	**Partaking municipality; Executive**	**Partaking municipality; Information**
Information Quality	Standardization of notification data Availability of object-data Object data validation by visualization in app	Absence of the 'other' category of notification subject Meta-data on objects available Standardization based on existing categorization	
Institutional structure	High value data list as endorsement Identifying open data 'believers' in municipal organization	Political priority for public nuisance Local political parties in municipal administration Space for discretionary policy execution	Collaboration with BZK Data believe in administrative and political executives
Legislation			
Task complexity		Using data to train new workers	Space for pilots & trial and errors Data science training
Technicalities	Technical linkage front-end and back-end notification handling procedure	Integration SLIM with existing data administration Automated mobilization of notification relevant municipal services	
Use and participation		Accessibility to citizens Being able to make an anonymous notification	User-friendliness User focused initiative Feedback encourages participation
Evaluation	Infomediary feedback on standard	Historical notification data	User ratings Collaboration with other municipalities

Table 4.10: SLIM; Stakeholder quotes related to perceived barriers; structural barriers and barriers with suggested solutions

Related to barriers on category:	**As mentioned by**	**# Quotes indicating structural barriers**	**# Quotes indicating surmountable barriers by suggested solutions on category:**							***Total quotes***
			Information Quality	*Institutional structure*	*Legislation*	*Task complexity*	*Technicalities*	*Use and participation*	*Evaluation*	
Information Quality	Infomediary	1								***1***
	Non partaking municipality	3			1					***4***
	Partaking municipality; Executive									
	Partaking municipality; Information	2		1						***3***
	Subtotal	6		1	1					***8***
Institutional structure	Infomediary	3								***3***
	Non partaking municipality	3								***3***
	Partaking municipality; Executive	1					1			***2***
	Partaking municipality; Information	1								***1***
	Subtotal	8					1			***9***
Legislation	Infomediary						1			***1***
	Non partaking municipality	1					1			***2***
	Partaking municipality; Executive	1					2			***3***
	Partaking municipality; Information	1		1			1			***3***
	Subtotal	3		1			5			***9***
Task Complexity	Infomediary		1							***1***
	Non partaking municipality									
	Partaking municipality; Executive									
	Partaking municipality; Information			1						***1***
	Subtotal			1						***1***
Technicalities	Infomediary	1								***1***
	Non partaking municipality	1				1				***2***
	Partaking municipality; Executive	2						1		***2***
	Partaking municipality; Information									
	Subtotal	4				1		1		***5***
Use and participation	Infomediary									
	Non partaking municipality	1								***1***
	Partaking municipality; Executive	1					1			***3***
	Partaking municipality; Information	2					1			***3***
	Subtotal	4					2			***7***
Evaluation	Infomediary	2					1			***3***
	Non partaking municipality	1								***1***
	Partaking municipality; Executive	2	1							***3***
	Partaking municipality; Information									
	Subtotal	5	1				1			***7***
Grand Total		***30***	***1***	***3***	***1***	***1***	***9***	***1***		***46***

SLIM; structural barriers

In table 4.10 an overview is given of barriers and if any, suggested possible solutions mentioned by stakeholders. In this paragraph the perceived structural barriers, those without perceived possible solutions are explained.

Structural barriers according to the information commissioner and the infomediary on *information quality* is that certain different definitions for the same object like 'lamp posts' or 'street lights' are deeply embedded in municipal structures that there sometimes is no correspondence between municipalities. This makes it more complicated to conduct comparative analyses between municipalities. The executive of the non-partaking municipality was not certain whether object data in the municipality were ready to be loaded into an alternative like SLIM Melden. Additionally, notifications in that municipality were typically about objects for which where data was not available. Besides, the municipality preferred a small amount of categories in a standard, which fitted Fixi better.

> *"You see that reuse is poor. That is mainly because reusers want to have data of multiple municipalities, and in standardized format please."*
>
> Information commissioner, Municipality of Utrecht

All municipal agents acknowledged in multiple quotes that within their municipality some people do not perceive more notification as a positive work-flow. In the *institutional structure*, there are mostly maintenance worker that resist. For the infomediary, in sales procedures he experienced a barrier in interdepartmental collaboration within municipalities, which made him experience that the hurdle of aligning processes in SLIM Melden implementation is to big. People at the customer contact center were mostly unwilling. The non-partaking municipality acknowledged that change is difficult in the municipality. Representatives of municipalities have acknowledged that it took them a lot of effort to convince all concerned departments in the municipality to convince them into change.

> *"Municipal departments often do not talk to each other, are often not even in the same building, and change is always perceived as difficult."*
>
> Project leader SLIM, Civity

For *evaluation*, multiple difficulties were mentioned concerning measuring the impact of SLIM. Either metrics of previous processes were absent, or there was a sense of the operational efficiency gains being outweighed by the extra work due to the increase of notifications. This is clearly a very internally focused line of reasoning.

Use and participation barriers were perceived by municipal agents as a result of reasonable doubt on certain aspects of SLIM Melden indeed contributing to user-friendliness. Citizens would prefer descriptions of notifications rather than object-based notifications according to the non-partaking municipality. According to the information commissioner of Utrecht, the reuse of the data was poor and according to the municipality of Velsen executive, feedback to citizens is not always manageable and leads to reduced citizen motivation. This also has to do with the fact that this is difficult to implement technically.

Other *technicalities* barriers for implementing SLIM were perceived by the infomediary. Sometimes an alternative simply is easier technically implemented. The non-partaking municipality said that there was no auction procedure, because Fixi could have been implemented automatically.

> On Fixi: *"They already provided services in our municipality, do the knew exactly about our municipal administration systems"*
>
> Customer-contact quality service, Municipality of Stichtse Vecht

Lastly, all municipal agents mentioned *legislation* barriers, that all had to do with privacy legislation. Because of the ability to provide personal information in free entry fields in the notification form personal information might be published. Despite a disclaimer on the notification form and a continuous monitor on privacy violation, this remains a barrier to open up data, according to municipalities. The barrier however, was not perceived to be very essential.

SLIM; overcoming barriers with suggested solutions

As for WIMS, for SLIM multiple solutions were suggested for overcoming certain barriers. Solutions were mostly preferred along the category of technicalities and to lesser extent to reform in institutional structure and information quality.

Technicalities were mostly mentioned as solutions releasing parts of the barriers experienced on legislation. Currently both the infomediary and municipal agents are seeking for technical support to avoid privacy violation. An example is observed at the partaking municipality Velsen, where notifications on noise pollution of neighbors automatically are not published. Typically, these notifications are highly susceptible for privacy regulations, because notifying citizens tend to add names of noise making neighbors. Additionally, the information commissioner of Utrecht highlights that the municipality of Utrecht is developing a algorithm for detecting personal information in the free entry field in the notification form. In Fixi, the initiative implemented in the non-partaking municipality of Stichtse Vecht, notifications are only published in the application as pins without meta-data when the notifying citizens checks an entry box in the form. Additionally, a technical system operated by the executive manages adjusted data access per municipal department. For instance, a specific maintenance service does not have direct contacts of a notifying citizen. These features might overcome legislation barriers in SLIM as well.

> *"In the future, a single photo will be enough for citizens to make a notification, and with algorithm and meta-data on the photo the rest of the data will be generated."*
>
> Information commissioner, Municipality of Utrecht

Technical solutions are also suggested for improving the user-friendliness. The information commissioner sees a future situation with automatic recognition of location, object and additional data with just the sending of a picture. The executive would like to see that most notified categories appear on top. The infomediary sees automated technical reporting and bench-marking between municipalities. The executive at the municipality of Velsen mentioned that technical linkage with additional internal processes, like maintenance planning, could improve interdepartmental alignment in municipalities.

According to the information commissioner, *institutional structure* should be established to guide municipalities in legislation norms on data adoption, assist municipalities in implementation and develop standards in a way that municipalities can be compared. He aims at supra-municipal organizations like BZK and VNG.

4.5 Case comparison

In this section, a comparison of WIMS and SLIM follows. In the section related to case descriptions before analyzing the stakeholder perceptions, already several differences between the cases have been defined. In paragraph 4.4.1, this led to the overview in the table and allowed to conclude that the chosen cases fit the research design of researching a citizen informing and a citizen sourcing case. However, before we can attribute differences in results between the cases to the difference of active and passive citizen interaction, additional remarks have to be made regarding the cases. By analyzing these characteristics, we aim for internal validity in data analysis by assessing rival explanations (Yin, 2018). By comparing the cases, the question *"To what extent do shared or conflicting perceptions explain why municipalities partake in open data initiatives?"* can be answered in section 4.5.2

4.5.1 Key case differences

The shown differences in this section have implications for why municipalities partake and influence the value creating process. First, it is important to note that SLIM is a municipality-level initiative, whereas in WIMS all Dutch municipalities are targeted. The challenge of implementing SLIM manifests in the integration of multiple procedures within a municipality, while success of WIMS is dependent on the data delivery of over 350 Dutch municipalities. This means that the infomediary support in implementation in SLIM has been high, whereas in WIMS municipal workers are helped with a crowd-sourcing tool. This explains why barriers on task complexity were not experienced in SLIM, whereas in WIMS various municipal servants struggles delivering the data in a correct manner. Also, fitting all municipalities in one data-standard in WIMS is less accepted then a municipality shaped data standard as implemented in SLIM. This has implications of implementation difficulty as well.

Secondly, WIMS is a unique initiative without any clear alternative initiatives. In the past, some municipalities have encountered other infomediary efforts to improve citizen informing initiatives on polling stations, but WIMS was the first of its kind to achieve a nation-wide coverage of municipal data. There was no auction procedure, as WIMS is initiated by an NGO and subsidy money. On the contrary, Civity is a private company and there are several alternative notification applications, like Fixi, which we have seen being implemented in the municipality of Stichtse Vecht. This makes SLIM Melden experience highly replaceable and makes partaking less likely.

Thirdly, in WIMS there was an observation of a peer-pressure phenomenon of partaking as more municipalities decided to partake. The platform was shared a lot by media websites in the election wave of 2017-2019 and the standard was co-created with VNG and therefore supported by supra-municipal organizations. Data were analyzed by multiple journalistic re-users. This means that municipalities in WIMS faced more pressure to partake.

Fourthly, concerned municipal agents IN SLIM were better able to assess the value that has been created then municipal agents in WIMS.

Lastly, the initiative characteristics have implications for the potential of value creation, which are attributed to the differences in scale of the initiatives. As WIMS targets all municipalities and therefore generates nation-wide standardized data, the value creation scale is on the national scale as well. This makes reuse more relevant as well, which has given various social/political value creating processes a boost.

These characteristics are possible contributing factors to stakeholder perceptions. Therefore, in assessing the second case study question *why* municipalities partake, these factors play a role. Alongside the outcome of perceptions for the cases, these factors are recorded in table 4.11.

Table 4.11: Case differences

	WIMS		**SLIM**	
Contributing factors to partake				
Initiative substitutability	Low		High	
Peer pressure to partake	High		Low	
Institutional pressure to partake	Medium		Low	
Implementation difficulty	Aligning multiple municipalities		Aligning municipal departments	
Infomediary support of implementation	Medium		High	
Municipal ability to assess the success of the initiative	Low		Medium	
Contributing factors to value creation				
Reuse of the data	Medium		Low	
Amount of citizens targeted	High		Low	
Amount of municipalities targeted	High		Low	
perceptions	**Infomediaries**	**Municipalities**	**Infomediaries**	**Municipalities**
Convinced of value:				
Social / political value	High	Medium	Medium	High
Operational / tactical value	Medium	Low	High	High
Crucial perceived structural barriers				
Institutional barriers	Unclear responsibilities in municipalities	Initiative does not 'fit' the municipal organization	Lack of collaboration within municipalities	Implementation entails to much internal change
Evaluation barriers	Lack of proving the added value of WIMS		Lack of proving the net-operational gains in SLIM	
Information Quality		No support for data-standard		Data availability
Perceived surmountable barriers and corresponding suggested solutions				
Task complexity	Technicalities, Institutional structure	Technicalities, Information Quality		
Information Quality	Institutional structure	Institutional structure		
Legislation				Technicalities

4.5.2 Why to partake

As has been observed in both cases, the decision to partake in an initiative, to deliver data and to adopt open data processes in procedures, is a municipal decision. Infomediaries, supra-municipal governmental organizations ans reuse agents have influences on the municipalities take, but the decision making bodies are clearly municipal administrators. Yet multiple municipal administrators could have different views. In assessing why municipalities partake, stakeholder agreements, convictions of values and perceptions of barriers and successes are compared.

Stakeholder agreements

Both cases have shown that stakeholder agreement is not at all a necessity for successful OGD implementation by partaking in initiatives. Rather, as for WIMS and SLIM the decision on partaking in an initiative depends on an enthusiastic coworker within the municipal organization who is determined to convince additional relevant departments.

For WIMS, the success is very much dependent on where the request for the delivery of data arrives in the municipality. An unconvinced coworker has the ability to block the request procedure. As in most municipalities the communication departments seem to have the leading authority to decide on these matters, the chance of success is very much dependent on the attitude of the coworker handling the request. In most of the municipalities, there is a single department deciding on this issue, except in bigger municipalities, where typically additional (Geo-)information departments are established. The case of Eindhoven has shown that in such situations, different views on effect of the initiative can lead to a conflict within the organization, which in the case of Eindhoven was overcome in a advantageous outcome for WIMS.

In SLIM, the necessity of the agreement of multiple departments was much more evident, as there is a clear front-end (notifications) and back-end (maintenance) integration in SLIM implementation. Again, the success depends much of the enthusiasm of a municipal coworker, who manages to convince the rest of the organization of the value in partaking. The information commissioner of partaking municipality of Utrecht was very much focused on the social/political values. To him, responsive governance and the facilitation of making notification for citizens were very important features of SLIM Melden. The executive of the municipality of Velsen perceived the operational/tactical advantages as more important. These observations show that the municipal agent is typically more focused on seeing value from his perceptive. When multiple perceptions are beneficial, the success of implementation is more likely.

Conviction of value

Generally, the conviction of added value in SLIM Melden was higher among stakeholders than the perceived value of WIMS. Both on the social/political and the operational/tactical level, the perceived benefits of SLIM are more evident than in WIMS. This has some features that might have had influence.

First, SLIM can be characterized as a municipality specifically shaped initiative, where as in WIMS the added value lies in the greater good rather than the municipality itself. This means that the municipal perspective is better taken into account in SLIM. Secondly, the ability to evaluate the value is easier in SLIM, because metrics show that social/political benefits are elevated as a results of the increase of notifications. Secondly, as SLIM alters procedures significantly and is very much focused on the operational efficiency of municipalities, the perceived benefits on the operational/tactical level are much more evident. Now the question arises whether the key difference between the initiatives of SLIM being a citizen sourcing initiative and WIMS being a citizen informing initiative, explains these differences.

The active civic participation element in SLIM has yielded additional social/political value in the form of responsive governance. Secondly, the fact that in SLIM the tasks of the citizen is active (doing a notification rather than inspecting a website in WIMS) makes the perceived participation aspect of the social/political value tangible and measurable. As for operational/tactical benefits, SLIM has much more impact on the operational processes of municipalities than WIMS. Civity focuses very much on the operational/tactical benefits in its sales strategies.

These features of SLIM have a drawback as well. The most important drawback manifests in the fact that SLIM is a municipality-specific focused initiative. The strategy of implementing SLIM independently makes that

SLIM Melden now is implemented in 8 of the 355 Dutch municipalities, whereas WIMS is implemented in all 355. There seems to be a trade-off between nationwide coverage and taking local context into account.

How barriers are surmounted

In terms of how implementation barriers have been overcome SLIM Melden seems to be an initiative where many barriers for municipalities have been overcome already. This was concluded from the fact that named barriers where mainly structural. The notion that no barriers on task complexity have been observed shows that the initiative has matured in favor of the operational feasibility of SLIM Melden. This is evident because Civity extensively accompanies municipalities in implementation. An open data 'believer' or specialist is not a necessity. Legislative barriers manifest themselves in privacy violations by releasing personal identifiable information. Multiple technical solutions are preferred to tackle these barriers, such as the development of algorithms that recognize personal data.

Despite the fact that WIMS does not entail organizational reform processes, barriers on task complexity are still experienced. It is remarkable to see that according to the infomediary, institutional reform is the main driver to release task complexity. The logic extracted from this reasoning entails that because there is no mandatory data-delivery, municipal agents perceive all extra work as complex. Mandatory partaking in nationwide developed standards should reveal these barriers. With technical reforms the crowd-sourcing procedure can be made as user-friendly for the municipalities as possible, but it remains the municipality who has to deliver. On the contrary, municipal administrators have high expectations of technology. Their logic manifests in: all the parameters in the data-standards are available somewhere and this means that the responsibility for data delivery is not for the municipality but for data-specialists. This is in clear contrast with the very reason why WIMS was initiated in the first place: the inability of OSF to develop WIMS because the lack of uniform data-release by municipalities.

Critical barriers

Critical barriers that are unclear how to be surmounted manifest mainly on the institutional structure in open data initiatives. Both infomediaries perceived that the main structural institutional barrier manifests in the absence of clear responsibilities within municipalities and lack of interdepartmental collaboration as open-data initiatives in a citizen sourcing initiative typically entails the alignment of multiple municipal departments. The reasoning on institutional barriers as perceived by municipalities is reversed. The initiative and its data-standard does not fit the municipal organization, due to institutional features and characteristics of the municipality. The general notion revealed is that change is essentially difficult for municipalities according to infomediaries, where change is not for everyone according to municipalities.

Critical barriers on information quality have to do with the data-standard. When municipal agents get confronted with a data-standard, they tend to assess the standard according to their operational experience and seem to judge the standard on the parameter level. Municipal representatives in WIMS mentioned that the added value of WIMS in comparison with former citizen informing processes was limited to the improved information on locations of polling stations. There was no support of less apparent valuable parameters. Also, when a certain location parameter standard is used such as XY, the support of a municipality that uses longitude/latitude is threatened. For SLIM, the structural barrier on information quality is that object-data does not exist, because the objects are not yet registered in open data format or a notification subject does not apply to a thing that is classifiable as an object. The latter notion was extracted from the perspective of the non-partaking municipality of Stichste Vecht.

4.6 Evaluation of the conceptual model of the ecosystem by case insights

From the insights of the cases, insights have followed on how the value creating processes look like in SLIM Melden and WIMS. Based on the tasks and values as derived from the literature and visualized in the figure 2.2. In figures 4.5 and 4.6 the ecosystems of WIMS and SLIM are portrayed. In this way the conceptual model (figure 2.2) could have been evaluated by real-life observations.

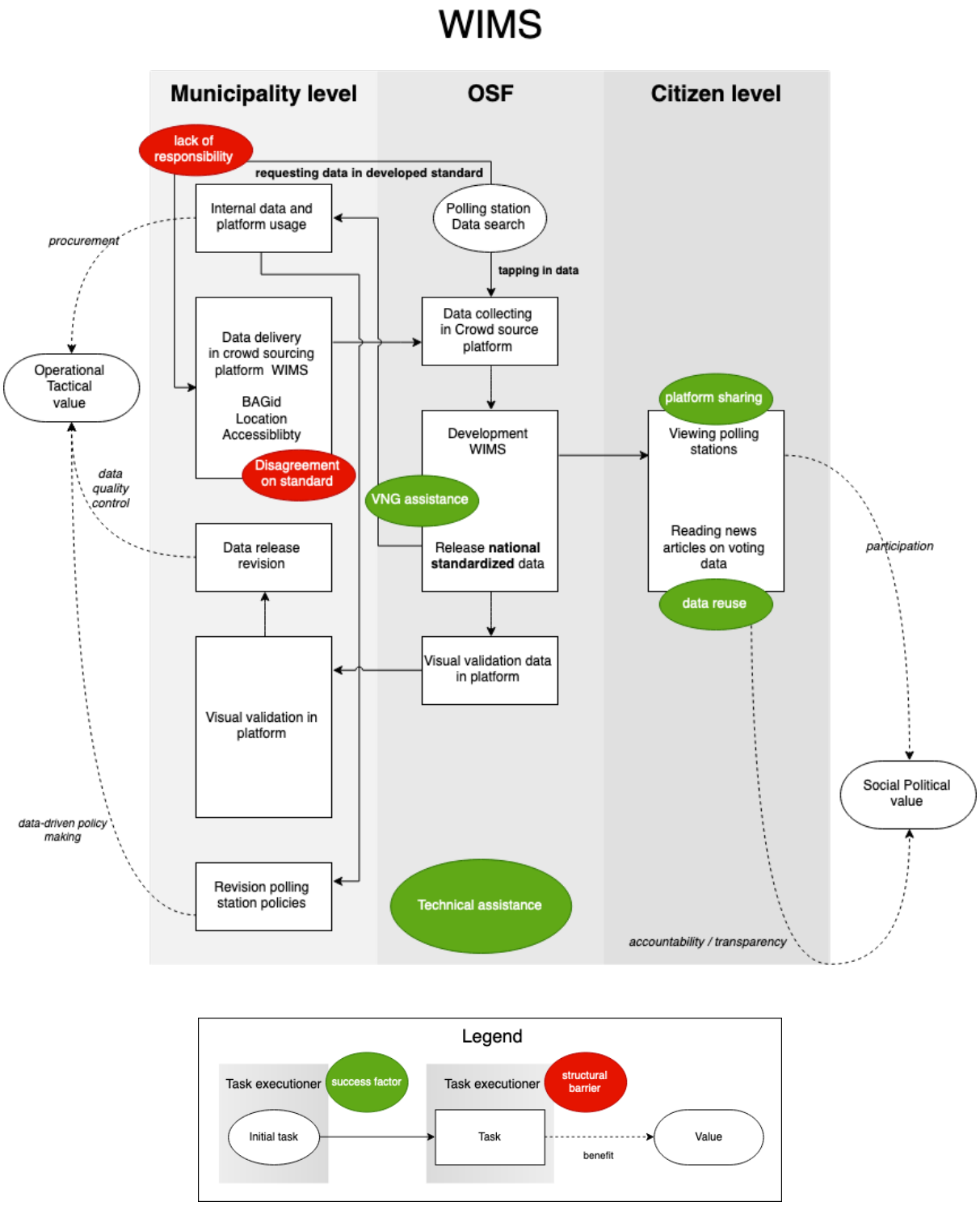


Figure 4.5: The ecosystem of WIMS

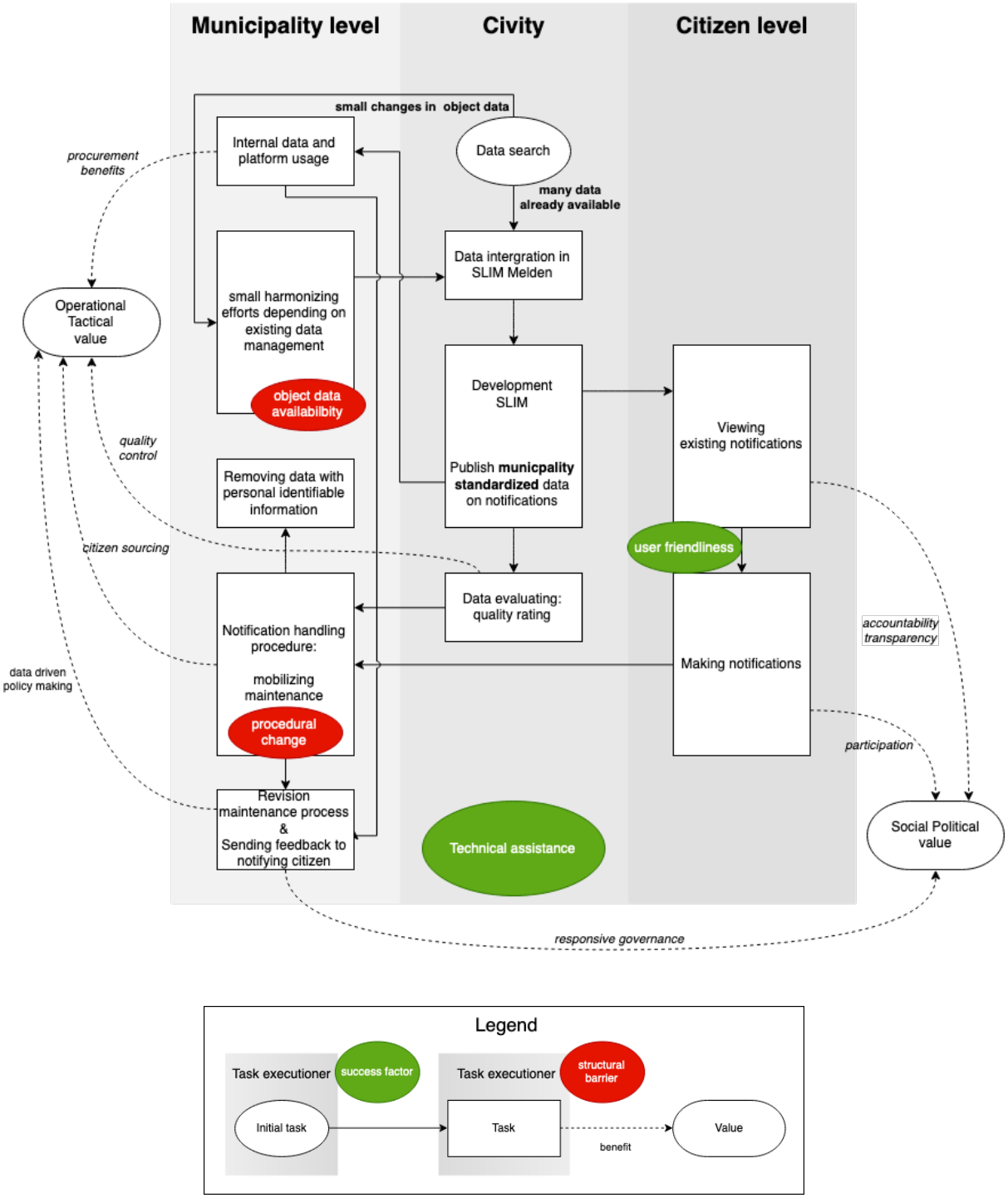


Figure 4.6: The ecosystem of SLIM

The values and tasks associated with value creation in the ecosystem as defined in tables 2.4 and table 2.3 could have been illustrated and made tangible in the contexts of WIMS and SLIM. The structure of the ecosystem could have been followed to the greatest extent. The results have been validated using the conceptual model as a logic model (Yin, 2018). A couple of implications follow.

1. **Civic participation benefits do not necessarily only add to social/political value when active citizen interaction is established**. As we have seen in WIMS, presumed participation benefits manifested in activating citizens to vote. This means that passive data interaction with citizens could also yield participation benefits, besides the more evident participation benefits in citizen sourcing initiative.
2. **Internal usage and platforms account to procurement, when it leads to revision of policies it accounts to data-driven policies**. The municipal task of internal data usage leading to procurement was to simplistic in the conceptual model. Rather, procurement benefits follow from internal usage of a platform or application and data usage as source material. When the data is used to revise policies, data-driven policy making benefits are yielded.
3. **Economic value is not perceived by stakeholders in the initiatives**. In both ecosystems no stakeholder has perceived economic created value. It is not said that no economic value has been created, because Civity as a private company had generated revenue by procurement services to municipalities. Therefore, economic value is evident. However, the value does not play a direct role in designing ecosystem and convincing stakeholders to partake.
4. **Citizen sourcing yields additional benefits on operational and social/political value**. In SLIM, operational value was created because citizens execute the indication of municipal maintenance. Furthermore, responsive governance as contributing benefits to social/political value is apparent as notification procedures give momentum to municipalities to act in a responsive way.

Additionally, the cases have revealed structural barriers and key successes that are highlighted in the figures 4.5 and 4.6.

1. **The barrier of the institutional structure**. In both initiatives the institutional structure has been identified as a the main barrier. As revealed from WIMS, it relates either to that municipalities do not consider data delivery their task, possibly due to responsibility issues and the lack of partaking being mandatory. Alternatively, when the initiative implies procedural and organizational changes within municipalities, a barrier arises, as found in SLIM. Also in WIMS and SLIM reasoning have been found that the initiative does not fit the institutional characteristics of the municipality. For instance, WIMS takes municipality specific sub-local election sot into account, or object data are not relevant in certain municipalities on notifications in SLIM implementation.
2. **The technical assistance of infomediaries**. Infomediary technical support is much appreciated in both initiatives. Whereas the NGO Open State Foundation argues more from a perspective that they do what governments should do, Civity as a market participant is more aiming at serving municipalities in its sales. Regardless of the incentives of the infomediaries, both initiatives depend heavily on the skills of infomediaries and municipalities perceive infomediary technical solutions as an essential role in data initiatives.
3. **Main successes on data usage**. User-friendliness was identified as the main initiator of social/political value in SLIM, as it inspires citizens to make notifications. In WIMS, the focus was more broad on re-users as well, as a national standard was developed. This resulted in a national data-set that was analyzed by prestigious journalistic re-users and a nation-wide platform which use was increased by the dedication of Facebook. The decision on scale of the data-standard is therefore an essential step in open data-initiatives.

4.7 Conclusion

In this chapter, the third sub-question was answered: *what are stakeholder perceptions on values, barriers and success factors of open data initiatives in municipal OGD ecosystems?*. This chapter has described two case studies WIMS and SLIM. The cases entailed two ecosystem-oriented municipal OGD initiatives, designed to improve an administrative process of municipalities by citizen informing and citizen sourcing, respectively.

Some unique features made the cases different. First, SLIM Melden was a municipality focused initiative whereas WIMS entailed an effort to standardize polling station data on the national scale. Hence, the implementation difficulty differed between the cases because in WIMS multiple municipalities had to be aligned whereas in SLIM multiple municipal departments had to be aligned. Secondly, WIMS is a unique initiative with some supra-municipal endorsement, whereas for SLIM competing initiatives exist.

The case differences have had implications for the value, success and barrier perception of assessed infomediairies, non-partaking municipal agents and executive and information/communication representatives of partaking municipalities. The results show that value on the social/political and operational/tactical dimension were recognized in both cases. Economic value was not recognized in both initiatives. In SLIM, stakeholders felt more convinced of added operational/tactical and social/political value by partaking in the OGD initiative. As a case with an active citizen interaction element, in SLIM the success of the initiative is better assessed because the evaluation of policy effects was more tangible and measurable. These aspects in combination with the observation that SLIM Melden is shaped completely to the specific context of the municipality in terms of data-standard and implementation support could explain these differences in perception. Moreover, the additional social/political value of responsive governance was observed in SLIM Melden, which very much convinced the information/communication department of the partaking municipality.

For both cases, the stakeholder agreement on value of the initiative was not a necessity for municipalities to partake in the initiative. Both cases have shown that even after implementation, stakeholders exist who experience disadvantages. Rather, the success of an initiative is very much dependent on the determination of an open-data initiative ally in the municipal organization. In substitution of the outsourcing of implementation by the infomediary in SLIM, endorsement of supra-municipal governmental organizations, a crowd-sourcing data-platform and peer pressure mechanisms in WIMS were established to engage municipalities in partaking. However, these efforts have not encouraged all municipalities to partake.

Barriers for partaking in initiatives and for success of the initiative were categorized as either barriers where solutions were suggested for and more persistent, structural barriers. For WIMS, according to the infomediary institutional reforms like mandatory, clear policies for open-data initiative participation by municipalities were identified as the main necessity for successful implementation. On the contrary, among municipalities there was a sentiment of 'technology will solve everything', because specific institutional characteristics of municipalities make partaking essentially difficult. They expect that development of algorithms and data-science will substitute outdated procedures like crowd-sourced data delivery. Also in SLIM Melden, municipal agents have shown to believe in technical solutions, in that case to prevent privacy violations by the development of algorithms.

A data-standard has also been identified as a barrier, as it knows winners and losers. In crowd-sourcing, more parameters for the sake of higher data quality is less accepted by the data delivering municipal agents. Also in SLIM, more categories of notifications are not necessarily perceived as a positive trend, in the case of SLIM because it reduces notification application feasibility and user-friendliness.

Chapter 5

Towards a revised municipal ecosystem

5.1 Introduction

In this chapter, the results of the development of a conceptual model from a systematic literature review in chapter 2, the expert review of the conceptual model in chapter 3 and the real-life formalization of the ecosystem by analyzing two cases of municipal open government data initiatives in chapter 4 are synthesized into a revised ecosystem. Hence, the fourth sub-question *what factors need to be incorporated in the model in order to increase the creation of value?* is answered which results in policy recommendations for municipalities, supra-municipal governmental organizations and strategic advice for infomediaries.

5.2 Expert and stakeholder perspectives on ecosystems

In this section, the perspectives of experts on the ecosystem and the stakeholder perceptions on the ecosystem are given.

Experts

As highlighted in section 3.3.1, the expert review has yielded three implications. First, the societal incentive as a triggering event for a data search should be central in the ecosystem. This feature emphasizes the notion that data publication and usage is a means for a societal issue rather than a goal itself.

Secondly, the distinction between active and passive citizen interaction was perceived as interesting.

Thirdly, some level of policy context was advised to be included in the conceptual model. As the conceptual model depicts bottom-up value creation, suggesting that value is triggered by a societal incentive rather than a policy, this notion at first was rejected. However, in the cases we have come across contextual features that have been examined as well. How this expert notion has altered the conceptual model will be examined in section 5.3.

Citizens

Citizens are a tricky group of stakeholders to evaluate in initiatives. Problematic is the assessment of 'the' citizen as the group is heterogeneous and difficult to aggregate. Multiple interviewed stakeholders have identified the same problem as encountered during the research, on how to assess the needs of the citizens. However, the combination of information in which references to citizen perceptions were found, website analytics of WIMS, user statistics of SLIM Melden and relevant news articles allow to construct an assessment of the citizen perception.

Citizens who participate in open data initiatives are typically citizens that are located on online platforms. Those citizens that seek information online expect advanced visualization and user-friendly applications to either do something (active interaction) or see something (passive interaction). When procedures are to difficult or take

too much time, as seen in outdated applications, citizens tend to give up on what they do. This means that especially citizen sourcing initiatives need advanced user-friendly procedures.

In WIMS, it was perceived that reaching citizens is even more challenging, as many citizens might not even have been aware of their need for polling station information. Visibility of WIMS in the online space, where citizens typically navigate to is a necessity to reach them. Recruitment of citizens occurs via platforms where citizens are. In WIMS, relocation from Facebook was one of the essential successes. Also in SLIM Melden, visibility accounts to success from the citizen perception as the notification procedure is clear and easily found. The statistics of users in both initiatives show how the active and passive tasks of citizens that shall be performed in the ecosystem have been made easier by the implementation of the initiatives.

Furthermore, at least a significant amount of Dutch citizens expects a reaction after something was notified. Citizen experience frustration as follow-up after a notifications have been made. This is in line with the notions from Wijnhoven et al. (2015).

Infomediaries

Infomediaries have different believes and incentives to start OGD initiatives. Whereas a private company benefits from business revenues through procurement services delivered to municipalities and sale their products on presumed operational/tactical value, infomediary NGO's are focused on social/political value in OGD initiatives and represent and defend the interests of reuse. Both infomediaries have a belief in open data as a means to improve citizen informing and citizen sourcing initiatives and are society focused.

The choice to focus on the operational/tactical or social/political value in setting up the initiative, has implications for the value created in the initiative and the support that is needed for municipal implementation. The feature that is impacted mainly relates to the chosen data-standard. As nation-wide covered standards essentially disregard municipality specific contexts, institutional support from governmental actors are perceived to be needed to establish them. Municipal standards offer a fit to municipal context and maximize efficiency and benefits.

Municipalities

Municipalities generally perceive engagement in open data initiatives as extra work which is not predefined in task descriptions. Depending on the job perspective of the municipal agent, the conviction of either operational/tactical value (mainly executive servants) and social/political value (mainly outside-focused servants) can make municipal servants willing to partake in initiatives. The determination of at least one enthusiastic municipal servant influences the municipal decision to partake the most. Unavoidably, in the implementation process people will be faced that have to be persuaded as OGD initiatives often impact multiple municipal departments.

Meanwhile, for many municipal agents the added value for the municipality itself by partaking in the initiative needs to be very clear. There was an observed tendency to a sentiment that municipal agents represent the interests of their citizens residents, which makes them less receptive to infomediary arguments to partake in national standards for the good of nation-wide citizens. Multiple examples were found of municipal agents fearing for their citizens interest by engaging in the initiative. This sentiment is in conflict with various claims of municipal agents not to be completely aware of the needs of citizens.

Moreover, being convinced to partake does not necessarily entail that municipalities are convinced to commit to partaking in initiatives as well. In other words, when being asked to do something, perceptions to partake alternate. If there is a 'good enough' alternative which is easily technically implemented, partaking in the alternative is likely. Also, there seems to be a trust in technology to generate data rather than delivering data. This means that strategic behaviour to avoid implementation difficulty has been observed.

5.3 Synthesis of results into revised conceptual model

In both the expert review and the real-life case studies, several adjustment have been made to further develop and clarify the conceptual model as develop in figure 2.2. These can be found in figure 5.1. The revisions from the conceptual model are highlighted below.

5.3.1 Emphasizing that ecosystems are triggered by *societal incentives*

First, the societal problem as the ignition of an ecosystem is necessary part of the ecosystem to emphasize that the societal incentive where open data is a means for initiates an ecosystem. The centrality of data in the ecosystem confused expert into thinking that data is not a means but an end. However, the ecosystem remains a data ecosystem and holds value in making tasks related to data tangible and concrete and attributing them to stakeholders.

Secondly, it remained unclear where the process begun, even though in the legend the 'data search' as the initial task was highlighted. The task of data search is the first task, typically undertaken by infomediary initiators, and is triggered by the societal incentive where data are a means for addressing. Hence. the societal incentive is added to the ecosystem.

The societal incentive is placed on the infomediary/citizen level, because the vision that societal incentive should come from this area of society is upheld. In WIMS, the societal incentive would be characterized as 'increasing voter turnout by improving information on where to vote'. The societal incentive in SLIM may be a phrase such as: 'improving public space disturbances handling procedures'.

5.3.2 Adding a task in the ecosystem: *Developing data- standard*

As an additional task between analyzing and contextualizing data and creating the platform, the development of the data-standard was added. As the initiator of the project, we attribute this task to the infomediary, yet it is needless to state that the standard is created with municipal input. The reason to add it to the ecosystem as a separate task is because it is a crucial step in scoping the initiative. As was seen before, the decision for either a nation-wide data-standard or a municipal context specific data-standard has implications for re-usability due to nation-wide coverage, and municipality perception on accepting the standard. Furthermore, institutional support to a standard is helpful. There is a clear trade-off in the decisions made in this context.

5.3.3 The addition of four *value drivers* in the ecosystem

The analyses in this research have allowed to identify four essential value drivers in the municipal OGD ecosystem. These value drivers increase dedication from the different stakeholders and enhance collaboration. In this way, the co-creation of value in the ecosystem is driven. Therefore, thy shall be added in the conceptual model. The four value drivers are described below.

1. *Institutional support for infomediary initiation*

Infomediary initiation has shown to be an effective way of upholding a focus on citizens in open government data initiatives, as municipal executive administrators might show strategic behaviour. However, as participating in initiatives is a decision made by municipal administrators, there needs to be institutional support in order to succeed.

There are several options to deserve or enforce institutional support. Different institutional features can make this dedication happen. Whether it is coercive supra-municipal endorsement, the internal training of open data knowledge and creating enthusiasm, or information exchange between municipalities that creates peer-pressure mechanisms, all municipalities and infomediaries perceive different dedication mechanisms that work.

The contextual factor of governance as an institutional structure was highlighted as an additional feature of the ecosystem. In developing the conceptual model, the governance structure was left out deliberately in case analysis, because the idea of ecosystem oriented value creation was that the ecosystem is bottom-up in nature. This would not make supra-municipal policy makers part of the ecosystem. However, especially during the case studies was revealed that SLIM Melden is more of a bottom-up open data initiative than WIMS. In SLIM, there was no clear endorsement or additional pressure of top-down steering or policy making. This implies that pure bottom-up open government data value creation is possible. However, the results of SLIM suggest that this is only possible when the initiative is shaped according to the needs of the municipality. For WIMS, in which nation-wide coverage of data gathering was aimed for, some level of endorsement was necessary to succeed. Peer pressure mechanisms and a dedicated infomediary with the capacity to deliver data of reluctant municipalities are endorsing factors that could qualify as bottom-up. However, possibly only an NGO infomediary with external

funding or funding by subsidy could manage. This makes the notion that WIMS is a clear bottom-up initiative shaky.

Therefore, in correspondence with the notion of the expert reviewer calling out for it, supra-municipal interference is possibly indeed an essential ecosystem feature, even in bottom-up focus. In the literature review, an overview of barriers and corresponding success factors on seven categories was already defined. From these insights features like supra-municipal interference and endorsement, and factors like political support have been identified as possible blockades or incubators of the ecosystem. We have identified that barriers and solutions on these categories mainly exist on the interaction between infomedaries and municipalities.

2. *Technical support for implementation*

As the municipality alters processes and prepares data for the initiative, technical support is expected. In both initiatives, the technical support has been given by infomediary parties, but some municipalities are equipped with technical tools. Infomediaries have as an additional feature that they tend to specialize and can enhance information exchange between multiple municipalities.

Technical support is highly appreciated by municipalities, and some municipal administrators perceive the technical development of open government data initiatives by (external) infomediaries the right way to uphold a focus on societal incentive. However, a danger lies in the sentiment in municipal perception provoked by this idea that open government data initiatives might succeed without any action of municipalities. On the contrary, infomediaries depend highly on procedural changes at the municipality level in order to make the initiative succeed. Therefore, this value driver is defined as technical support for implementation, to highlight that the municipality remains a crucial acting partner in the initiative.

3. *Reach out to citizens by engaging re-use platforms*

When the development of the necessary organizational structures and processes has been executed, citizens need to be engaged. In order to reach out to citizens, accessibility is essential. The initiative needs to be visible and the procedure needs to be easily retrievable for citizens. Referral on various information websites that are often visited helps this process. Furthermore, the engagement of social media platforms like Facebook and new platforms helps to create visibility. Reuse of platforms, website or data are key in this step as well, as it created visibility of the initiative, emphasizes the societal incentive and increases accountability and transparency.

4. *Mobilize citizens by User-friendliness*

When citizens are reached, they need to be mobilized as well. The distinction between reaching out to citizens and mobilize citizens is made, because mobilization is aimed to focus on getting citizens to do things. In initiatives that require active tasks of citizen, such as in the case of citizen sourcing initiatives, this is more apparent, however even passive interaction requires mobilization. User-friendliness is key to consider in creating value. Especially citizens that seek solutions in the digital domain, expect advanced user experience designs.

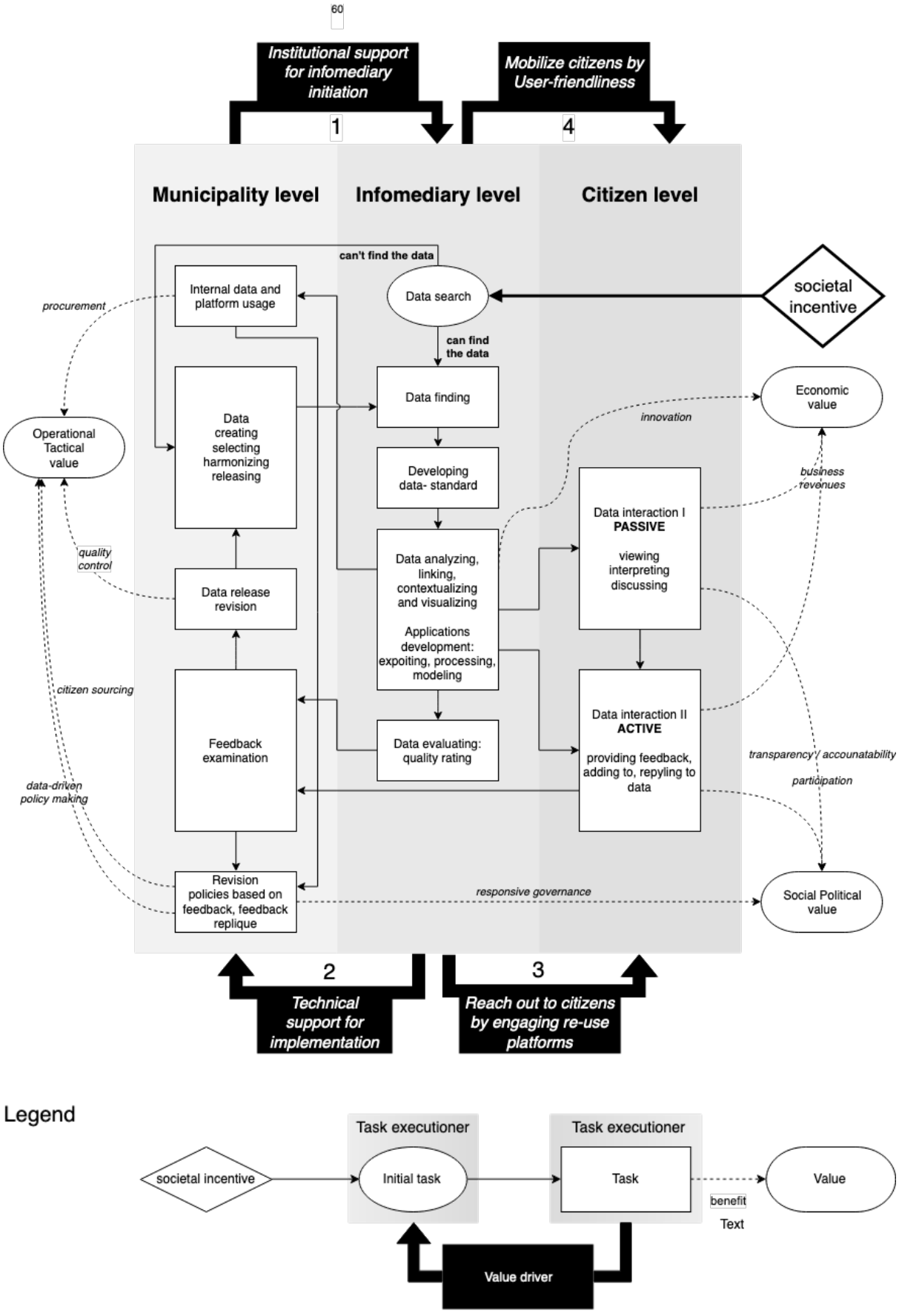


Figure 5.1: A revised conceptual model of an ecosystem

5.4 Policy recommendations

The identified value drivers as an addition to the ecosystem are translated in this section into policy recommendations. Strategic advice is constructed for infomediaries, policy advice is formulated for municipalities and supra-municipal organizations, mainly VNG and BZK in order to shape OGD initiatives in municipal ecosystems and increase value creation in these initiatives.

5.4.1 To Infomediaries

For infomediairies such as OSF and Civity the following recommendations follow. They mainly manifest in framing strategies to convince municipalities to partake in OGD initiatives.

- **Find support on the parameter level for data-standards for publication and create hybrid cross-municipal data-standards.** For WIMS, the acceptability of a data-standard for publication varied on the parameter level. Some parameters where not perceived as adding value, which made municipal administrators less willing to run the extra mile for data delivery. Therefore, we argue that in establishing data-standards, the mantra 'more parameters equals more information equals higher value' is not necessarily beneficial for obtaining municipal support for data-standards. Therefore, cross-municipal data-standards should be created in a hybrid way. On the one hand, a limited amount of standardized parameters in a data-standard that serve the cross-municipal analyses to be conducted is a necessity. Explain to municipalities why these parameters are necessary for inter-municipal analysis in order to convince municipal agents of the value that will be created from data-delivery. On the other hand, leave space for parameters in data-standards for municipality specific contexts. This will increase feasibility of the data-standard in the municipal context and likely makes municipalities more willing to adopt cross-municipal data-standards in administrative procedures which benefits the sustainability of the data initiative.
- **Be transparent about possible disadvantages of partaking in open government data initiatives**. There should be some level of caution in the way that effects of open data initiatives are framed, as municipalities unavoidably will experience disadvantages as a result of partaking in initiatives as well. In being open and honest about how these initiatives serve benefits for the greater good, support of municipalities might be obtained. A suggested framing strategy is to highlight that open data initiatives do not necessarily replace existing citizen informing or citizen sourcing procedures, but add to existing services and therefore improve the service. For example, citizens that navigate through the digital environment are engaged, while upholding off-line procedures keeps the elderly engaged as well.
- **Consider the fact that reuse of data is challenging**. In the analyzed cases, both infomediaries turned out to be very optimistic in terms of data reuse. However, even data-enthusiasts at highly adopting municipalities such as Utrecht do not see high reuse of data. Often, reuse is limited to academic purposes and minimal journalistic reuse. Therefore, reuse as a perceived benefit of partaking in municipalities might not be convincing to municipalities. It is advised to keep a humble mind in foreseeing reuse.
- **Highlight the mutual benefits for both social/political and operational/tactical value**. The research has shown that municipal open government data initiatives creates benefits for multiple categories of value. Social/political benefits are derived from engaging citizens and operational/tactical benefits are achieved from procurement services. In observed sale strategies of infomediaries, the focus was on either one of those. In order to convince municipalities to partake in OGD initiatives, a rhetoric that highlights the mutual benefits of open government data initiatives for municipal operations as well as society might be helpful. Additionally, open government data initiatives should be shaped alongside these two levels.

5.4.2 To municipalities

The following notions should be considered by Dutch municipalities.

- **In participating in open government data initiatives, consider the interests of citizens nationwide, a sole focus on municipality residents is too narrow**. Municipal administrators have shown to be less likely to value initiatives that might improve services in other municipalities, but do not add value to processes within the municipality itself. As representatives of the municipality itself, this is not

necessarily a bad position to take, yet it jeopardizes the potential value from nation-wide data initiatives. When the interest of the nation-wide interest is considered, the value might be recognized more easily.

- **Take advantage of citizen sourcing initiatives to show responsive governance**. As being responsive is a true challenge in municipalities, citizen sourcing initiatives typically provide momentum to be responsive. To take this benefit to a further level, even inform citizens how policies have changed after notifications have been done. This should be easily performed as contact information is often provided by notifying citizens.
- **Ensure high data-quality and user-friendliness by incentivizing and associating with infomediary parties**. Data-standards are created by infomedairies in collaboration with municipalities. Infomediaries who benefit from good user reviews of the app. Herein lies an additional incentive to maintain a focus on the user perspective. This could also be the case with upholding data quality. As infomediaries endorse applications on the companies account, the incentive arises to maintain functioning applications with high quality data and user-friendliness. In procurement and outsourcing agreements and contracting infomediaries, this notion should be considered by municipalities.
- **Refrain from assumptions about advanced technology and algorithms to be already sufficiently developed so that partaking in initiatives does not entail municipal dedication alongside technical implementation**. Overall the impression was provoked that some municipal administrators have unrealistic expectations regarding algorithms and data-science. These municipal agents do not seem to be aware that data cleaning, harmonization and manipulation to prepare for data initiatives still requires tremendous amounts of time. Therefore, data supply is typically requested by infomediaries from municipalities in a standardized way.

5.4.3 To supra-municipal organizations

- **Take a pro-active role in investigating standardization between municipalities**. The development of national data-standards for that allow standardized data publication between municipalities are beneficial for reuse of data. However, there is a trade-off between operationability and information-richness. Only a small amount of parameters is possibly manageable to standardize, and municipal specific context should not be disregarded. In establishing the balance of this trade-off in standards, VNG or BZK should take a pro-active tole. They are encouraged to engage early-adopting municipal agents within municipalities to represent municipal perspectives, but honour the infomediary voice as they tend to represent societal incentives.
- **Advocate continuation and sustainability of initiatives if initiative continuation is not embedded in municipal procedures**. This research has shown that infomediaries tend to slowly refrain from tasks in ecosystems and seek sustainability of data initiatives by passing over these tasks over to municipalities or supra-municipal organizations. They view themselves as catalysts of data initiatives but often perceive sustainability of initiatives to be a governmental task. When data publication according to standards as developed in initiatives is embedded in municipal procedures, the sustainability and durability of initiatives is improved.. However, in initiatives where there is no procedural embedding, alternatives to sustaining data initiatives need to be found. Supra-municipal assistance is needed in such initiatives. Theses continuation strategies likely entail coercive policies or assisting in reorganization.

5.5 Conclusion

In this chapter of the thesis policy recommendations were made by revising the conceptual model of the municipal OGD ecosystem. The fourth sub-question, *what factors need to be incorporated in the model in order to increase the creation of value?*, could have been answered. First, it should be clear in the ecosystem that societal incentives are triggering events for data initiatives. Secondly, an important task that is added to the ecosystem is the development of a data-standard and choosing its parameters. Thirdly, four essential value drivers to encourage stakeholder dedication and collaboration are defined. These value drivers are presented as (1) institutional support for infomediary initiation, (2) technical support to implementation, (3) reaching out to citizens by engaging re-use platforms and (4) mobilization of citizens via user-friendliness of application.

From these insights policy recommendations have been made to infomediairies, municipalities and supra-municipal organizations. Infomediaries are encouraged to create hybrid data-standards with municipal support on the parameter level in order to balance municipal context operationability and reuse. Furthermore, infomediaries should be transparent about possible disadvantages of partaking in open data initiatives, consider the fact that reuse is challenging and highlight mutual benefits on operational/tactical and social/political values in framing strategies.

To municipalities, the advise is given to consider interests of citizens nation wide in deciding to partake in initiatives. They should take advantage of momentum in citizen sourcing initiatives to practice responsive governance, ensure data-quality and user-friendliness by locking in infomediaries and refrain from unrealistic assumptions about data-science and algorithms.

Lastly, supra-municipal organizations should take a pro-active role in investigating cross-municipal standardization and advocate sustainability of data initiatives in cases where data publication is not embedded in municipal procedures.

Chapter 6

Conclusion

In this last chapter of the thesis, a conclusion follows. The research questions and correspondinganswers are repeated in section 6.1. Then, the main conclusion follows in section 6.2. In section 6.3, the scientific and societal contributions of this study are explained. Then, in section 6.4 the research methodologies and choices are discussed in a reflection. In addition to the reflection, in appendix F the linkage to the Engineering & Policy Analysis program is explained. This chapter concludes with a list of suggestions for further research in section 6.5.

6.1 Recap research questions and conclusions

Open government data publication is an important feature of an open government. An effective way of establishing the synergy between OGD publication and usage derived from a societal incentive is when open data initiatives emerge in an ecosystem of municipalities, citizens and data-specialist infomediaries. In Dutch municipalities, however, the publication of data remains poor. Presumed value from municipal open government data does not live up to its potential, despite various open government data initiatives. Policy makers lack understanding why results are dissatisfying, because value-creating processes remain unclear, as well as factors that might inhibit it.

This research attempted to fill this gap by answering the following research question: **How can the creation of value in municipal open government data ecosystems be facilitated?**. By doing so, the research objective was to identify value drivers and inhibitors in municipal ecosystems by evaluating the stakeholder perceptions in open government data initiatives following an ASM-approach. A conceptual model of the municipal OGD ecosystem was developed, evaluated among experts and validated empirically in two case studies. This allowed revisions of the conceptual model and the formulation of policy recommendations. The four corresponding phases and sub-questions were answered as follows:

1. What does the municipal OGD ecosystem look like?

An ecosystem from an ASM perspective consists of tasks of citizens, municipalities, and infomediaries as well as social/political, operational/tactical and economic value created from execution of these tasks. Citizen-oriented open government data initiatives in ecosystems relate either to citizen informing, citizen sourcing, accountability & transparency or collaborative democracy, depending on the active/passive interaction scale and political/administrative domain. Drivers and inhibitors of the ecosystem were identified as perceived barriers and success factors. They are structure according to seven categories: institutional structure, information quality, legislation, task complexity, technicalities, use & participation, and evaluation.

2. To what extent is the conceptual model of the municipal OGD ecosystem accurate, insightful and useful?

The expert panel produced mixed opinions regarding completeness, clarity, representation, insightfulness, usability for policy making and usability for expert job execution of the conceptual model. Three implications followed:

1. Ecosystem tasks are explicitly related to data activities, the societal incentive of data should therefore be central in the ecosystem, and initiate the initial task, a data search in a municipal ecosystem.
2. The distinction between active and passive interaction was perceived as a novel academic insight and provoked additional interest in how this distinction relates to value creating processes.
3. Contextual factors like existing policies were perceived to be missing, and were subsequently added to the barriers and success factors influencing the success of data initiatives.

3. What are stakeholder perceptions on values, barriers and success factors of data initiatives in municipal OGD ecosystems?

In two case studies, perceptions of municipal administrators, citizens, and infomediaries on values, barriers, and success factors in ecosystems were measured. Social/political and operational/tactical value was acknowledged by all stakeholders. In citizen sourcing initiatives with active citizen interaction, additional social/political value is created through responsive governance if citizens are provided with feedback. Furthermore, citizen sourcing initiatives increase operational/tactical value. Economic value was not explicitly perceived. Citizens are not necessarily aware of OGD initiatives and thus require notification and encouragement to act through user-friendliness. In municipal organizations, typically multiple departments are affected by OGD initiatives. Some municipal administrators experience negative value as a result of partaking in OGD initiatives. However, disagreement of value derived from OGD initiative participation does not mean that municipal organizations do not participate.

Structural barriers as value inhibitors were perceived on institutional level and information quality. According to some municipalities, OGD initiatives or cross-municipal data-standards do not fit their institutional context. Infomediaries perceive institutional barriers in municipalities through lack of responsibilities or cross-departmental collaboration. Some barriers are suggested to be surmounted by certain solutions. Infomediaries tend to seek solutions in more coercive policies, whereas municipalities tend to seek infomediary technical support through algorithms and data-science.

4. What factors need to be incorporated in the model in order to increase the creation of value?

Using the insights of the expert review and the case studies, the developed conceptual model was revised. A societal incentive was added as the starting point of OGD initiatives, the development of a data-standard for data publication was added as a separate infomediary task, and four essential value drivers are identified. These value drivers are: (1) institutional support for infomediary initiation, (2) technical support for implementation, (3) reaching out to citizens and (4) actively encouraging and mobilizing citizens.

Revising the ecosystem has resulted in policy recommendations. Infomediaries are advised to find support on the parameter level for data-standards for publication and create hybrid cross-municipal data-standards, be more transparent about possible disadvantages of participating in open government data initiatives, consider the fact that reuse of data is challenging, and to highlight the mutual benefits for both social/political and operational/tactical value. Municipalities should consider the interests of citizens nation-wide, as a focus on municipality residents is too narrow when considering participation in open government data initiatives. Furthermore, municipalities should take advantage of citizen sourcing initiatives to show responsive governance, and ensure high data-quality and user-friendliness by incentivizing and associating with infomediary parties. Lastly, municipal administrators should refrain from assuming that advanced technology and algorithms are already sufficiently developed, and concluding that no municipal work is necessary alongside technical implementation. Additionally, policy recommendations follow for supra-municipal organizations such as BZK and VNG, such as taking a pro-active role in investigating standardization between municipalities and encouragement of these organizations to advocate sustainability of initiatives if initiative continuation is not embedded in municipal procedures.

6.2 Main conclusion

The results of the subsequent analyses allows the following formulation of an answer to the main research question **"How can the creation of value in municipal open government data ecosystems be facilitated?"**. The creation of value in municipal open government data ecosystems occurs by societal incentive-focused open government data initiatives, where use and publication of the data are aligned to serve the initiative. In line with open governance, open government data initiatives should be focused on citizens in the broadest sense (including non data specialists), by requiring passive and preferably active citizen interaction. This increases the creation of social/political and operational/tactical value. In this research, data initiatives initiated by infomediaries emerged as an effective way of ensuring the focus on societal incentives that serve citizens. Furthermore, infomediaries offer valuable resources that local governments might lack in initiating and executing data initiatives. However, infomediaries should have recognition for the work they conduct and municipalities should be transparent about procedures and allow improvement by offering institutional support.

Peer-pressure mechanisms, endorsement by supra-municipal organizations, or the amount of data enthusiasts in municipal organizations may cause those organizations to be more or less open to data initiatives. However, infomediaries may convince municipalities to partake in initiatives by both focusing on both operational/tactical benefits by ameliorating municipal procedures as social/political benefits throughout the roll-out of initiatives focused on citizens. Herein lies a chance for sustaining OGD publication, as OGD publication might come embedded in municipal procedures. However, as operations and reuse are not necessarily aligned there lies a danger as well. The inclusion of parameters in a data-standard are key to consider in balancing operationability for municipal administrators and the potentials for reuse.

In selecting parameters by developing cross-municipal data-standards for OGD publication, this balance is jeopardized as complying to those standards means that especially early adopting municipalities might have to sacrifice municipality specific data-standards, which are essentially better. As municipal administrators represent city residents rather than national citizens in cross-municipal OGD initiatives, possible conflicting interests must be taken into account. In collaboration with representatives of leading open data adopting municipalities, hybrid data-standards should be created that both serve reuse purposes and leave space for operational purposes for municipalities. For municipalities that are not early adopters, clear information should be given about the status-quo of data science. Due to a current lack of this information, infomediaries and municipalities argue about who is responsible for data delivery. In collecting data from multiple municipalities, infomediaries view data delivery conforming to data-standards as a municipal task. Municipalities do sometimes not understand why action is required as the view that algorithms should be able to extract data from minimal sources is widespread. This inhibits nation-wide municipality data delivery. In setting up OGD initiatives, this problem could be mitigated by clear communication between OGD initiators and municipalities.

As for citizens, open government data initiatives should be as inclusive as possible, as these initiatives have the potential to improve essential societal tasks of citizens, such as voting. This is tricky and challenging as citizens are sometimes not aware of their needs. The critical citizens that are not yet engaged need to be found via digital platforms such as social media. Furthermore, they need to be encouraged to act by investing in advanced user-friendliness.

6.3 Contributions of the research

In this section, the newly generated knowledge is explained by the scientific contributions of this research. Finally, societal contributions of the research are given.

6.3.1 Scientific contributions

Throughout this research, there have been scientific insights regarding open government data ecosystems. It therefore expands upon the field of research as conducted in Reggi and Dawes (2016), Dawes and Helbig (2010) and Dawes et al. (2016). Their presented ecosystems are extensive and offer valuable insights on high-level policy requirements to integrate elements. In this research, however, using an ASM view on the ecosystem, enabled it to be portrayed as an actor arena consisting of municipalities, infomediaries, and citizens conducting certain data-related tasks and creating value. In this way, the ecosystem elements defined by Zuiderwijk et al. (2014)

have been made explicit in municipal contexts and attributed to specific ecosystem stakeholders. Additionally, it has yielded insights in how bottom-up societal open government data initiatives emerge in municipal ecosystems.

Dawes et al. (2016) draws certain conclusions with regards to data ecosystems. For instance, open government data initiatives from high-priority societal issues are a means of finding broad stakeholder-wide support. This conclusion is supported by the results of this research. Additionally, when governments are OGD users themselves, according to Dawes et al. (2016), the understanding of data usage increases and stimulates publication and use of OGD. This vision is partly adopted, this research also showed that OGD initiatives embedded in municipal organizational processes, such as in the case of citizen sourcing initiatives, have high chance for success. However, it also brought to light that in municipal contexts data publication and preparation fit for internal usage does not necessarily match external reuse. This thesis has therefore shown that societal, reuse perspectives in OGD initiatives and administrative procedural perspectives are not necessarily aligned. Thus, designed policies should be developed taking into account that the data initiative serves the societal incentive rather than having purely operational-tactical benefits. This thesis thus expands upon the ecosystem literature by the four identified value drivers. In several studies value drivers as success factors have been explored in different countries (Shepherd et al., 2019; Parycek et al., 2014; Susha et al., 2015). Alternatively, in this study we expand upon these factors by four identified value drivers that are mostly related to strengthening stakeholder dedication and collaboration in municipal ecosystems, and therefore potentially contribute to a wide range of research on success factors in open data initiatives.

As OGD is funded by tax payer money, a focus on societal incentives must be increased by honoring the interest of non- data specialist citizens in developing OGD initiatives. The distinction between citizens and infomediaries is explicitly and extensively made because viewing data users as solely data-specialists is too narrow. Work of civic participation (Wijnhoven et al., 2015) and work on active/passive interaction (Meijer et al., 2012; Alexopoulos et al., 2014) was therefore combined to present four ways of developing citizen focused OGD initiatives, varying on the active/passive and administrative/political domain. In this research administrative cases of *citizen informing* and *citizen sourcing* as open data initiatives were researched, but *accountability & transparency* and *collaborative democracy* were identified as additional citizen oriented open data initiatives. Substantiating these ecosystem empirically was regretfully out of the scope of this research, but we highly encourage to research them further. We elaborate on further research in section 6.5.

6.3.2 Societal contributions

This research also brought to light that a variety of elements need to be considered in data ecosystems in municipal contexts. This led to the formulation of policy recommendations in section 5.4. By shaping the coordination of ecosystems, value creating processes from OGD publication and use can be boosted. Infomediaries must be equipped with adequate framing strategies for convincing municipalities to partake in OGD initiatives, and municipalities are advised to reap the benefits of infomediary specialization. Supra-municipal governmental organizations such as BZK and VNG are encouraged to fine-tune the set-up of initiatives and proactively advocate initiative durability.

Further, the developed ecosystem model can be implemented by policy makers and open government data coordinators to identify engagement levels of municipalities, infomediaries and citizens, and construct initiatives that cater to all levels of actors and value creation. The model can reveal tasks necessary for certain value to be created and therefore can be used as a tool to shape the design of open data initiatives, to exploit the potential of value at all levels of engagement.

6.4 Reflection

In this section, a reflection on the research follows. In appendix F the linkage to the Engineering & Policy Analysis program is explained.

6.4.1 Reflection on research choices

The research has been conducted by a single researcher in a time period of a little over six months. Due to limited time and resources, some scoping decisions in the research process had to be made. In this section, a reflection

on these choices follows.

Before reflecting on the choices made and the interpretation of gathered research data, first it must be stressed that the views developed of ecosystem in this study should be seen in the context of bottom-up value creation in municipal OGD ecosystems. In the introduction of this thesis, the reasons for choosing this focus is explained. However, top-down strategies for OGD publication might alter ecosystem views. Secondly, it is in the authors view that 'ordinary' citizens should play a central role in the ecosystem. Hence, the societal incentive for OGD initiatives is very much focused on services for citizens. The results of this research must therefore be interpreted in the light of these two important notions.

Reflection on systematic literature review

- In the theorem of Kitchenham et al. (2009), the quality assessment and the exploration guidelines for finding literature are more extensive. Due to time limitation, these extensive approach could not be adopted throughout this thesis. A more extensive approach might have yielded a more complete and extensive literature overview, which could imply that certain aspects of the conceptual model of the ecosystem might have been conceptualized differently, or left out altogether.
- **Categorization of value, tasks, barriers and success factors in conceptual model** During the research, values were organized into one of three categories. Additionally, barriers and success factors were organized along seven identical categories. These categories, presented in the tables in chapter A represent the interpretation of the researcher, and cannot be considered extensive. Certain factors could have possibly also been attributed to two or more categories, which would have resulted in a much more complex model, which was unfeasible due to time constraints. The presented causal links from certain stakeholder tasks through benefits to values thus represent the researchers' interpretation of the main value creating processes in ecosystems, to which more could be added.
- **The ecosystem design logic binaries** The distinction between the administrative and political binary domains and passive or active citizen interaction is most probably insufficient for taking into account the variety of possible citizen interactions. A lot of data-sets might have both administrative and political dimensions and therefore can not be classified as being purely administrative or political. The same is true for the active and passive interaction binary. Therefore, in future studies, these varieties have to be further researched.

Reflection on expert review

The response rate of the expert review was not as high as expected. A response of seven experts proved sufficient to validate the conceptual model of the ecosystem. However, many attending experts did not offer extensive commentary on ecosystem features or the conceptual framework.

Reflection on case study research

Case study analysis is a labour intensive methodology, and therefore it was truly challenging to collect enough evidence for perceptions. Due to capacity and time limitations, only a limited amount of information could be gathered.

- **Regarding the selection of case studies**. By choosing cases on the administrative level, the political sensitivity of data as a factor complicating data release was disregarded. In section 2.4.1 the main interpretation of the underlying logic of ecosystem design was determined by both active/passive interaction and inclusion in either the political or administrative domain. Regrettably, not all quadrants could be researched. As highlighted in section 4.2, due to several reasons cases on the administrative domain were chosen. However, in more politically sensitive initiatives, perceptions might differ. We therefore urge to compare results of this study to future results of initiatives that lean more towards the the political domain.
- **Recruiting interviewees was unexpectedly challenging**. First, the scope on who to interview was very specific, as the municipality of Stichtse Vecht was most suitable to research for SLIM, it seemed a perfect candidate. However, reaching them took long and eventually via local council complaints, an interview was arranged. A lot of valuable time was lost in this process. Additionally, it would have been

bias reducing if partaking municipal stakeholders were analyzed within the same organization. Regretfully, due to lack of response of the municipality of Utrecht, this could not have been done in the case of SLIM, and the municipality of Velsen had to be researched as well. However, the administrative processes in both municipalities regarding public nuisance were sufficiently comparable to conduct valid perception comparison.

- **Regarding data-interpretation in case study research**. In attributing how stakeholders measured values, perceived barriers, and suggested solutions, various techniques were applied. For instance, amount of quotes regarding a statement was sometimes used as an indicator, because how much a certain aspect was mentioned by a stakeholder was assumed to indicate what was perceived as important for that stakeholder. Within the scope of this research and in honest perception measuring, this seemed a solid approach. However, there is bias in this interpretation as well. The interpretation of perceptions was conducted by an individual researcher on the basis of open interviews and existing records. This interpretation is subjective in essence and therefore easily challenged. However, as the interpretation regarding quotes are given in the appendix, it is open for discussion and could be used as source material for future research.
- **Regarding interpreting the citizen perceptions** The citizen perception was not as extensively measured as initially planned. Originally, the citizen was identified as a crucial player in the scope of this research and hence it would have been good to compare an ecosystem perspective with citizen perceptions. It is problematic to measure the perception of the citizen, as the group is diverse and individual citizens might not represent a crowd, especially in larger municipalities. However, this model does provide possibilities for including this into the framework.

Despite the choices that had to be made in the scope and depth of this research, as well as the various challenges discussed above, recognizable data-interpretation patterns emerged which were usable in order to interpret results and formulate answers to the research questions. Besides, in this research several validity tests were conducted in developing the conceptual model and evaluating it. A systematic literature review as well as evaluation by experts and empirical substantiation in two case studies using multiple information sources was done in order to minimize bias.

6.4.2 Usefulness of prescribed technique for further research

In this section, a reflection on methodologies, approach, and techniques follows in the light of conducting further research.

Using Systematic Literature Review, expert review and case study research to measure perceptions in ASM approaches

In ASM, analyzing and systematically comparing the perceptions of stakeholders is central. In this thesis, the execution of an extensive literature review on possible influences on these perception helped to shape the search for perceptions in case studies. In other words, when it is known what possible perceptions are, it is clearer what should be considered in analyzing perceptions. Meanwhile, it was still possible to find explanations for perceptions that were not accounted for in the literature, such as novel barriers that were particularly associated with the citizen sourcing initiative, like the trade-off between information richness for reuse and data-standard feasibility. Therefore, we argue it does not set or limit the potential of research when expectations exist for certain barriers; they must be taken into account, but are not set in stone. Additionally, case material allowed a validation of stakeholder perceptions, such as OGD initiative folders and information material. Thus, the combination of a literature review and using different case material in analyzing stakeholder perceptions proved useful technique to conduct ASM-analyses, and could easily be expanded upon in future research.

Open interviews were exceptionally useful to measure perceptions, even though the researcher's task is very labour-intensive. In analyzing quotes, logics of reasoning were deduced, which led to the identification of structural barriers and surmountable barriers. Structurally comparing these barriers as mentioned by stakeholders and putting them in context allowed identification of which barriers are structural and which barriers are more easily surmountable. This was exceptionally useful to give shape to possible policy implementations and give stakeholder-specific recommendations.

Using ASM for open government data research

This thesis argues that because of a current gap between publication and use of data, open government data research must focus more on perceived values. Furthermore, as open government data initiatives affect governmental operations, economic processes, and societal processes the values of multiple groups of people need to be compared in order to shape future open government data initiatives in more durable ways. The theorem of ASM is therefore useful to further examine the actor dimension in value creating processes and policy making. In the next section, suggestions will be made for further research to improve ASM-research designs in the field op open government.

6.5 Suggestions for further research

A list of suggestion for further research is given below.

- **Expand CCM techniques in open government data research**. In observations during this research, there was a strong sense of strategic behaviour from municipal agents. By further applying the concept of CCM in subsequent research, more detailed insights can be gained into possible conflicting values and strategic behaviour in open government data initiatives.
- **Conduct more case studies**. We urge researchers to conduct more case studies on municipal open government data initiatives with different kind of infomediaries, ecosystem designs on or leaning towards the political domain, and more complex national data-standards then were characterized by the chosen cases. Conduct additional perception comparisons with more interviewees and more stakeholders in municipal organizations, especially at different levels in organizations.
- **Validate the results of this research**. Reproduce the results of this research and evaluate the methodology by conducting the same analyses using the existing data-sources. In this way, the results of this research can be validated by additional researchers. Also, validate and expand on the found perceptions of values, structural barriers, and suggested solutions by conducting surveys among bigger groups of infomediaries and municipalities and adding these perceptions to the comparison methods in ASM.
- **Conduct surveys among citizens** In the future, surveys among big representative groups of citizens should be conducted in order to aggregate the citizen perception. Furthermore, it would be insightful to measure perception differences between citizens of different ages, genders, and (socio-economic) backgrounds.

Appendix A

Systematic Literature review

Table A.1: Characteristics of selected studies for systematic literature review

	Article	Topic	Research goal	Methodology	Local?
1	Alexopoulos, Loukis, and Charalabidis (2014)	Open Data, Feedback	To what extend existing open data platforms have bidirectional communication tools	Survey	low
2	Attard, Orlandi, Scerri, and Auer (2015)	Open Government Data	To create a systemic assessment of initiatives for the release of open government data	Systematic survey	low
3	Charalabidis, Loukis, and Alexopoulos (2014)	OGD infrastructures	To construct a systemic evaluation methodology of OGD new generation infrastructures	Newly developed Evaluation Methodology with survey	low
4	Conradie and Choenni (2014)	Open data policies	To investigate barriers of local governmental agents for releasing OGD	Workshops, Questionnaires, Surveys, Desk research	high
5	Dawes, Vidiasova, and Parkhimovich (2016)	OGD ecosystem	To develop a model of an ecosystem approach in OGD and to evaluate it in local governance case studies	Framework development, Case studies	high
6	Gascó-Hernández, Martin, Reggi, Pyo, and Luna-Reyes (2018)	Open Government Data	To open the debate in training citizens and users on OGD use to increase awareness	Literature review, Cases studies	low
7	Janssen and Zuiderwijk (2014)	Open Data, Infomediary business models	Contribution to the knowledge of existing infomediary business models	Case studies	low
8	Janssen, Charalabidis, and Zuiderwijk (2012)	Open data and open government	To provide an overview of benefits and adoption barriers of open government and OGD	Interviews, Workshops	low
9	Jetzek, Avital, and Bjorn-Andersen (2013)	Open Government Data	To investigate the value created by Open government Data	Conceptual Model development, Survey, PLS method	low
10	Johnson and Greene (2017)	Open Data Infomediaries	To provide an overview of 5 categories infomedaries in four Canadian municipal cases	Case studies	high
11	Johnson and Robinson (2014)	Civic Participation in Hackathons	Understanding civic hackathons through the lens of civic participation and government procurement	Literature review	low
12	Lee and Kwak (2012)	E-Government and Social Media	Aims to fill the gap between the use of social media and the implementation of open government initiatives	Conceptual Model development	low
13	Meijer, Curtin, and Hillebrandt (2012)	Open Government, Participation	To investigate the relationship of concepts openness, transparency and participation and interactions between	Literature review	low
14	Parycek, Hochtl, and Ginner (2014)	Open Government Data	To evaluate the implementation of OGD in the city of Vienna, Austria	Survey	high
15	Pereira, Macadar, Luciano, and Testa (2017)	OGD, Smart city	To evaluate value creation of OGD in smart city context	Framework development, Case studies	high
16	Reggi and Dawes (2016)	E-government, OGD Ecosystem	To build on an existing framework of two OGD value streams: innovation and civic participation	Exploratory Case study	low
17	Safarov, Meijer, and Grimmelikhuijsen (2017)	Open government data utilization	To order the existing literature and to point out directions for future research	Systematic literature review	low
18	Shepherd et al. (2019)	Open Government	To highlight perspectives on open government local initiatives in England on procedures and presumed implications	Literature review; case studies	high
19	Sieber and Johnson (2015)	Open Data	To describe different models of open data and to assess challenges and implication of different models	Literature review, Conceptual Model Development	low

	Article	Topic	Research goal	Methodology	Local?
20	Susha, Zuiderwijk, Charalabidis, Parycek, and Janssen (2015)	Open Data	To identify the critical factors contributing to the success of an Open Data initiative	Workshop, Case study	high
21	Vetrò et al. (2016)	Open Government Data; quality	To develop and test a comprehensive framework on assessing data quality of OGD	Framework development, Case studies	low
22	Wijnhoven, Ehrenhard, and Kuhn (2015)	Open Government, Civic participation	Identification of participation motives	Literature review, Survey	medium
23	Zuiderwijk and Janssen (2014)	Open data policies and initiatives	Allowing comparison of open data initiatives by developing a framework	Framework development, Case studies	low
24	Zuiderwijk, Janssen, and Davis (2014)	Open Data Ecosystem	An overview is provided of the essential elements of an open data ecosystem	Systematic literature review, scenario analysis	low
25	Zuiderwijk, Janssen, and Susha (2016)	Open Data Interaction	To evaluate whether actor interactions, quality indicators and meta-data improved OGD use	Quasi experiments	low

Appendix B

Expert review Survey

B.1 Questionnaire

Data-ecosystemen

Mijn afstudeeronderzoek gaat over waarde-creatie in open data initiatieven op gemeentelijk niveau. Mijn assumptie is dat waarde wordt gecreëerd doordat gemeenten, en burgers met daartussen *infomediaries* 'iets doen' met de data in een zogenoemd ecosysteem. Onder *infomediairies* versta ik experts op het gebied van data die de interactie van burgers met data faciliteren (bijvoorbeeld dataspecialisten bij mediaorganisaties, NGO's, universiteiten, de overheid of bedrijven).

Ik wil u vragen om met uw kennis over open data onderstaande vragenlijst in te vullen. De vragenlijst heeft 10 vragen en het invullen kost ongeveer 10 minuten.

Bedankt voor het invullen.

Akkoord (Zie informatie bij onderzoek verklaring en privacy statement op de pagina 6)

Gaat u akkoord met het verzamelen van informatie omtrent uw mening over het ecosysteem, werkgever en functie met het doel mijn interpretatie van het gemeentelijke open data ecosysteem te evalueren?

- ◯ Ja, ik ga akkoord.
- ◯ Nee, ik ga niet akkoord (in dit geval stopt de evaluatie en kan ik uw input helaas niet verwerken).

Vragen:

1. Bij welke organisatie bent u werkzaam en wat is uw functie?

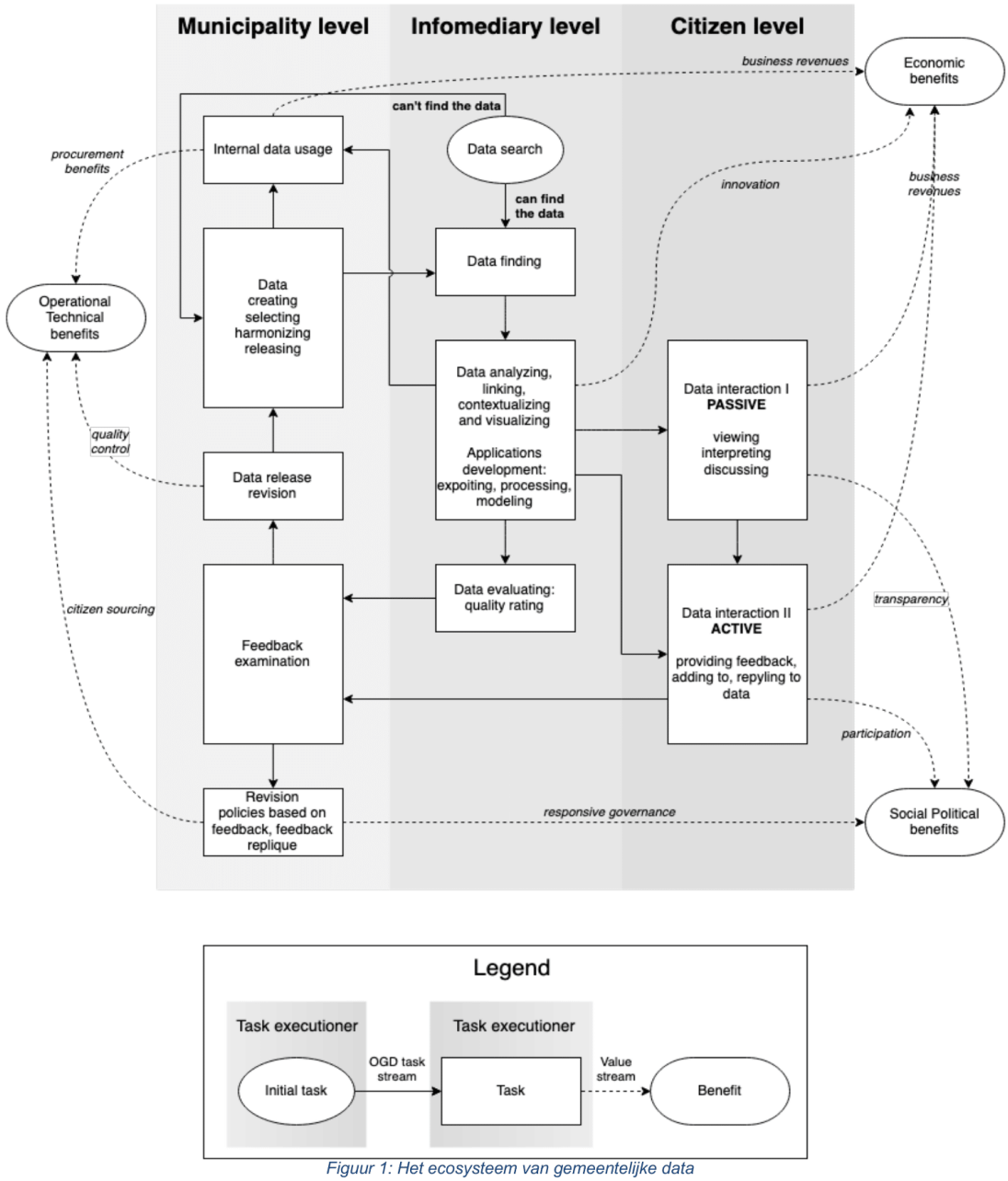
   ◯ Organisatie: _____

   ◯ Functie: _____

2. Wat ziet u als uw rol(len) in het veld van open data?

!! VOEL U VRIJ OM IN DE FIGUUR TE SCHRIJVEN, TE OMCIRKELEN, ETC. !!

1



Figuur 1: Het ecosysteem van gemeentelijke data

2

3. In welke mate is het gepresenteerde ecosysteem **compleet**?

	1	2	3	4	5	6	7	8	9	10	
Incompleet	O	O	O	O	O	O	O	O	O	O	Compleet

Kunt u uw antwoord toelichten?

4. In welke mate is het gepresenteerde ecosysteem **duidelijk** en **begrijpelijk**?

	1	2	3	4	5	6	7	8	9	10	
Zeer onduidelijk	O	O	O	O	O	O	O	O	O	O	Zeer duidelijk

Kunt u uw antwoord toelichten?

5. In welke mate is het gepresenteerde ecosysteem **een representatieve weergave van de werkelijkheid?**

	1	2	3	4	5	6	7	8	9	10	
Niet representatief	O	O	O	O	O	O	O	O	O	O	Representatief

3

Kunt u uw antwoord toelichten?

6. In welke mate heeft het gepresenteerde ecosysteem u nieuwe inzichten gegeven over **hoe** waarde **wordt gecreëerd** van proactieve data ontsluiting bij gemeenten?

	1	2	3	4	5	6	7	8	9	10	
Geen nieuwe inzichten	O	O	O	O	O	O	O	O	O	O	Veel nieuwe inzichten

Kunt u uw antwoord toelichten?

7. In hoeverre is het presenteerde ecosysteem bruikbaar voor de **vorming van beleid** omtrent open data?

	1	2	3	4	5	6	7	8	9	10	
Niet bruikbaar	O	O	O	O	O	O	O	O	O	O	Zeer bruikbaar

Kunt u uw antwoord toelichten?

4

8. In welke mate is het gepresenteerde ecosysteem **bruikbaar voor uw werk**?

	1	2	3	4	5	6	7	8	9	10	
Niet bruikbaar	O	O	O	O	O	O	O	O	O	O	Zeer bruikbaar

Kunt u uw antwoord toelichten?

9. Heeft u nog aanvullingen op het gepresenteerde ecosysteem op het gebied van ***tasks***, en ***value streams***.?

5

10. Aanvullende opmerkingen:

Dank u wel voor het invullen van deze survey. Hiermee levert u een zeer waardevolle bijdrage aan mijn onderzoek.

6

Deze pagina mag u afscheuren

Onderzoekverklaring en Privacy Statement

Doel van data verzameling
Geachte respondent,

Het doel van deze vragenlijst is het evalueren van het gemeentelijke open data ecosysteem bij experts op het gebied van open data beleid. De evaluatie vindt plaats voor een afstudeerproject aan de TU Delft. De scriptie wordt gepubliceerd op de website van de TU Delft. De antwoorden die u in deze survey heeft gegeven zullen anoniem gerapporteerd worden.

Bedankt voor het invullen.

Met vriendelijke groet,
Jesse Hablé

Welke data worden verzameld?
Ik verzamel data over uw mening over het open data ecosysteem. Daarnaast verzamel ik informatie over werkgever en functie van de respondent, deze data zijn voor het onderzoek van belang om de context van de antwoorden van de respondent te duiden.

Hoe en hoelang wordt informatie bewaard?
De ingevulde formulieren zijn alleen beschikbaar voor Jesse Hablé, de onderzoeker, en de interne begeleiders bij de TU Delft en zullen vertrouwelijk worden behandeld. Tot 31 augustus 2019 zullen de ingevulde formulieren worden bewaard. Daarna zullen ze worden vernietigd. U heeft het recht deze in te zien en/of aan te passen voordat ze vernietigd worden, u kunt dit doen door een mail te sturen naar J.J.Hable@student.tudelft.nl. Geanonimiseerde data zal mogelijk als open data worden gepubliceerd worden bij 4TU.

7

B.2 Results

Table B.1: Respondent characteristics

Respondent	**Organisation**	**Function**	**Role**
r1	Leer- en Expertisepunt Open Overheid	Coördinator	Kennismakelaar, verbinder tussen hergebruiker & overheid en overheiden onderling. Zichtbaar maken wat er gebeurt. Beleidsadviseur
r2	Universiteit Urecht	Universitair docent	Onderzoeker van open data
r3	Provincie Zuid-Holland	Projecteider Transparantie en Open Provincie	Aanjager van het toepassen van open data bij de verschilde opgaven waar de provincie mee te maken heeft. Daarnaast zoeken naar samenwerking tussen procvincies.
r4	Provincie Zuid-Holland	Projectleider	Wisselwerking beleid & data science
r5	CBS	Product owner Open Data	Trendsetter vanuit perspectief aanbieder
r6	The Green Land	Open Data Consultant	Advies aan overheden op het gebied van inzetten van openen data perspectief. Zowel intern als extern
r7	The Green Land	Partner	Open overheid leader

Table B.2: Respondent answers to survey questions

	4		**5**		**6**		**7**		**8**		**9**		**10**
r1	7	Het 'waarom', maatschappelijke vraagstuk zou kunnen worden toegevoegd	8	Heldere uitleg en teksten	8	Rollen en acties zijn herkenbaar	5	passieve / actieve onderscheid is interessant	8	In doelgroepen en behoeften die helder zijn	8	verhelderend	Ook aandacht voor data gebruik tussen verschillende overheden kan toevoeging zijn
r2	8	Voeg toe: relevante maatschappelijke vraagstuk. Context (governance). Democratische benefits (of valt dat onder social/political). Mooi dat je onderscheid maakt tussen passief en actief	7	Het is heel uitgebreid en dat maakt het minder overzichtelijk. Kan je het simplificeren en inzichterlijke maken?	8	Goed, maar er ontbreken dingen (zie vorige vraag)	6	Onderscheid actief / passief is interessant	7	daarbij ook koppeling aan beleidscyclus kan interessante aanvulling zijn.	8	mooie samenvoeging van meerdere wetenschappelijke modellen. kan leiden tot nieuwe inzichten	succes!
r3	5	De data staaat hierin sterk centraal, terwijl naar mijn inzien het gaat om de opgave en is data daarvoor een middel	5	onduidelijk waar je moet beginnen in het model met lezen en daardoor de verschillende invloeden te interpreteren	4	Meer idealistisch dan reëel	3		6		2		
r4	7		8		6		8		7			Lastig te zeggen, behoeft concrete invulling	

	4		5		6		7		8		9		10
r5	5	Ecosysteem is een microsysteem gedacht vanuit de aanbieder. Als je vanuit de vraag, dan maakt waarschijnlijk de gemeente niet uit.	8		5	Kan geen goed oordeel geven	3	Ben langer actief in open data	5	Vraag blijft, kijk je vanuit de aanbieder, of vanuit de burger. Die heeft te maken met 'de overheid'	2	Zit bij landelijke organisatie	Waarde creëer je door 1 taal te spreken. In mijn ogen valt of staat dat met een infrastuctuur waarbij je niet afhankelijk bent van afzonderlijke gemeenten, provincies, miniteries
r6	5	De realiteit / context ontbreekt	6		3		3		3		5		
r7	5		4		7		4		4		4		

Appendix C

Interview Protocol

In this appendix, the interview protocol is given. Since the interviewees were all fluent in Dutch, the invitation e-mail and consent form were in Dutch. The documents are presented in this appendix in orgininal Dutch state.

C.1 Interview invitation e-mail

Onderwerp: Interviewverzoek over NAME INITIATIVE

Geachte heer, mevrouw NAME,

Ik kreeg uw contactgegevens via NAME. Mijn naam is Jesse Hablé en ik doe mijn afstudeeronderzoek in het kader van mijn masterstudie Engineering and Policy Analysis aan de Technische Universiteit Delft bij de Open State Foundation. Het onderwerp van mijn onderzoek luidt: "Waardecreatie uit pro-actieve data publicatie bij gemeenten", ofwel: voor wat voor een doelen is open gemeentelijke data een middel, wat bevordert het waarde creatie proces en wat houdt het tegen.

In de komende fase van mijn onderzoek doe ik case-studies naar open data initiatieven en zo kwam ik uit op de case rondom NAME INITIATIVE. Ik zou u of iemand in uw organisatie heel graag in de rol als ROLE IN INITIATIVE willen interviewen voor mijn onderzoek. Het interview zal niet langer dan een uur duren. Uiteraard kom ik graag naar een locatie toe die u goed uitkomt op een moment dat u goed schikt. Ik dien de interviews gehouden te hebben voor 8 juni.

Graag verneem ik of u hier voor open staat. Ik zal dan een aantal opties sturen zodat we een interview kunnen inplannen.

Met vriendelijke groet, Jesse Hablé

C.2 Consent form to be signed by interviewee

INFORMATIE OVER HET ONDERZOEK

U bent uitgenodigd voor een interview rondom open data bij Nederlandse gemeenten. Dit interview is een onderdeel van een afstudeeropdracht aan de Technische Universiteit Delft. Voordat u beslist om mee te doen is het belangrijk dat u begrijpt waarom dit onderzoek wordt gedaan en wat het inhoudt. Leest u dit formulier daarom zorgvuldig door.

Wat is het doel van dit onderzoek?

Ik ben geïnteresseerd in het vergroten van waarde van open data voor maatschappelijke vraagstukken bij Nederlandse gemeenten.

Wie is de onderzoeker?

Dit onderzoek wordt uitgevoerd door Jesse Hablé, als afstudeeropdracht van de masteropleiding Engineering & Policy Analysis aan de Technische Universiteit Delft, bij de faculteit Techniek, Bestuur en Management. De Open State Foundation is de externe organisatie die opdracht heeft gegeven voor het onderzoek.

Wie worden geïnterviewd?

Gemeentemedewerkerts en anderse stakeholders in het waardecreatieproces uit open data worden geinterviewd.

Wat wordt er met de informatie gedaan?

Er zullen audio-opnames en transcripten van de interviews worden gemaakt en deze zullen vertrouwelijk bewaard blijven tot het einde van het onderzoek. Alleen de onderzoeker heeft toegang tot de audio-opnames en transcripten.

In de scriptie wordt informatie van de interviews verwerkt. Mogelijk worden quotes van de geinterviewde in de scriptie overgenomen. Er zal bij deze informatie verwezen worden naar de functie en de werkgever van de geinterviewde, niet naar de naam van de geinterviewde. De scriptie wordt zoals dat gebruikelijk is gepubliceerd op de website van de database van de universiteit.

Zijn er risico's verbonden aan deze studie?

Ik voorzie geen risico's voor deelnemers aan het project. Er wordt gevraagd naar de perceptie van de geinterviewde op de waarde van open data projecten en de rollen die daarin gespeeld worden. Het onderzoek richt zich op verbetering van de kennis en beleidsvorming omtrent open data bij gemeenten.

Wat als u zich wilt terugtrekken?

Uw deelname is volledig vrijwillig en u kan op elk moment stoppen, zonder dat u een reden hoeft aan te geven en zonder repercussies.

Wanneer en waar vindt het plaats?

Het interview vindt op locatie plaats.

Hoe lang zal het duren?

Het gesprek duurt maximaal 1 uur. Het project zal lopen tot de zomer van 2019.

Contact informatie

Als u verder nog vragen heeft kunt u contact opnemen met Jesse Hablé via J.J.Hable@student.tudelft.nl of jesse@openstate.eu

Project Titel: Waardecreatie uit Open data

Onderzoeker: Jesse Hablé

Het doel en de aard van het onderzoek is uitgelegd op schrift □

Ik begrijp dat mijn deelname vrijwillig is en dat ik elk moment kan stoppen met deelnemen aan deze studie zowel voordat de studie begint als tijdens de studie zonder repercussies □

Ik geef toestemming voor audio-opname □

Ik begrijp dat er zal worden verwezen naar mijn functie en organisatie waar ik werk bij het opschrijven van de resultaten in de scriptie □

Ik begrijp dat informatie en mogelijke quotes uit het interview worden gepubliceerd in de scriptie en ik geef hierbij toestemming □

Ik ga akkoord met deelname aan deze studie. □

Door dit formulier te ondertekenen geeft u aan dat u het deelname formulier gelezen en begrepen heeft en dat u akkoord gaat met deelname aan dit onderzoek.

Uw naam:

Uw handtekening: *Datum:*

C.3 Protocol and refinement procedure

A standardized questionnaire with an open end has been developed in order to yield comparable results and to stay flexible. In order to refine the protocol a feedback session with supervisor Anneke Zuiderwijk was held during a supervisor feedback session on May 2nd. On May 3rd, a pilot of the adjusted questionnaire was conducted by the adjunct director of OSF. He took the role of a Dutch small municipality who was not yet partaking in an initiative. From the feedback and pilot sessions, the following adjustments to the protocol were made:

- The questionnaire turned out to be written too much from the all knowing perspective. Certain concepts,

such as 'open data' had to be clarified in order to make sense of the terms.

- The questions applied too much to an infomediary or partaking municipality. In order to get answers to questions like 'what data are necessary for the initiative', for non-partaking municipal administrators examples of data that used in an initiative should be asked. Therefore, the questions were tweaked at the level of non-partaking municipalities as well.
- the role of 'the municipality' turned out to be very different depending on the context. Some municipal services are executed by common arrangements (Dutch: *gemeenschappelijke regelingen*).
- Sometimes, question did not had to be asked, because the answer was too obvious and only consumed time rather than gained relevant information. These questions, like "Which municipalities partook"?.
- In the pilot the answers to tasks related to process and related to value creation differed. Therefore, in the questionnaire the decision was made to ask about both tasks.

After the first round of feedback was gathered, adjustments were made to the questionnaires. As it turned out, questions had to be formulated essentially different depending on the stakeholder. However, the perception on the same aspect could be asked to all interviewees.

The second round of feedback gathering on the questionnaire occurred on May 6th 2019 with senior project manager at Open State Foundation. She took the role of a participating municipality.

- Some terms had to be simplified, like operational/tactical benefits.
- Referring to 'The role of' stakeholders was sometimes considered a little vague as well. However, clarification worked well.
- A lot of times, examples had to be given. However, to stay open for input and to avoid bias there was chosen not to guide answers by naming probable examples, presumed benefits etc.
- Initially, the part of the questionnaire about roles was asked before the part about value. Yet is turned out in the tests that interviewees immediately started to talk about the value aspects. Hence, the sequence of these parts was reversed.

After the refinement of the protocol, three versions of the questionnaire were made. One for the infomediary, one for a partaking municipality and one for a non-partaking municipality.

The following introductory steps were followed to get the interviewees

- **Send invitation e-mail**
- **Schedule appointment on location**
- **Interview**
- **Send thank you e-mail**

The interview procedure was as followed:

- **Introduction**: Mijn naam is Jesse Hablé, en ik studeer af voor mijn masteropleiding Engineering & Policy Analysis aan de TU Delft. Mijn onderzoek gaat over waarde creatie uit open data van gemeenten. Het gaat om data die nog niet persé open moet worden vrijgegeven als open data, maar die wordt geadviseerd door centrale organisaties als BZK, de VNG en OSF. In mijn onderzoek gaat het om initiatieven die burgers en gemeentes dichterbij elkaar brengen middels open data, zoals het initatief NAAM. Ik ga u wat vragen over ¡naam Initiatief¿ en de waarde uit open data die er in dit initiatief wordt gecreëerd. Ik ben benieuwd hoe u uw rol ziet, collega's binnen de gemeente en burgers. Het is van groot belang dat u eerlijke antwoorden geeft alsof u de beslissingen in het echt zou moeten nemen. Er zijn geen foute antwoorden, ik ben benieuwd hoe u er over denkt en waarom beslissingen zijn genomen hoe ze zijn genomen. Ik heb geprobeerd vragen conreet te maken, en vraag u om bondig maar volledig te antwoorden.
- **Consent**: Consentform was showed and signed by the interviewee.
- **Questions**
    1. General part
    2. Part about data
    3. Part about values

4. Part about roles

- **Wrap-up**

To find the elements of the blueprint ecosystem that stakeholder perceive as present and executed questions will be asked in terms of responsibilities and executions of tasks, when benefits will be achieved and the flow of tasks. In figure C.1 an empty version of the blueprint ecosystem as identified in chapter 3 can be found. Then, using the method of Castillo-Montoya (2016), the questions have been formulated to make sure that all possible tasks are covered in interview questions in a protocol matrix. Exemplification has been asked about responsibilities and execution as well.

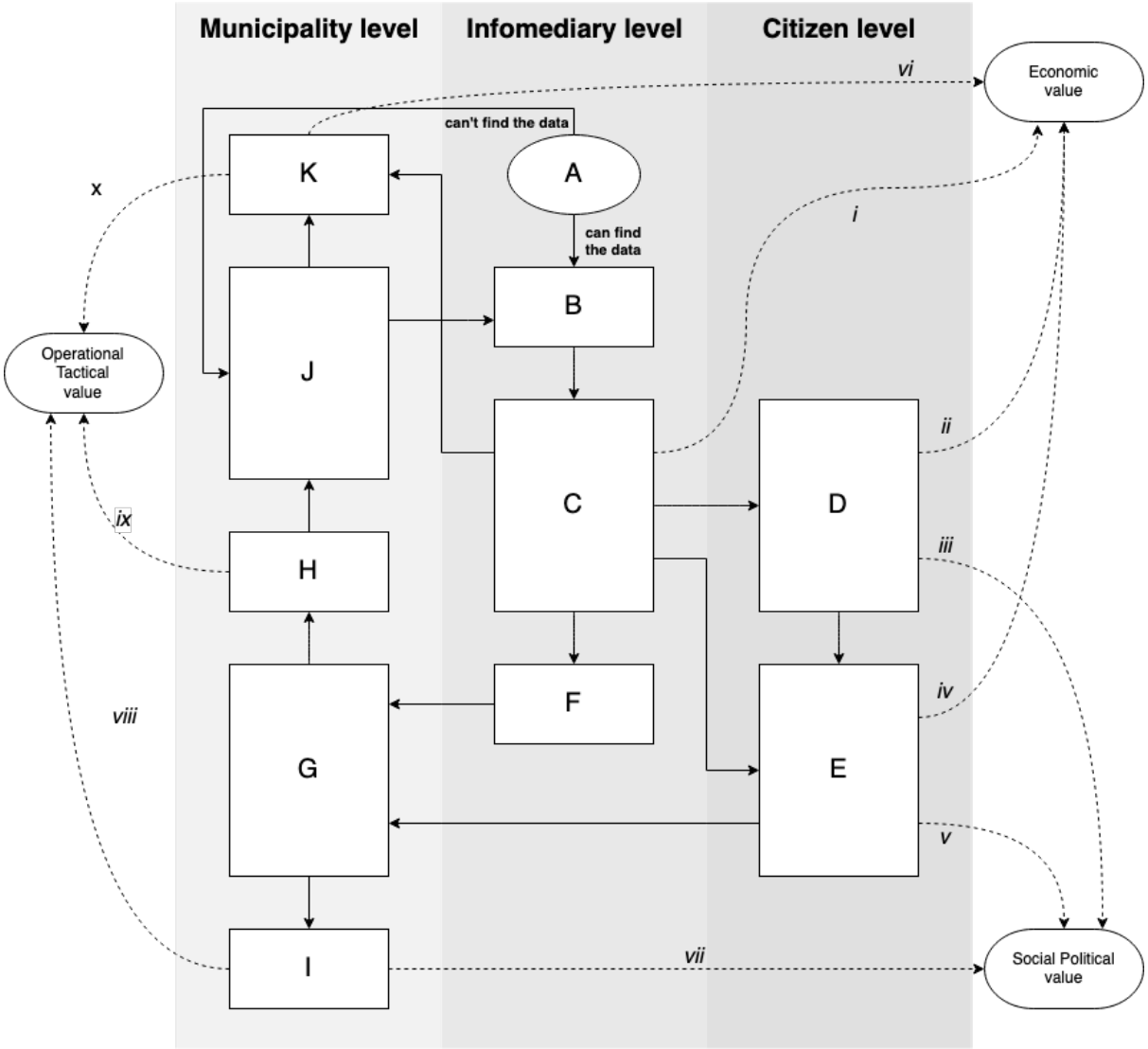


Figure C.1: Perception gatherings on OGD ecosystem

Secondly, the benefit flows, indicated with i till x in figure C.1 are presumed benefits in an ecosystem. However, in interview questions there was refrained from explicit mentioning of these benefits, to avoid bias. Rather, first interviewees were asked on their perceptions on value that is being created according to them. To assess further development on values that interviewees have, the three categories (social/political, economic and operational/tactical) can be named. The protocol matrices can be found in tables C.1 and C.2.

Table C.1: Protocol matrix for Value aspect

Question	i	ii	iii	iv	v	vi	vii	viii	ix	x
3.1	X	X	X	X	X	X	X	X	X	X
3.2	X	X	X	X	X	X	X	X	X	X
3.3	X	X	X	X	X	X	X	X	X	X
3.4	X	X	X	X	X	X	X	X	X	X
3.5	X	X		X		X				
3.6	X	X		X		X				
3.7	X	X		X		X				
3.8			X		X		X			
3.9			X		X		X			
3.10			X		X		X			
3.11								X	X	X
3.12								X	X	X
3.13								X	X	X

Table C.2: Protocol matrix for Task aspect

Question	A	B	C	D	E	F	G	H	I	J	K
2.1	X										
2.2	X	X								X	
2.3	X	X								X	
2.4			X			X				X	
2.5		X	X								
2.6			X								
4.1	X	X	X			X					
4.2	X	X	X			X					
4.3							X	X	X	X	X
4.4							X	X	X	X	X
4.5							X	X	X	X	X
4.6							X	X	X	X	X
4.7				X	X						
4.8				X	X						
4.9	X	X	X	X	X	X	X	X	X	X	X
4.10	X	X	X	X	X	X	X	X	X	X	X
4.11	X	X	X	X	X	X	X	X	X	X	X
4.12	X	X	X	X	X	X	X	X	X	X	X
4.13					X	X	X				
4.14							X	X	X	X	
4.15							X	X	X	X	
4.16											X

C.4 Questions

ALGEMEEN

	INFOMEDIARY	*PARTAKING MUNICIPALITY*	*NON-PARTAKING MUNICIPALITY*
1	Wanneer begon het initiatief?	Wanneer begon het initiatief?	Bent u bekend met het initiatief?
2	Sinds wanneer bent u betrokken bij het initiatief?	Sinds wanneer bent u betrokken bij het initiatief?	
3	Door welke organisatie (gemeente, ministerie, etc) is het initiatief genomen?	Door welke organisatie (gemeente, ministerie, etc) is het initiatief genomen?	Door welke organisatie (gemeente, ministerie, etc) is het initiatief genomen?
4	Wat was de voornaamste reden voor gemeentes om deel te nemen?	Wat was de voornaamste reden voor uw gemeente om deel te nemen?	Waar zat voor u de voornaamste twijfel in om deel te nemen?
5	Wat was de voornaamste reden voor gemeentes om niet deel te nemen?	Waar zat voor u de voornaamste twijfel in om niet deel te nemen?	Wat was de voornaamste reden voor uw gemeente om niet deel te nemen?
6	Welke gemeente(s) ziet u als voorloper, achterloper en volger?	Ziet u uzelf als voorloper, achterloper of volger?	Ziet u uzelf als voorloper, achterloper of volger?

DATA

	INFOMEDIARY	*PARTAKING MUNICIPALITY*	*NON-PARTAKING MUNICIPALITY*
	De volgende vragen hebben betrekking op de data die worden gebruikt bij het initiatief. Bij SLIM Melden gaat het ook om data over de meldingen zelf		*De volgende vragen hebben betrekking op de data die worden gebruikt bij het initiatief. Bij SLIM Melden gaat het ook om data over de meldingen zelf. Gemeentelijke data die nodig waren voor het initiatief waren*
1	Welke gemeentelijke data waren allemaal nodig voor het initiatief?	Welke gemeentelijke data waren allemaal nodig voor het initiatief?	
2	In hoeverre waren de benodigde data al beschikbaar voor het initiatief?	In hoeverre waren de benodigde data al beschikbaar voor het initiatief?	In hoeverre zijn deze data al beschikbaar bij de gemeente?
3	Hoe en door wiens toedoen zijn additioniële data voor het initiatief verkregen?	Hoe en door wiens toedoen zijn additioniële data voor het initiatief verkregen?	Welke extra data zouden er moeten worden vergregen?
4	In welke mate moeten de data juridisch gecontroleerd worden op privacygevoeligheid?	In welke mate moeten de data juridisch gecontroleerd worden op privacygevoeligheid?	In welke mate zijn deze data ongeschikt om juridische redenen als privacygevoeligheid?
5	In welke mate moeten er complexe veranderingen aan gemeentelijke data gebeuren voor het project? (Bijvoorbeeld: wijzigen format, compleet maken, administratie wijzigen)	In welke mate moesten er complexe veranderingen aan de data gebeuren voor het project? (Bijvoorbeeld: wijzigen format, compleet maken, analyseren)	Zou er iets moeten gebeuren aan de data om mee te doen aan het project? (Bijvoorbeeld: wijzigen format, compleet maken, analyseren)
6	Door wie worden deze aanpassingen gedaan?	Door wie zijn die aanpassingen gedaan?	Hoe hebben de datavereisten bijgedragen aan de beslissing om niet deel te nemen aan het project?

WAARDEN

	INFOMEDIARY	*PARTAKING MUNICIPALITY*	*NON-PARTAKING MUNICIPALITY*
1	Wat schortte er volgens aan het proces bij de gemeente vóór het initiatief?	Kunt u kort toelichten hoe het proces voor het initiatief verliep?	Kunt u kort toelichten hoe het proces van het initiatief bij u verloopt?
2	Wat is de voornaamste (maatschappelijke) meerwaarde van het initiatieft ten opzichte uw proces?	Wat is de voornaamste (maatschappelijke) meerwaarde van het initiatief ten opzichte van uw proces?	Ziet u de meerwaarde van het initiatief ten opzichte uw proces?
3	Welke redenen hebben gemeenten om wel mee te doen?	Wat was voor uw gemeente de voornaamste reden om mee te doen?	Wat was voor uw gemeente de voornaamste reden om niet mee te doen?
	Ik ga nu graag wat dieper in op welke waarden het intitiatief wel of niet heeft. Ik noem drie categorieën waarde en ik vraag u dan welke waarde volgens u het intitiatief heeft, waarde voor wie en hoe dit wordt gecreëerd?		
4	Als ik drie categorieën noem, waar ligt volgens u de meeste waarde in dit project (economisch, sociaa/politiek,en operationeel/tactisch?)	Als ik drie categorieën noem, waar ligt volgens u de meeste waarde in dit project (economisch, sociaal/politiek,en operationeel/tactisch?)	Als ik drie categorieën noem, waar ligt volgens u de meeste waarde in dit project (economisch, sociaal/politiek,en operationeel/tactisch?)
5	In hoeverre heeft het project economische waarde denkt u?	In hoeverre heeft het project economische waarde denkt u?	In hoeverre heeft het project economische waarde denkt u?
6	Hoe wordt volgens u deze waarde gecreëerd?	Hoe wordt volgens u deze waarde gecreëerd?	Hoe wordt volgens u deze waarde gecreëerd?
7	Voor wie is die waarde? (Burgers, gemeentes, infomediaries)	Voor wie is die waarde? (Burgers, gemeentes, infomediaries)	Voor wie is die waarde? (Burgers, gemeentes, infomediaries)
8	In hoeverre heeft het project sociale en politieke waarde?	In hoeverre heeft het project sociale en politieke waarde?	In hoeverre heeft het project sociale en politieke waarde?
9	Hoe wordt volgens u deze waarde gecreëerd?	Hoe wordt volgens u deze waarde gecreëerd?	Hoe wordt volgens u deze waarde gecreëerd?
10	Voor wie is die waarde? (Burgers, gemeentes, infomediaries)	Voor wie is die waarde? (Burgers, gemeentes, infomediaries)	Voor wie is die waarde? (Burgers, gemeentes, infomediaries)
11	In hoeverre heeft het project operationele/tactische waarde?	In hoeverre heeft het project operationele/tactische waarde?	In hoeverre heeft het project operationele/tactische waarde?
12	Hoe wordt volgens u deze waarde gecreëerd?	Hoe wordt volgens u deze waarde gecreëerd?	Hoe wordt volgens u deze waarde gecreëerd?
13	Voor wie is die waarde? (Burgers, gemeentes, infomediaries)	Voor wie is die waarde? (Burgers, gemeentes, infomediaries)	Voor wie is die waarde? (Burgers, gemeentes, infomediaries)

ROLLEN

	INFOMEDIARY	*PARTAKING MUNICIPALITY*	*NON-PARTAKING MUNICIPALITY*
1	Wat is uw rol als **Infomediary** in dit initatief?	Wat is de rol van de **Infomediary** in dit initiatief?	
2	In hoeverre wordt deze rol ook vervuld?	In hoeverre wordt deze rol ook vervuld?	
3	Wie is de hoofdverantwoordelijke bij de **Gemeente** in dit initiatief? (Welke afdeling, welke persoon etc.)	Wat is uw individuele rol in dit initatief?	Wat is uw individuele rol in dat proces?
4	In hoeverre wordt deze rol ook vervuld?	In hoeverre lukt het u om deze rol te vervullen?	In hoeverre lukt het u deze rol te vervullen?
5	Welke partijen binnen de gemeenten zijn er nog meer bij betrokken?	Naast de uwe, welke andere rollen zijn er binnen de gemeente in het intiatief?	Naast de uwe, welke andere rollen zijn er binnen de gemeente in het proces?
6	In hoeverre worden deze rollen ook vervuld?	In hoeverre worden deze rollen ook vervuld?	In hoeverre worden deze rollen ook vervuld?
7	Uit wat voor taken bestaat de rol van de burger?	Uit wat voor taken bestaat de rol van de burger?	Uit wat voor taken bestaat de rol van de burger?
8	In hoeverre wordt deze rol ook vervuld?	In hoeverre wordt deze rol door de burger ook vervuld in het initiatief?	In hoeverre wordt deze rol door de burger ook vervuld in het proces?
9	Wat voor andere partijen behalve de gemeente, de infomediary en de burger zijn er betrokken bij het intiatief?	Wat voor andere partijen behalve de gemeente, de infomediary en de burger zijn er betrokken bij het initiatief?	Wat voor andere partijen behalve de gemeente, de infomediary en de burger zijn er betrokken bij het proces?
10	Wat voor taken hebben deze partijen?	Wat voor taken hebben deze partijen?	Wat voor taken hebben deze partijen?
11	Wat belemmert u bij het uitvoeren van deze taken?	Wat belemmert u bij het uitvoeren van deze taken?	Wat belemmert u bij het uitvoeren van deze taken?
12	Wat zou er volgens u moeten gebeuren zodat uw taak uitvoerbaar wordt?	Wat zou er volgens u moeten gebeuren zodat uw taak uitvoerbaar wordt?	Wat zou er volgens u moeten gebeuren zodat uw taak uitvoerbaar wordt?
13	In hoeverre vindt er terugoppeling (input, reactie, suggestie) plaats van burger naar gemeente?	In hoeverre vindt er terugoppeling (input, reactie, suggestie) plaats van burger naar gemeente?	In hoeverre vindt er terugoppeling (input, reactie, suggestie) plaats van burger naar gemeente?
14	Wordt er iets concreets gedaan met die input feedback? (data aangepast, beleid aangepast, terugkoppeling naar feedback gever)	Wordt er iets concreets gedaan met die input feedback? (data aangepast, beleid aangepast, terugkoppeling naar feedback gever)	Wordt er iets concreets gedaan met die input feedback? (data aangepast, beleid aangepast, terugkoppeling naar feedback gever)
15	Wordt er teruggekoppeld aan de burgers over die feedback? *Deze vraag heeft betrekking op de data zelf (SLIM Melden: Meldingen openbare ruimte en WIMS: Stemlokalen). Dus niet de data die erbij betrokkken zijn*	Wordt er teruggekoppeld aan de burgers over die feedback?	Wordt er teruggekoppeld aan de burgers over die feedback?
16	In hoeverre wordt er bij de gemeente zelf gebruik gemaakt van deze data?	In hoeverre wordt er bij de gemeente zelf gebruik gemaakt van deze data?	Wat wordt er gedaan in uw proces met de data (case SLIM: meldingen, case WIMS: stemlokalen)?

Appendix D

Case results; case study parameters

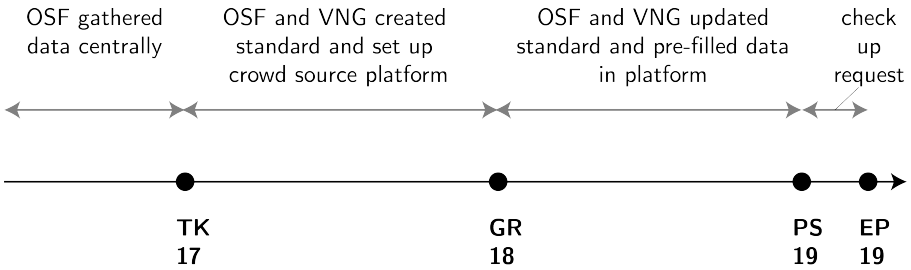
D.1 Implementation process and time-lines

For **WIMS**, in the years from initiation, there was a momentum for creating a nation wide data-standard of polling station data because of the election wave of the years 2017-2019. After national elections in 2017, TK17, local council elections followed in 2018, GR18, and in 2019 there were two election rounds: regional elections, PS19, in March and European Parliament elections, EP19, in May. Initially, for TK17, OSF has collected data on polling stations by themselves. This was perceived as a lot of work according to the project leader.

> *"And we have spent hours and hours searching for data on polling stations on websites of municipalities, and data was all in different format"*
>
> Project leader WIMS, Open State Foundation

Hence, the Open State Foundations sought cooperation with the Union of Dutch Municipalities, VNG, to develop a data standard for polling stations. XY and longitude/latitude data as location parameters replaced address parameters and the BAG standard as the indication of the the polling station. BAG is a data-standard of the Land Registry (Dutch: *Kadaster*) referring to buildings and addresses. Furthermore, meta-data such as contacts of municipalities and availability of the station to the physically impaired were added in the standard.

To gather data, WIMS was set up as a crowd sourcing platform where executives from municipalities could upload their data. This procedure was followed in preparation of GR18. The whole implementation process is given in figure D.1.



TK17 : *Tweedekamerverkiezingen,* National elections 2017
GR18 : *Gemeenteraadverkezingen,* Local elections 2018
PS19 : *Provincialestaten & Waterschapsverkiezingen,* Provincial elections 2019
EP19 : *Europees parlementverkiezingen,* European Parliament elections 2019
OSF : Open State Foundation
VNG : *Vereniging Nederlandse Gemeenten,* Union of (Dutch) Municipalities

Figure D.1: Implementation time-line of *Waar is mijn stemlokaal?*

After GR18, the initiative was evaluated and the procedures were improved for PS19 and EP19. Already

existing data were pre-filled in order to facilitate municipalities in adjusting the data. The polling station data for municipalities that did not add data in the platform, was manually added by coworkers of OSF. As these data were not validated, there was a disclaimer on the website for these data that the accuracy could not have been verified.

For **SLIM**, in September 2016, the municipality of Utrecht was the first municipality to implement SLIM Melden. As of February 2019, eight municipalities have implemented SLIM Melden in their operations (Verdonk, 2019). Implementation initiatives in the different SLIM Melden municipalities are independent. In other words, there is not a centralized effort to engage all Dutch municipalities in SLIM Melden. Rather, sales acquisition by Civity is focused on municipalities separately.

The distinctive feature of SLIM Melden according to a Civity representative is twofold. First, they use object data on public works like lamp-posts and garbage sites in an application with a map. When a citizen or a municipal representative wants to make a notification of some kind of disturbance in public space, it is possible to select the object. Most of the object data were already available for both analyzed municipalities that implemented SLIM, and the data-conversion to the SLIM Melden format was relatively easy. Secondly, when a notification is made, the notification is automatically published as open data and visualized in the application. This means that notifying citizens can view existing notification and can therefore re-notify or choose to refrain from notification. Besides, reuse of notification data is possible because the data is published as open data.

> *"What we offer to the notification procedure is use data to optimize the process"*
>
> Project leader SLIM, Civity

The implementation of SLIM Melden involves the alignment of multiple municipal departments such as the customer contact and maintenance department, as both front-end and back-end procedures are altered. Because of the local characteristics of the municipality, a standard is created for each municipality that fits the procedure the best. This means that the notifications data for Utrecht were not standardized in the same way as for Velsen.

D.2 Initiative procedures

In figure D.2 the process of WIMS is visualized using Unified modeling Language (UML). The infomediary party OSF has developed the website as a centralized data location for polling stations across all of the Netherlands. The websites consists of a map of the Land Registry with a Geo-locator for facilitating the user in finding a polling station. The data concerning polling stations consists of Geo-information parameters concerning address, postal code, latitude/longitude and XY coordinates. The municipal organization responsible for election typically provides data via a developed crowd-source platform by Open State Foundation. The BAG-id is used as a location indicator. Additional data entail contacts, opening hours and accessibility (for the physically impaired). Data are both visualized in the map and available in Comma Seperate Values (CSV) format under CC0 license, meaning 'no rights reserved' (Creative Commons, n.d.). The website is possibly embedded in municipal websites or websites of governmental organizations. Both the website and the data are reused. A link to the website was established on Facebook user time-lines on election day. The data are reused to report on polling station accessibility by journalists, such as *Financieel Dagblad* (van de Reep & Linnekamp, 2019). In these article data-analysis could have been performed rather quickly because of the high quality of the provided data, as the articles were published in short period after the data were complete.

The amount of work that is expected from municipal data suppliers differs between municipalities. Whereas some small municipalities only operate a handful of polling stations, in big municipalities the amount of polling stations can be hundreds. However, in an interview with OSF there was a statement that there was no observed difference in data delivery between small or big municipalities. Therefore, we assume that amount of polling station is not crucial in determining whether municipalities perceive a barrier.

> *"We have not seen that amount of polling stations has influenced whether municipalities decide to deliver data"*
>
> Project leader WIMS, Open State Foundation

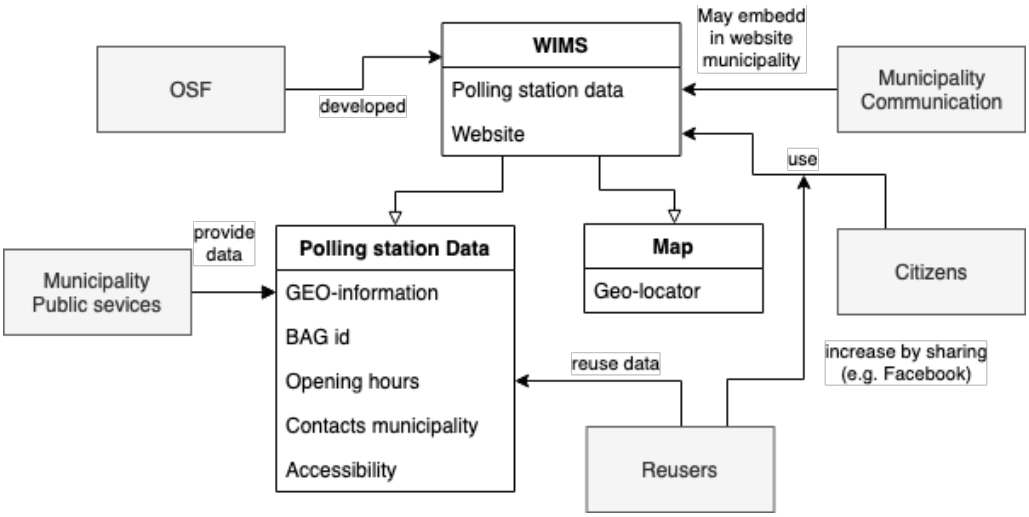


Figure D.2: *Waar is mijn stemlokaal?*- implementation procedure in UML

The application SLIM Melden is developed by Civity. In the implementation procedure, the object data of municipalities are used to visually embed them in the map of the application. The objects are clickable, so that citizens that wish to make a notification on an object can do so easily. Secondly, existing cases of notifications are visualized in the map as well. This means that citizens can see when a disturbance has already been noted. There is a possibility to notify the existing notification again. Additionally, because of the presence of a Geo-locator, it is easy to make a notification on site.

When a new notification is made, in the administrative system of the municipality a case is generated. The municipal service responsible for the handling process of the notifications makes sure that the right maintenance service is motorized. When the disturbance is fixed, the notifying citizen is informed and the case is closed. Meanwhile, data on closed and open cases is periodically released on the open data-platform of Civity (`https://www.dataplatform.nl/`.

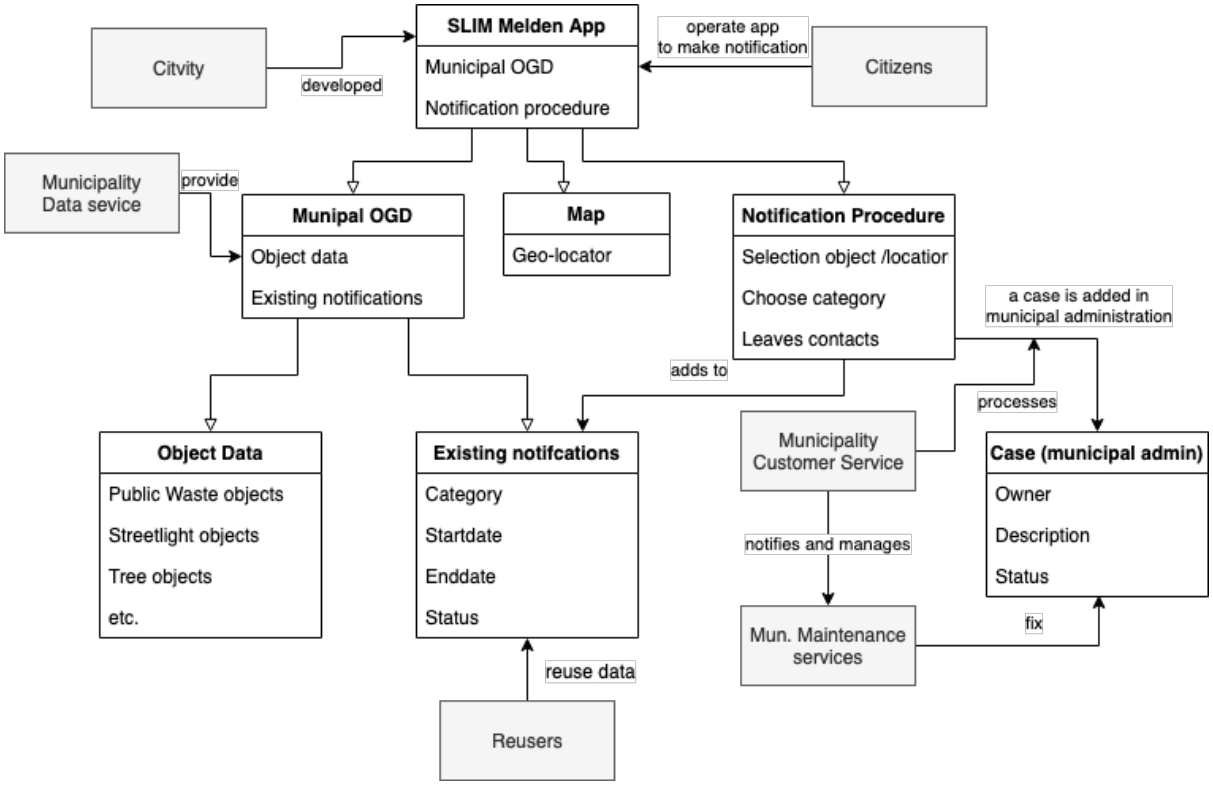


Figure D.3: *SLIM Melden*- implementation procedure in UML

As can be derived from both UMLs the implementation tracks of both initiatives show some key differences between the cases.

First, the implementation of SLIM Melden involves an organizational change within municipalities and covers multiple departments, whereas WIMS entails the periodical delivery of data of any representative of the municipal organization. Secondly, whereas in WIMS support is given to the municipality by the establishment of a generic data-standard to all municipalities in the Netherlands, in SLIM, a context-shaped standard of notification to the municipality is made by Citity. The representative of the municipality of Velsen mentioned that the categories for notifications of existing processes could be maintained in SLIM Melden.

> *"We decided to integrate the existing categories with our notification services one to one in SLIM Melden"*
>
> Executive public work maintenance, municipality of Velsen

Thirdly, for SLIM, the presence of high quality object-data was an essential condition to implement the initiative. However, according to the Civity worker, in most municipalities these data already exist in high quality. Both representatives of partaking municipalities also mentioned that the integration of objectdata was not a hurdle.

D.3 Intended data quality in OGD initiatives

In table D.1 the eight criteria of open data as used in section 2.3.2 are analyzed for both initiatives. These characteristics allow to conclude that both initiatives have yielded open municipal data along the indicators as established by BZK.

Table D.1: Initiative open data quality assessment in the cases

Fits criterion?	**WIMS: Polling stations**	**SLIM: *Meldingen openbare ruimte Utrecht***
Data online.	Yes, `www.dataplatform.nl`, and `https://waarismijnstemlokaal.nl/data`	Yes, `www.dataplatform.nl`
Free access	Yes	Yes
No registration necessary	Yes	Yes
Open licence	Yes, CC0 licence.	No explicit mention of license, yet no restrictions either, so: yes.
Up to date	Incidental, every election round update. Last update: EP2019.	Daily update
Machine readable	Yes, CKAN API, CSV format	Yes, CKAN API, CSV format
Meta-data available.	Yes: Tags and 19 fields	Yes: Tags and 6 fields:
Standardization.	Uniform national standard	Municipal standard

In both SLIM and WIMS, an open data-set is created. The data are freely online accessible via open licenses via at least one data-platform. There are no restrictions in terms of registration. The formats in which the data are published are machine-readable. Notification data are updated daily and the data-set on polling stations is updated with each election round. Regarding the standardization, as previously mentioned, the polling station data are nationwide, where as notification data follow a municipal standard. However, many categories are the same or similar, which means that the level of inter-municipal standardization is not zero. Yet re-users have to do additional processing to make comparative analyses.

Appendix E

Case results; stakeholder perceptions

In this appendix, the perceptions results are given. The quotes are given in Dutch. The quotes have been coded according to ecosystem elements and stakeholder perspective identification.

E.1 WIMS; stakeholder perceptions

Table E.1: Information sources WIMS

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Maar met deze stemlocaties kun je dus veel beter ook precies zien waar er hoe gestemd werd. En daar kan ik wel weer voorstellen dat er misschien weer bedrijfjes zijn die daar weer economische waarde uithalen. Ja voorspellingen over bepaalde wijken kunnen doen. Misschien heeft het voor politieke partijen ook wel nut, maar sommige partijen hebben misschien meer baat bij een lagere opkomst, dat weet je niet.	Infomediary	Economic		Information Quality	Infomediary	Interview 1 Open State Foundation coordinator WIMS
We hebben ook al van een aantal gemeenten gehoord dat de data die zij hebben ingevoerd dat zei die dataset echt als hun bronmateriaal zien	Infomediary	Operational/ tactical		Information Quality	Municipality	Interview 1 Open State Foundation coordinator WIMS
Als dat steeds meer bekend ik bij gemeente ambtenaren kunnen ze dat binnen gemeentes ook weer makkelijker tussen gemeentes over hebben.	Infomediary	Operational/ tactical		Information Quality		Interview 1 Open State Foundation coordinator WIMS
Door het centraliseren voor de gemeente maak je een tool die individuele niet zouden hebben waardoor de kwaliteit van de data beter wordt, minder fouten.	Infomediary	Operational/ tactical		Technicalities	Infomediary	Interview 1 Open State Foundation coordinator WIMS
De kaart die wij maken is embedbaar. Dus gemeenten kunnen die kaart op hun eigen website hergebruiken dat zien we ook zeker door enkele tientallen gemeenten gebeuren. Maar die kaart die ze dan in een keer kunnen embedden, zeker voor een kleine gemeente die daar niet de middelen voor hebben, is dat denk ik wel heel erg nuttig.	Infomediary	Operational/ tactical		Technicalities	Infomediary	Interview 1 Open State Foundation coordinator WIMS
Daar heeft elke Nederlander die die dag op Facebook inlogte melding van gekregen, van Ik heb gestemd of waar kan ik stemmen. En bij waar kan ik stemmen kwamen ze op onze pagina uit met een kaartje en daar is toen volgens mij wel een half miljoen keer gebruik van gemaakt.	Infomediary	Social/ political		Use and participation	Citizen	Interview 1 Open State Foundation coordinator WIMS
hoe ver liggen stemlokalen gemiddeld van schoolgebouwen en universiteiten omdat daar toen ook was dat doordeweekse dag	Infomediary	Social/ political				Interview 1 Open State Foundation coordinator WIMS
Je wilt de opkomst zo hoog mogelijk houden, drempels om mee te doen laag houden en mensen zo goed mogelijk informeren	Infomediary	Social/ political				Interview 1 Open State Foundation coordinator WIMS

Quote	Perspective	Value	Barrier	Success factor	Task	Source
En een van de groepen die het minst konden stemmen zijn jongeren onder andere dus om juist ook op de digitale plekken waar zij zitten deze informatie simpel en duidelijk aan te bieden is heel waardevol op soicaal/politek gebied.	Infomediary	Social/ political				Interview 1 Open State Foundation coordinator WIMS
Ja, het is ook weer een mooi voorbeeld van van open data en transparantie digitaal zeg maar nut heeft. Ja het is een mooi project voor ons om te laten zien.	Infomediary	Social/ political				Interview 1 Open State Foundation coordinator WIMS
Toen hebben ongeveer de helft van alle gemeenten hun stemlokalen toegevoegd wat al best goed voelde op het moment.	Infomediary			Evaluation	Municipality	Interview 1 Open State Foundation coordinator WIMS
Het begon eerst als een beetje een project van van Arjan in 2017 ja toen is hij voor de tweede kamerverkiezingen alle stemlokalen gaan verzamelen handmatig omdat het dus maar alleen op gemeente niveau beschikbaar was	Infomediary				Infomediary	Interview 1 Open State Foundation coordinator WIMS
En per gemeente totaal anders aangeboden. dan makkelijk analyseren of voor heel Nederland op een kaart kan zetten en en daardoor makkelijker een portaal in kaart en website te maken waar iedereen dan terecht kan in plaats van het overal weer totaal anders en vaak ook op in slechte kwaliteit wordt aangeboden.	Infomediary			Use and participation	Municipality	Interview 1 Open State Foundation coordinator WIMS
En bij waar kan ik stemmen kwame ze op onze pagina uit met een kaartje en daar is toen volgens mij wel een half miljoen keer gebruik van gemaakt. En dat was voor ons wel een soort van realisatie van deze data is op de dag e§cht nodig	Infomediary			Evaluation	Citizen	Interview 1 Open State Foundation coordinator WIMS
Er was een consultatie op die standaard ook en ja waar we dus dingen uit vragen hoe toegankelijk het stembureau is, zelfs het BAG nummer in plaats van een adres omdat elk adres in principe een BAG nummer heeft.	Infomediary			Information Quality	Municipality	Interview 1 Open State Foundation coordinator WIMS
Dus toen werd het gefinancierd als een crowdsource platform waarbij wij niks meer hoefden te verzamelen maar we de gemeente gelegenheid gaven om zelf hun stemlokalen toen te voegen	Infomediary			Technicalities	Municipality	Interview 1 Open State Foundation coordinator WIMS
Als het BAG nummer niet klopt dan krijg je gewoon niks terug zeg maar Terwijl als je Dropstaat in plaats van Dorpsstraat typt wat redelijk vaak voorkomt dat detecteer je minder makkelijk.	Infomediary			Task complexity		Interview 1 Open State Foundation coordinator WIMS

Quote	Perspective	Value	Barrier	Success factor	Task	Source
uit onderzoekjes die die we hebben gedaan met gemeenten of overheden daar kwam vaak naar voren dat dat niet echt te maken had met het nou of het een grote of een kleine gemeente was of plek in het land iets maar dat het dat je toch.	Infomediary		Evaluation			Interview 1 Open State Foundation coordinator WIMS
Ik vind het ook moeilijk te zeggen want in een groot gedeelte is het wel in een keer goed gegaan	Infomediary		Evaluation			Interview 1 Open State Foundation coordinator WIMS
Die BAG is inderdaad denk ik dat denk ik het grootste obstakel dat wijzigen gemeente je vaak wel ook Geo specialisten hebt maar degene die dit formulier gingen invullen op de spreadsheet dat waarschijnlijk gewoon ambtenaar die eventjes de verkiezingen erbij deed	Infomediary		Task Complexity	Institutional structure	Municipality	Interview 1 Open State Foundation coordinator WIMS
Het is wel moeilijk te zeggen want het is dus zo'n burger weet misschien ook wel niet dat ie dit nodig heeft.	Infomediary		Evaluation		Citizen	Interview 1 Open State Foundation coordinator WIMS
Zeg maar vanuit Facebook of de Rijksoverheid of een of andere centrale website of media Nationale mediasite ga je niet naar 355 verschillende gemeentes linken.	Infomediary			Use and participation	Infomediary	Interview 1 Open State Foundation coordinator WIMS
Bijvoorbeeld je zit op de liveblog van de NOS en je wilt stemmen en dat kunnen ze daardoor niet bieden.	Infomediary			Use and participation	Infomediary	Interview 1 Open State Foundation coordinator WIMS
Ja dit is wel een van de projecten waarbij we de meeste gebruikers krijgen. Dat hadden we vooraf moeilijk echt precies de mate waarin gebruikt worden kunnen voorspellen. Zeg maar wat je direct ook even ja op je stempas staat de dichtstbijzijnde locatie van van je stemlokaal. Vaak als je ergens woont heb je daar wel misschien toch ook wel een beetje een idee van.	Infomediary			Evaluation	Citizen	Interview 1 Open State Foundation coordinator WIMS
Je ziet op onze website ook echt aan de gebruikers patronen dat ze ook echt doorklikken. Maar dat ze gemiddeld ook echt dus dan op een gemeente zoeken en dan binnen de gemeente inderdaad nog een keer doorslikken op de stembureau waar zij dan interesse in hebben.	Infomediary			Evaluation	Citizen	Interview 1 Open State Foundation coordinator WIMS
Standaardisering is altijd denk ik wel efficient. We hebben de standaard een keer verbeterd. We hebben wat velden toegevoegd over minder valide toegankelijkheid. Voor EP19 hebben we niks meer veranderd, ik heb ook niks in het hoofd wat er veranderd zou moeten worden.	Infomediary			Evaluation	Municipality	Interview 1 Open State Foundation coordinator WIMS

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Wij hebben het initiatief genomen, data-validatie en helpdesk.	Infomediary				Infomediary	Interview 1 Open State Foundation coordinator WIMS
De grootste barrière is duidelijk een dekkende inforamtie door het verzamelen van de stemlokalen dus gewoon in eerste instantie de juiste mensen bij de gemeente weten te bereiken. Want het blijft een niet verplicht ding	Infomediary		Information Quality	Institutional structure	Municipality	Interview 1 Open State Foundation coordinator WIMS
We hebben inmiddels wel contact met alle gemeente. Dat ze het echt gaan uploaden is ook omhoog gegaan van 50% in de eerste naar 63 % in de tweede keer dat we het deden afgelopen maart. En nu 75%.	Infomediary			Evaluation	Infomediary	Interview 1 Open State Foundation coordinator WIMS
We maken het ook steeds makkelijker, de website maken we gebruiksvriendelijker voor gemeentes om te uploaden ook op basis van feedback	Infomediary			Task complexity		Interview 1 Open State Foundation coordinator WIMS
maar stond alles direct al klaar in de website en konden ze het nog steeds uploaden via een website als ze veel dingen	Infomediary			Task complexity		Interview 1 Open State Foundation coordinator WIMS
Nou heeft het ook geholpen omdat deze verkiezingen zo dicht op de Provinciale Staten verkiezingen zaten. En waarschijnlijk is bij de gemeenten dezelfde verkiezingsunit nog bezig nu met EP	Infomediary			Evaluation		Interview 1 Open State Foundation coordinator WIMS
En we hebben ook nog nooit grote klachten gehad, het feit dat we er weinig feedback op krijgen geeft voor mij aan dat het goed werkt.	Infomediary			Evaluation	Infomediary	Interview 1 Open State Foundation coordinator WIMS
Ik denk dat het makkelijk te vinden moet zijn voor burgers en dan ze het dan goed kunnen gebruiken.	Infomediary			Use and participation	Citizen	Interview 1 Open State Foundation coordinator WIMS
En eingelijk zien we onze rol als Open State nu ook gewoon klaar zeg maar we willen het nu graag weer naar een overheidspartij terugbrengen, waar het duurzaam beheerd kan worden en verder uitgebouwd omdat de vernieuwing raakt er nu uit en dat is onze kracht.	Infomediary			Evaluation	Municipality	Interview 1 Open State Foundation coordinator WIMS
In eerste instantie moesten we al een contactpersoon en een e-mailadres van iemand vinden die er over gaat. is wil gaan doen dus we wilden niet deze vraag gewoon direct naar alle algemene e-mailadres je wilt gewoon direct weten met wie je contact hierover dus die nieuwsbrief.	Infomediary		Institutional structure		Municipality	Interview 1 Open State Foundation coordinator WIMS

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Sommige gemeenten hadden echt prima een kaart. Die goed werkte, ook snel genoeg of op een mobiel scherm. Bij dat soort gemeenten merkten we wel irritatie, van we doen het toch al goed waarom moeten we het nu dan weer nog een keer doen.	Infomediary		Institutional structure		Municipality	Interview 1 Open State Foundation coordinator WIMS
het aan van Binnenlandse Zaken en vereniging van Nederlandse gemeenten voorgelegd en die hebben daar vervolgens het project Waar is mijn stemlokaal gefinancierd	Infomediary			Institutional structure		Interview 1 Open State Foundation coordinator WIMS
Dat vind ik moeilijk te zeggen, we hebben ze benaderd via de nieuwsbrief van Binnenlandse Zaken die naar de gemeente gaat.	Infomediary			Institutional structure		Interview 1 Open State Foundation coordinator WIMS
Ja in mijn ervaring is altijd een beetje dat je net toevallig net de juiste persoon moet hebben die denkt: Dit gaan we doen! een beetje geluk hebben ja	Infomediary			Institutional structure	Municipality	Interview 1 Open State Foundation coordinator WIMS
Die wordt door gecommuniceerd naar de gemeente vanuit de VNG. Dus daar was soms verwarring bij voorlopende gemeenten, dat die dachten dat ze het al hadden gedaan.	Infomediary		Institutional structure		Infomediary	Interview 1 Open State Foundation coordinator WIMS
Wij zien ons als een soort aanjager van dingen die de overheid dan nog niet doen zeg maar.	Infomediary		Institutional Structure		Infomediary	Interview 1 Open State Foundation coordinator WIMS
Geen privacy, misschien Het enige ding was in de dan dus zeg maar de provinciale staten en waterschapsverkiezingen van gelopen maar dat ze dan mijn gemeente was die het verzamelen de heren van de stembureaus had uitbesteed aan een softwareleverancier en dat je daar wel een beetje soort van discussie	Infomediary		Legislation			Interview 1 Open State Foundation coordinator WIMS
Technische uitvoeringen enzo dat dat loopt allemaal goed en ook het bereik naar buiten loopt goed.	Infomediary		Technicalities		Infomediary	Interview 1 Open State Foundation coordinator WIMS
Ik zie daar weinig waarde in. Het is fijn dat het open data is en dat iemand daar iets mee kan doen, maar ik denk niet dat Facebook ofzo hier nou echt geld mee kan verdienen. Of een ander bedrijfje.	Partaking municipality: executive	Economic				Interview 2 Municipality Eindhoven Public Affairs
Het grote voordeel is dat je uiteindelijk maar twee locaties hebt waar je het op vastlegt. 1 in je eigen systeem en dan exporteert naar WIMS. en dat je daar ook alle processen op aanpast. Dus ook als je kijkt naar dat mensen willen weten hoe er gestemd is op stembureau XYZ, dan kun je ook die website voor gebruiken	Partaking municipality: executive	Operational/ tactical		Information Quality		Interview 2 Municipality Eindhoven Public Affairs

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Nou we hebben het ook nog wel gebruikt voor als een stembureaulid zich wilt aanmelden. Die kunnen dan ook kiezen bij welk stembureau ze willen gaan zitten. De voorzitter, en de leden. Die konden dat dan aanmelden via dezelfde kaart	Partaking municipality: executive	Operational/ tactical		Information Quality		Interview 2 Municipality Eindhoven Public Affairs
Maar ik denk dat over het algemeen er wel genoeg ruchtbaarheid is gegeven aan de openingstijden van de stembureaus.	Partaking municipality: executive	Operational/ tactical				Interview 2 Municipality Eindhoven Public Affairs
En we kunnen die website kunnen we embedden op de website op de gemeente.	Partaking municipality: executive	Operational/ tactical			Infomediary	Interview 2 Municipality Eindhoven Public Affairs
Er komen regelmatig informatieverzoeken bij ons binnen, soms gaan ze naar de kiesraad de website. Maar die is vaak niet gedetailleerd genoeg. Want veel ook politieke partijen willen vaak de informatie op stembureauniveau	Partaking municipality: executive	Operational/ tactical		Use and participation		Interview 2 Municipality Eindhoven Public Affairs
We monitoren ook wat de opkomst is in stembureaus om te evalueren of we ze de volgende keer nog nodig hebben. Dit jaar hebben we een pilot gedaan met een app, die scant de stempassen, en dan wordt er per uur de opkomst gemonitord.	Partaking municipality: executive	Operational/ tactical		Technicalities		Interview 2 Municipality Eindhoven Public Affairs
Want de burger wil weten waar die kan stemmen en het is dan fijn als je grensoverschrijdend kan kiezen waar een stemlokaal is. En het goede aan dit initiatief was dat als je met een kiezerspas zometeen overal naartoe kunt. Veldhoven, Rosmalen.	Partaking municipality: executive	Social/ political			Citizen	Interview 2 Municipality Eindhoven Public Affairs
Toegankelijkheid moest erbij. En ik zie weinig toegevoegde waarde in die data.	Partaking municipality: executive	Social/ political				Interview 2 Municipality Eindhoven Public Affairs
Ik denk dat misschien een onderzoeker misschien een keer gaat kijken hoe is het geregeld met de stemlokalen in Nederland, bijvoorbeeld een belangenvereniging van invaliden.	Partaking municipality: executive	Social/ political		Use and participation		Interview 2 Municipality Eindhoven Public Affairs
Omdat mensen nu overal naar toe kunnen als ze willen stemmen dan kan je ook geen analyses meer doen van hoe er waar gestemd wordt. Je kunt er niks meer van zeggen. Vroeger toen mensen in hun eigen stemlokaal stemde kon je zien van die buurt stuurt groen en die buurt stemt rood.	Partaking municipality: executive	Social/ political				Interview 2 Municipality Eindhoven Public Affairs
Want ik kan met ook voorstellen dat het de spreiding beïnvloedt?Ja dat is wel zo, maar daar gaat het niet om. Voor de verkiezing moet de opkomst zo hoog mogelijk zijn.	Partaking municipality: executive	Social/ political			Municipality	Interview 2 Municipality Eindhoven Public Affairs

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Ik denk dat de burger dit soort dingen van ons verwacht. Sommige burgers althans	Partaking municipality: executive	Social/ political			Citizen	Interview 2 Municipality Eindhoven Public Affairs
Ik moet het mijn zus ook uitleggen. Mensen van 80 die gaan ook naar stembureaus waar ze altijd naar toe zijn geweest. Maar het kan opkomstbevorderend werken. In ieder geval de jongere burgers die verwachten dit.	Partaking municipality: executive	Social/ political				Interview 2 Municipality Eindhoven Public Affairs
En dus ook met het procesverbaal helpt dat, als burgers dat willen opvragen. Ze kijken via de kaart waar ze hebben gestemd, dan vinden ze het stembureaunummer en komen ze op die manier bij het proces verbaal terecht.	Partaking municipality: executive	Social/ political	Use and participation	Information Quality	Citizen	Interview 2 Municipality Eindhoven Public Affairs
Sommige mensen komen dat dan fysiek checken. Nu dat digitaal kan, wordt dat alleen maar meer denk ik.	Partaking municipality: executive	Social/ political		Technicalities	Citizen	Interview 2 Municipality Eindhoven Public Affairs
Het is goed om te zien dat daar altijd ruimte is in een standaard. Voor de eigen administratie.	Partaking municipality: executive			Information Quality		Interview 2 Municipality Eindhoven Public Affairs
Dat is nog wel een probleem in WIMS, alles gaat op stembureaunummer. En dat verandert nog wel een keer	Partaking municipality: executive		Institutional structure	Information Quality		Interview 2 Municipality Eindhoven Public Affairs
De burger heeft het nodig om niet alleen op de website maar ook nog op de stempas. Je moet hen en en doen.	Partaking municipality: executive			Use and participation	Citizen	Interview 2 Municipality Eindhoven Public Affairs
Als ze voor de deur komen om te laten stemmen. Maar ik denk niet meer dan dit.	Partaking municipality: executive			Use and participation	Citizen	Interview 2 Municipality Eindhoven Public Affairs
Vooral de BAG-id erbij zoeken was het grootste werk. We hadden XY coordinaten er al in, maar die waren nog niet zo goed als nu. Ze zaten toen meer in de wijk ongeveer, op basis van postcode. En nu was het wel een stuk specifieker. We hadden toen een keer via Google Maps, en toen was het ongeveer. Nu is het beter. Nu hebben we ongeveer 125 stembureaus op 72 locaties.	Partaking municipality: executive		Information Quality	Technicalities	Municipality	Interview 2 Municipality Eindhoven Public Affairs
Misschien op den duur ook wel Google Maps foto erbij. Fijn als burgers kunnen zien hoe de ingang eruit zien.	Partaking municipality: executive		Use and participation	Information Quality	Citizen	Interview 2 Municipality Eindhoven Public Affairs
Dat is wel jammer, dat als je een BAGid hebt, dan zou je zo toch de rest moeten kunnen uitrollen. X en Y, adressen, en de rest.	Partaking municipality: executive		Task complexity	Technicalities		Interview 2 Municipality Eindhoven Public Affairs
Door de data van WIMS kunnen mensen nu makkelijker ook de proces verbalen erbij vinden.	Partaking municipality: executive		Use and participation	Information Quality		Interview 2 Municipality Eindhoven Public Affairs

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Ik vind de Excel wel moeilijk te verwerken voor in WIMS. Ik snap dan eerlijk gezegd ook niet dat als je de BAGId pakt dat je dan niet gelijk alles hebt.	Partaking municipality: executive		Task complexity	Technicalities		Interview 2 Municipality Eindhoven Public Affairs
Nou wij hebben aan onze softwareleverancier gevraagd om een export tabel te maken. Nu moeten we dat in Excel gaan doen, maar het gros van de data is al in het systeem dus misschien moet de VNG dat maar gaan regelen met de softwareleverancier.	Partaking municipality: executive		Task complexity	Technicalities		Interview 2 Municipality Eindhoven Public Affairs
Ja... hun werk. Zij zijn al jaren bezig met open data. Dus ze hebben ook hun eigen portal en dan willen ze daar dan dus in ook iets met stembureaus doen. Maar ik zeg dat, nee we volgen die landelijke standaard.	Partaking municipality: executive		Institutional structure		Municipality	Interview 2 Municipality Eindhoven Public Affairs
Nee dat hadden we zelf gedaan en de vorige keer had onze afdeling GEO die had een nieuw pakket. Wij willen dat ook wel doen van jullie. Nu hebben we gezegd dat hoeven jullie niet meer te doen. We hebben nu WIMS.	Partaking municipality: executive		Institutional structure	Institutional structure	Municipality	Interview 2 Municipality Eindhoven Public Affairs
Nee. De data komt uit kadaster. Of onze systemen, het zijn onze gegevens, niet van de leveranciers. De partij die daarvoor de vizualisaties maakte heeft er niet dwars in gezeten.	Partaking municipality: executive		Legislation	Institutional structure		Interview 2 Municipality Eindhoven Public Affairs
Ik vind dat er op de nieuwe stempassen gewoon een QR code naar WIMS moet komen om de lokalen te vinden. Dat heb ik toen al meteen geroepen.	Partaking municipality: executive		Use and participation	Technicalities		Interview 2 Municipality Eindhoven Public Affairs
Communicatie was het wel met mij eens.	Partaking municipality: executive			Institutional structure	Municipality	Interview 2 Municipality Eindhoven Public Affairs
Ik vind de kaart wel klein op de desktop van WIMS.	Partaking municipality: executive		Technicalities			Interview 2 Municipality Eindhoven Public Affairs
Wij hadden al een hele mooie applicatie, maar die is nu door WIMS uit de lucht gehaald. En op de vorige portaal was wel een hoop meer informatie. en fotootje bijvoorbeeld van de deur, en meer over toegankelijkheid	Partaking municipality: information	Operational/ tactical	Information Quality		Municipality	Interview 3 Municipality Eindhoven Geo-information
Wij hadden al een hele mooie applicatie, maar die is nu door WIMS uit de lucht gehaald.	Partaking municipality: information	Operational/ tactical				Interview 3 Municipality Eindhoven Geo-information

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Ik ben een groot voorstander van landelijke standaarden. het verbetert samenwerken, voor marktpartijen is het beter. Zoals softwarepakketten die eenduidig kunnen worden vormgegeven.	Partaking municipality: information	Operational/ tactical				Interview 3 Municipality Eindhoven Geo-information
De afdeling Geo informatie is één van de informatieknooppunten. Het gaat dan over fysieke ruimtes, bijvoorbeeld over locaties stembureaus. Ook beheren wij het open data portaal van de gemeente Eindhoven. We gaan de data van WIMS wel publiceren, we moeten dan nog wel even aanpassen om zo te krijgen. Wat Hans doorstuurde zie ik als een afgeleide van wat we al hadden.	Partaking municipality: information	Operational/ tactical	Institutional structure		Municipality	Interview 3 Municipality Eindhoven Geo-information
Ik zie er eigenlijk geen meerwaarde in voor de burgers van Eindhoven. Die zijn er op achteruit gegaan.	Partaking municipality: information	Social/ political				Interview 3 Municipality Eindhoven Geo-information
Maar ik snap het wel van de VNG, deze data is low-hanging fruit. En die moeten ze nog wel doen. En het is inderdaad wel een beetje symbolisch, kijk ons eens even al die data online gooien.	Partaking municipality: information	Social/ political				Interview 3 Municipality Eindhoven Geo-information
Als je het zo zegt, denk ik, alsjeblieft op die tweede. Maar vanuit het gemeenteperspectief zie ik dat we het verdelen we op de drie, merk ik.	Partaking municipality: information	Social/ political				Interview 3 Municipality Eindhoven Geo-information
. Ik kam me wel voorstellen dat het voor de toegankelijkheid beter is. Bijvoorbeeld voor mensen met een beperking. Die gaan daar actief op zoeken. Maar ik denk niet dat er mensen zijn die nu opeens wel zijn gaan stemmen door WIMS.	Partaking municipality: information	Social/ political			Citizen	Interview 3 Municipality Eindhoven Geo-information
Wij hebben open data, 100 verzamelingen. sommigen die al openbaar zijn, en sommige niet. We maken ook gebruik van de high-value data list. En die proberen ook met spoed open te zetten.	Partaking municipality: information				Municipality	Interview 3 Municipality Eindhoven Geo-information
Randgemeenten hebben liever niet dat grote broer/zus Veldhoven mee gaat nemen.	Partaking municipality: information		Institutional structure			Interview 3 Municipality Eindhoven Geo-information
Maar de de kosten gaan voor de baten uit, dat is een nadeel. Ook heb je nadeel als je voorloper bent. Als je de mooie data al had, dan moet je 2 jaar investeren in herziening.	Partaking municipality: information		Institutional structure			Interview 3 Municipality Eindhoven Geo-information
Wij participeren in VNG werkgroepen. Ook zijn er initiatieven van sensoren-register Veonovum, die denken ook standaarden uit. Met de Brabantse B5 gemeenten werken we ook samen.	Partaking municipality: information		Information Quality	Institutional structure		Interview 3 Municipality Eindhoven Geo-information

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Als het gevraagd was, dan hadden we de VNG wel wat meer feedback gegeven op waar de standaard?	Partaking municipality: information		Information Quality	Institutional structure		Interview 3 Municipality Eindhoven Geo-information
Gemeenten zijn zelf verantwoordelijk voor het publiceren van hun lijst met stembureaus en de wijze van publicatie is vormvrij. Vanuit een bovenlokaal perspectief, het perspectief van data-analyse en open datahergebruik is deze situatie zeer onwenselijk	Infomediary	Social/ political	Use and participation	Institutional structure	Municipality	Subsidy evaluation GR18
opkomst bij verkiezingen te kunnen verhogen door kiezers eenvoudig een stembureau te kunnen laten opzoeken via verschillende hergebruikinitiatieven	Infomediary	Social/ political				Subsidy evaluation GR18
de data te kunnen hergebruiken	Infomediary	Social/ political				Subsidy evaluation GR18
LocalFocus, Wegener Dagbladen, Facebook en Stem op een vrouw hergebruikt. accounts van D66, GroenLinks, Partij voor de Dieren en diverse lokale partijen.	Infomediary	Social/ political		Evaluation		Subsidy evaluation GR18
Daarnaast willen we voor een volgende editie graag meer informatie opnemen over het stemproces en procedures zoals het meenemen van een stempas, machtigen, toegang voor mindervaliden en het mogelijke hergebruik van de data met enkele voorbeelden.	Infomediary	Social/ political		Use and participation		Subsidy evaluation GR18
Civity, de beheerder van Dataplatform, werden de stembureaus. opgeslagen op hun Dataplatform.	Infomediary			Technicalities	Infomediary	Subsidy evaluation GR18
De standaard was niet grondig op uitvoerbaarheid getest. Open State Foundation had ook eerder mee kunnen kijken om expertise in te brengen om de standaard te verbeteren.	Infomediary		Task complexity	Institutional structure	Infomediary	Subsidy evaluation GR18
Het was voor veel gemeenten niet duidelijk wat er ingevuld diende te worden in de velden mindervalidentoegang, akoestiek en toilet. Deze zouden toegevoegd moeten worden aan de specificaties om onduidelijkheden te voorkomen	Infomediary		Task complexity	Information Quality		Subsidy evaluation GR18
Voor sommige gemeenten was het vervelend om het invulvoorbeeld op de horizontale as in te vullen. Het valt te overwegen om het invulvoorbeeld verticaal op te maken.	Infomediary		Task complexity	Task complexity		Subsidy evaluation GR18

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Open State Foundation had niet de beschikking over een admin-account waarmee zij konden inloggen als elke willekeurige gemeente om gemeenten te helpen bij het uploaden of om bepaalde foutmeldingen te repliceren. Voor een volgende editie is een dergelijk admin-account een noodzakelijkheid	Infomediary		Task complexity	Technicalities	Infomediary	Subsidy evaluation GR18
Open State wil de functionaliteit inbouwen om een e-maillink te sturen naar gemeenten die hun stembureaus succesvol geüpload hebben met algemene informatie naar de pagina met de stembureaus, de ruwe data en met instructies om de kaart op de eigen kanalen te embedden. We verwachten dat dit het interne hergebruik van de data en de visualisaties vergroot.	Infomediary		Task complexity	Technicalities		Subsidy evaluation GR18
verzameld, ontsloten en gevisualiseerd, bundelen bundelen, valideren, ontsluiten en visualiseren	Infomediary				Infomediary	Subsidy evaluation GR18
Open State Foundation heeft met steun van het ministerie van Binnenlandse Zaken en in samenwerking met VNG Realisatie, Civity en gemeenten	Infomediary			Institutional structure		Subsidy evaluation GR18
Soms was de Nummeraanduiding van het BAG-ID niet aanwezig of bezat een pand geen BAG-ID, dit terwijl het BAG-ID gebruikt werd om de nadere adresgegevens op te halen	Infomediary		Information Quality	Information Quality		Subsidy evaluation GR18
Betere filtering en zoekmogelijkheden op de website en in de kaart, bijvoorbeeld voor mindervalidentoegankelijkheid	Infomediary			Technicalities		Subsidy evaluation GR18
Voor de gemeente Amsterdam en Rotterdam zijn er tijdens de gemeenteraadsverkiezingen ook verkiezingen voor de gebiedscommissies.	Infomediary		Institutional structure			Subsidy evaluation GR18
Bij bestanden met veel stembureaus duurde het uploaden een paar minuten.	Infomediary		Technicalities			Subsidy evaluation GR18
Dit dient uiterlijk in december te leiden tot een herziene standaard die gecommuniceerd kan worden naar gemeenten door VNG Realisatie	Infomediary			Information Quality	Infomediary	Subsidy request PS19
Ondersteunen van meerdere coördinatenstelsels X/Y en Lat/Lon en Ondersteunen van synoniemen zoals Den Haag en 's Gravenhage;	Infomediary		Task complexity	Technicalities		Subsidy request PS19
Opstellen van een pagina voor veel gestelde vragen om het aantal mails van gemeenten naar de mailhelpdesk te verminderen;Het toepassen van meer validaties om te controleren of de ingevoerde gegevens (zoals BAG-ID's) kloppen;gebruiken;	Infomediary		Task complexity	Task complexity		Subsidy request PS19

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Het ministerie van Binnenlandse Zaken kan naar gelang de noodzaak nog via de nieuwsbrief verkiezingen extra aandacht vragen bij gemeenten voor het aanmaken van een account	Infomediary			Institutional structure		Subsidy request PS19
Via de opkomst bevorderende campagne van het ministerie van Binnenlandse Zaken zal in samenwerking met campagnebureau BKB de website tijdens de verkiezingsdagen via Facebook gekoppeld worden.	Infomediary			Institutional structure	Infomediary	Subsidy request PS19
Gemeente Den Bosch stelt dat ook de overheid soms belemmeringen oplegt, doordat vanuit landelijke regels stemcomputers niet geoorloofd zijn bij verkiezingen, iets wat de gemeente graag zou willen met het oog op efficientie.	Non-partaking municipality	Operational/ tactical	Technicalities	Legislation		USBO report
Gemeente Almere stelde bijvoorbeeld dat zij al voldoende communiceren naar hun inwoners over waar stembureaus te vinden zijn.	Non-partaking municipality	Operational/ tactical				USBO report
“Hoe meer je communiceert, waar overal wat zit, hoe groter de kans is dat ze dan toch een ander gaan kiezen.” (Medewerker gemeente Almere)	Non-partaking municipality	Operational/ tactical				USBO report
Dit is zeker het geval bij verkiezingen waar men enkel in de eigen gemeente mag stemmen, zoals de gemeenteraadsverkiezingen. Dat maakt dat gemeenten de toegevoegde waarde voor dit soort verkiezingen erg laag vinden. “Als het over andere verkiezingen gaat vind ik het een hartstikke mooi medium” (Medewerker gemeente Werkendam)	Non-partaking municipality	Operational/ tactical	Institutional structure			USBO report
aangezien het bij alle gemeenten al duidelijk is waar men kan stemmen.	Non-partaking municipality	Social/ political				USBO report
De gemeente Putten geeft in hun begroting (D28) en in het interview aan dat het hoofddoel van digitalisering is dat de inwoners optimaal bediend worden, zowel digitaal als aan het loket. Zij hebben echter niet meegedaan aan het platform, omdat zij dit onnodig vonden.	Non-partaking municipality	Social/ political				USBO report
Gemeente Almere stelde echter wel dat het voor de burger beter is als de gemeente aangesloten is bij initiatieven als ‘Waar is mijn stemlokaal?’, omdat hierdoor de gemeente bij de burgers beter in beeld is.	Non-partaking municipality	Social/ political				USBO report

Quote	Perspective	Value	Barrier	Success factor	Task	Source
"Dus in die zin, als je puur zou kijken naar de stemmen is het misschien niet zo'n succes, maar het feit dat je bepaalde bevolkingsgroepen kan laten stemmen, is het wel een succes zou ik zeggen. En zo wordt het ook gedragen binnen ons team." (Medewerker gemeente Den Haag)	Non-partaking municipality	Social/ political				USBO report
Er wonen veel ouderen en het grootste gedeelte van de inwoners is christelijk. De coalitie, CDA, SGP en Lokaal Belang, wil maar tot zekere hoogte digitaliseren, omdat zij het belangrijk vind dat alles ook niet-digitaal blijft bestaan.	Non-partaking municipality	Social/ political	Use and participation		Citizen	USBO report
"We hebben wel eens collega's die zeggen van: 'ja, dat vindt toch niemand interessant... dat hoeft er niet op', weet je wel. Ja, dat bepaal jij niet, of iemand dat interessant vindt, dat bepalen mensen zelf." (Medewerker gemeente Werkendam)	Non-partaking municipality		Evaluation			USBO report
De gemeente Den Bosch benadrukt dat zij bij het openbaar stellen van hun data letten op wat de burger interesseert. De burger moet wel kunnen vinden wat hij zoekt en dat is vaak maar een beperkt deel van de grote hoeveelheid publieke informatie waar de gemeente over beschikt.	Non-partaking municipality		Evaluation			USBO report
zelf een eigen platform hebben omtrent de verkiezingen. Dit kan varieren van een applicatie (Amsterdam, Den Haag), een eigen open data portaal (Arnhem, Den Bosch, Dordrecht, Utrecht) of een speciale tool op de website die de stemlocaties grafisch weergeeft (Putten, Den Bosch).	Non-partaking municipality		Information Quality			USBO report
Zo beschrijft de gemeente Amsterdam dat bepaalde gegevens heel anders werden gevraagd dan dat zij gewend zijn. Daarom heeft hij de Open State Foundation doorverwezen naar een site met een andere soort dataset; een dataset waar Open State Foundation vervolgens niet mee aan de slag kon.	Non-partaking municipality		Information Quality		Infomediary	USBO report
Zowel de gemeente Aa en Hunze als de gemeente Weert stelt dat kleinere gemeenten vooral bezig zijn met de uitvoerende taken, zoals de organisatie van de verkiezingen. Als een initiatief niet direct onder de praktische uitvoering valt, heeft het voor hen weinig tot geen prioriteit, omdat er geen speciale afdeling aanwezig is.	Non-partaking municipality		Task complexity	Institutional structure	municipality	USBO report

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Daartegenover staan twee van de G4-gemeenten, Den Haag en Amsterdam, die de grootte van hun gemeente als een belemmering zien. Beiden stellen dat hun gemeente dusdanig veel stembureaus kent dat het voor hen te veel werk is om deze gegevens via de gegevensstandaard aan te leveren.	Non-partaking municipality		Institutional structure			USBO report
De medewerker van de gemeente Arnhem die wij spraken zei echter niks te hebben met de High Value Datalijst en ook de andere gemeenten hadden hier weinig over te zeggen.	Non-partaking municipality		Institutional structure			USBO report
Gemeente Aa en Hunze geeft aan dat dit project bij communicatiemedewerkers onder de aandacht gebracht moet worden, terwijl gemeente Utrecht de voorkeur geeft aan het projectteam verkiezingen. Wel geven alle gemeenten aan dat het iemand moet zijn die werkt binnen het verkiezingsteam, het communicatieteam, afdeling publiekszaken of het open datateam.	Non-partaking municipality		Institutional structure			USBO report
Daarnaast benoemden de gemeenten Amsterdam en Utrecht dat het voor hen niet duidelijk was of zij wel de juiste gegevens had aangeleverd.	Non-partaking municipality		Task complexity			USBO report
In een open interview met twee medewerkers van de gemeente Dordrecht die zich veel bezig hebben gehouden met het ontsluiten van open data rondom het project 'Waar is mijn stemlokaal?', kwam naar voren dat zij zelf ook veel hadden aan de informatie die openbaar werd. Doordat ze voorafgaand aan de verkiezingen de informatie over stemlokalen gestructureerd bij elkaar hadden gezocht, konden ze achteraf een analyse maken van de uitslagen per stemlokaal en per wijk.LET OP: G4 gemeenten deden dit al en hebben daar WIMS platform niet voor nodig	Partaking municipality: executive	Operational/ tactical				USBO report
Dus het wordt pas waardevol als iedereen het doet, het wordt pas waardevol als iedereen hetzelfde doet, het wordt pas waardevol als het ongeveer even betrouwbaar is. En het wordt pas waardevol als ik snap wat er uberhaupt gepubliceerd wordt." (Medewerker gemeente Dordrecht, R10)	Partaking municipality: executive	Social/ political		Information Quality		USBO report
De gemeenten gaven aan voorstander te zijn van een site waar alle stembureaus op te vinden zijn, aangezien dit bijdraagt aan de transparantie en het opkomst bevorderend kan werken.	Partaking municipality: executive	Social/ political				USBO report

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Daarbij zagen zij speciaal de meerwaarde van het platform voor forensen die onderweg willen stemmen.	Partaking municipality: executive	Social/ political				USBO report
Enkele gemeenten (Utrecht, Aa en Hunze, DAL-gemeenten) geven ook aan mee te hebben gedaan aan dit platform omdat dat hoort bij een transparantie houding richting hun inwoners.	Partaking municipality: executive	Social/ political				USBO report
Gemeenten zoeken naar manieren om het stemmen voor burgers zo makkelijk mogelijk te maken. Een hoger opkomstpercentage bij verkiezingen zorgt namelijk voor een verhoging van het democratisch gehalte van de gekozen volksvertegenwoordigers.	Partaking municipality: executive	Social/ political				USBO report
Allereerst noemt de gemeente Aa en Hunze dat ze wel sturen op welke zaken ze openbaar maken en welke niet. Hierbij wordt gelet op de voortgang van die zaken.	Partaking municipality: executive	Social/ political		Institutional structure		USBO report
Daarnaast werkt het volgens de medewerkers van de gemeente Dordrecht ook niet bij alle adressen. Zo gebruiken niet alle stemlocaties de ingang die ze volgens de BAG-ID hebben, wat voor verwarring zorgt.	Partaking municipality: executive		Information Quality			USBO report
Gemeente Aa en Hunze gaf aan het zonde te vinden dit soort informatie in meerdere systemen, standaarden of apps door te moeten geven. Ook gemeente Arnhem stelde dat het een verbetering zou zijn wanneer gemeenten volgens een landelijke standaard zouden publiceren. Gemeenten gaven namelijk aan voor meerdere initiatieven gevraagd te worden om deel te nemen.	Partaking municipality: executive		Task complexity	Information Quality		USBO report
"Dan denk ik van 'laat die gemeentes gewoon de X/Y aanleveren' want dat hebben we. En als Open State dan uh hun bereken programmaatje er overheen gooit, dat zou wel een stuk handiger zijn." (Medewerker gemeente Utrecht, R14)	Partaking municipality: executive		Task complexity	Technicalities		USBO report
Gemeente Utrecht had zich aangemeld om deel te nemen aan de pilot. Het duurde echter te lang voordat de VNG de standaard op orde had. In eerste instantie zou er nog een pilot met enkele deelnemende gemeenten worden uitgevoerd, maar het werd toch al de definitieve standaard. Dat was bij de gemeente Utrecht niet geheel duidelijk.	Partaking municipality: executive		Institutional structure			USBO report

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Volgens medewerkers van de gemeente Dordrecht kan ook bij het invullen van de Basisregistratie Adressen en Gebouwen (BAG) veel verwarring ontstaan. Zij vinden het concept te technisch, omdat de correcte schrijfwijze van groot belang is.	Partaking municipality: executive		Task complexity			USBO report
Een voorbeeld dat zij noemden is het gegeven 'toegankelijkheid voor mindervaliden'. Onduidelijk hierbij was wat Open State Foundation onder 'mindervaliden' verstaat. Volgens de gemeente Utrecht zou Open State Foundation daar meer gradaties in moeten aangeven.	Partaking municipality: executive		Task complexity	Information Quality	Municipality	USBO report
Het hebben van beleid over transparantie of aandacht voor transparantie in een collegeprogramma is voor een aantal gemeenten een van de motieven om mee te doen aan een initiatief als 'Waar is mijn stemlokaal?'.	Partaking municipality: executive			Institutional structure		USBO report
"Maar daar komt ook steeds meer wetgeving die zegt van 'uhh, gegevens die je met publieke middelen hebt verzameld, zouden ook voor publiek nut weer beschikbaar moeten zijn'." (Medewerker gemeente Dordrecht, R9)	Partaking municipality: executive			Legislation		USBO report
Twee van de gemeenten (Aa en Hunze, Utrecht) die wij hebben gesproken noemden dat bij hen ook draagvlak is ontstaan door het horen over succes van andere gemeenten. Zo noemt Aa en Hunze dat je een beetje in de kijker staat bij andere gemeenten als je niet meedoet aan een project als 'Waar is mijn stemlokaal?'.	Partaking municipality: executive			Evaluation		USBO report
Draagvlak voor een project als 'Waar is mijn stemlokaal?' wordt kracht bijgezet wanneer de gemeente iemand in dienst heeft die zichin zijn functie bezig houdt met, in dit geval open data en het ontsluiten daarvan. In de gemeenten Aa en Hunze, Arnhem, Dordrecht en de DAL-gemeenten was dit het geval. Deze gemeenten gaven zelf ook aan dat zij een medewerker in huis hadden met hart voor open data en verstand van zaken, die meteen ook de kartrekker is van projecten zoals 'Waar is mijn stemlokaal?'.	Partaking municipality: executive			Institutional structure		USBO report
DAL-gemeenten gaven aan dat zij deze manier van werken prettig vinden. Dit principe werkt volgens hen hetzelfde als bij data.overheid.nl, die eens in het jaar een quality-control doen en iedereen hun gegevens laat updaten.	Partaking municipality: executive			Institutional structure		USBO report

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Gemeente Aa en Hunze gaf aan dat het de volgende keer bij het opzetten van een soortgelijk platform handig is om te peilen of er draagvlak is bij bepaalde gemeenten voor het initiatief. Bij 'Waar is mijn stemlokaal?' is van tevoren niet onderzocht of gemeenten behoefte hadden aan een platform met dit doel. Door gemeenten van te voren in te lichten over de plannen, kan meteen al duidelijk worden of de gemeenten daadwerkelijk zullen meewerken.	Partaking municipality: executive		Institutional structure	Evaluation	Infomediary	USBO report
Overkoepelend kan gesteld worden dat de gegevensstandaard zo eenvoudig mogelijk gehouden moet worden om zo de gebruiksvriendelijkheid te kunnen garanderen, zodat de gemeenten zelf zo min mogelijk moeite hoeven te doen om informatie aan te leveren.	Partaking municipality: executive			Task complexity		USBO report
Zo stelden de DAL-gemeenten dat zij al heel veel data op data.overheid.nl hebben staan en dat Open State Foundation daar data van af kan halen wanneer zij dit nodig hebben.	Partaking municipality: executive		Task complexity	Technicalities	Infomediary	USBO report
Tot slot opperde de gemeente Amsterdam het idee van een helpdesk. Zij liepen zelf vaak tegen onduidelijkheden aan en kunnen zich voorstellen dat gemeenten die geen data-analist tot hun beschikking hebben hier dan helemaal niet uitkomen. Het lijkt hen handig om in dat soort situaties iemand te kunnen bellen die even meekijkt en verduidelijking kan geven over het invullen van de gegevensstandaard.	Partaking municipality: executive			Task complexity	Municipality	USBO report

E.2 SLIM; stakeholder perceptions

Table E.2: Information sources SLIM

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Want gemeenten vroegen we hebben nu een dataplatform, maar wat kunnen we met die data? Dus toen is het eigenlijk zo ontstaan dat de lantaarnpalen die heeft iedere gemeente. En de bomen en de bushokjes ook.	Infomediary				Infomediary	Interview 4: Civity; coordinator SLIM Melden
En als je weet waar die lantaarnpalen staan dan hoeven mensen die gaan bellen, die hoeven niet op te zoeken wat het nummer is op locatie van die lantaarnpaal. Geen adres, geen coordinaten.	Infomediary	Social/ political		Technicalities	Citizen	Interview 4: Civity; coordinator SLIM Melden
Dus mensen konden die lantaarnpaal gewoon aanklikken omdat dat bekend is met alle metadata.	Infomediary	Social/ political		Information Quality	Citizen	Interview 4: Civity; coordinator SLIM Melden
En wij zijn flexibel in het aantal categorieën, maar we geven op een gegeven moment, als het de spuigaten uitloopt, geven we advies welke categorieën, beter past dan anderen.	Infomediary			Evaluation	Infomediary	Interview 4: Civity; coordinator SLIM Melden
Maar SLIM Melden heeft toch wel een bijzonder implementatietraject. Daarom zijn ze tegen allerlei barrières aangelopen. Want je hebt namelijk de mensen van informatie en zeg maar de beleidsmedewerkers dienstverlening, dat is weer een andere afdeling dan het klantcontactcentrum. En dat is waar het telefoontje binnen komt. En die jongens liggen een beetje dwars. Want het betekent dat zij met een heel ander pakket gaan werken en die verandering is gewoon lastig.	Infomediary		Institutional Structure			Interview 4: Civity; coordinator SLIM Melden
De mensen van het meldingsloket, die liggen moeilijk. En dat hebben we nu al bij twee gemeenten meegemaakt. Zeist en Amersfoort.	Infomediary		Institutional Structure			Interview 4: Civity; coordinator SLIM Melden
En daarnaast zijn er ook gemeenten die in een aanbesteding gewoon kiezen voor iemand anders omdat dat technisch beter uitkomt.	Infomediary		Technicalities			Interview 4: Civity; coordinator SLIM Melden
Eigenlijk van de gemeente, omdat je dan de processen efficiënter kan indelen,	Infomediary			Information Quality	Infomediary	Interview 4: Civity; coordinator SLIM Melden
maar ook van de gebruiker die dan makkelijker een keuze kan maken. En dat dan uiteindelijk weer ten goede komt voor het gebruik van de app. En de reviews ook uiteindelijk.	Infomediary			Information Quality	Infomediary	Interview 4: Civity; coordinator SLIM Melden
De ene gemeente noemt het een lichtmast, de andere noemt het een lantaarnpaal, weet je wel.	Infomediary		Information Quality		Infomediary	Interview 4: Civity; coordinator SLIM Melden

Quote	Perspective	Value	Barrier	Success factor	Task	Source
De objecten, want zo noemen we die data dan, daar... nee daar zijn geen problemen mee. Maar waar we wel af en toe tegen aanlopen is dat iemand doet een melding van mijn buurman op nummer 5 is een eikel en die maakt te veel overlast. En dat zij natuurlijk dingen die er zo snel mogelijk uitgefilterd worden. In principes zien de gemeenten die meldingen binnen komen, en dan kunnen wij die eruit halen. Maar we zij nu bezig met een backoffice, zodat gemeenten die actie er zelf uit kunnen filteren.	Infomediary		Legislation	Technicalities	Municipality	Interview 4: Civity; coordinator SLIM Melden
Hert probleem is dat als ik een sales gesprek heb voor SLIM Melden dan zitten er gewoon drie/vier afdelingen aan tafel en die moeten het allemaal eens zijn. Nou je weet hoe overheden werken. Ze zitten vaak niet eens in hetzelfde gebouw. En ze kennen elkaar niet. En ja, verandering is sowieso al wel lastig. Dus dat maakt het niet heel makkelijk.	Infomediary		Institutional structure			Interview 4: Civity; coordinator SLIM Melden
Want waar gemeenten ook een beetje bang voor zijn is dat ze veel meer meldingen binnen krijgen. Maar aan de andere kant worden die meldingen ook veel efficiënter afgerond dus we weten eigenlijk nooit echt wat het verschil is.	Infomediary		Evaluation			Interview 4: Civity; coordinator SLIM Melden
Ja maar die hadden geen benchmark op de oude processen. Dus ze weten ook niet of ze er nou op vooruit gaan.	Infomediary		Evaluation			Interview 4: Civity; coordinator SLIM Melden
Waar ik naartoe wil is, stel dat je een applicatie hebt die dus je burgers in staat stelt om die eikenprocessierups in kaart te brengen. dan kan je vervolgens ook benchmarken of je bestrijdingsproces werkt of niet. En dat stimuleert ook interregionale samenwerking.	Infomediary	Operational/ tactical	Evaluation	Technicalities		Interview 4: Civity; coordinator SLIM Melden
Ja, efficiënter, maar wat wij tov onze concurrent beter doen is dat wij ook een open data creëren. dus aan de ene kant heb je het meld proces en aan de andere kant heb je data analyse en onderzoeksaspect.	Infomediary	Operational/ tactical		Information Quality		Interview 4: Civity; coordinator SLIM Melden
Moet ik dat zien als dat er veel aan de data moest gebeuren voordat het klaar was? Nee, dat is eigenlijk het minste. Want die lantaarnpalen bijvoorbeeld, zijn allemaal wel al bekend.	Infomediary			Information Quality	Infomediary	Interview 4: Civity; coordinator SLIM Melden

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Ja. Want anders werkt de app niet. Dus eigenlijk door de app heb je zij een extra stok achter de deur om hun data goed te houden. Ja. Dat is wel een extra waarde van het project?	Infomediary			Information Quality	Infomediary	Interview 4: Civity; coordinator SLIM Melden
Nou ik denk dat het meer als kostenbesparing gaat zitten, niet dat je er geld mee kan verdienen, maar dat je geld mee kan besparen. Als je bijvoorbeeld kijkt naar wateroverlast, dan zijn er innovaties die bijvoorbeeld voor bufferzones zorgen. Dus als er in een gebied heel veel water valt dan kunnen die als bufferzones fungeren ten tijde van piekwateroverlast bijvoorbeeld. En vanuit de SLIM Melden dataset kan je dus vanuit de burgermeldingen erachter komen, waar die plekken dan zijn.	Infomediary	Operational/ tactical		Information Quality		Interview 4: Civity; coordinator SLIM Melden
Dan hen je ook binnen de gemeetes de Open Data mensen. Die vinden het fantastisch ja.	Infomediary			Institutional Structure		Interview 4: Civity; coordinator SLIM Melden
HVD list is een pressiemiddel om druk voor open data uit tevoeren op gemeenten	Infomediary			Institutional structure	Infomediary	Interview 4: Civity; coordinator SLIM Melden
Daar zijn koppelingen ontwikkeld. En via dat zaaksysteem gaat ie gelijk naar de juiste beheerder. Waardoor het een heel efficient meld proces wordt.	Infomediary	Operational/ tactical		Technicalities	Municipality	Interview 4: Civity; coordinator SLIM Melden
Ik heb het over informatiebewustwording of databewustwording, van wat voor waarde het kan hebben, maar ook van wat er mis kan gaan. Nog meer bewustwording, nog meer voorbeelden, nog meer laten zien hoe het allemaal kan, niet alleen maar de goede voorbeelden. Maar ook waar het mis gaat. Zodat je kan zien waar je van kan leren en wat er dus niet moet gebeuren	Partaking municipality: information			Evaluation		Interview 5: Municipality Utrecht: Information Commissioner
Ik zie met name dat de ethische kant in dataprojecten, dat die heel interessant aan het worden is. Omdat het niet alleen gaat over wat data technisch, wat allemaal mag, wettelijke kaders zijn natuurlijk evident. Maar daar binnen is daar nog wel een kant van wat zouden wij als stad chill vinden.	Partaking municipality: information			Evaluation	Municipality	Interview 5: Municipality Utrecht: Information Commissioner
Maar als je kan laten zien, en ik weet niet hoe dat ideaal eruit ziet, hoe het zou kunnen gaan, informatie op een makkelijke manier en laagdrempelig wordt ontsloten in een systeem, dan denkt ze (de buurvrouw) jeetje, alsjeblieft geef me die vooroorlogse troep niet meer, ik wil dit!.	Partaking municipality: information			Evaluation	Municipality	Interview 5: Municipality Utrecht: Information Commissioner

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Goed jatten is niks mis mee.	Partaking municipality: information			Evaluation		Interview 5: Municipality Utrecht: Information Commissioner
Het is toch moelijk om daar een balans in te vinden van als mijn buurvrouw het ziet, oh ja daar doe ik een melding over, terwijl als het zelfs mag invullen, honderden mensen doen een melding, dan heb je ook geen eenduid. (...) Daar heb ik zelf ook in mee gedaan om daarover te brainstormen.	Partaking municipality: information		Use and participation		Municipality	Interview 5: Municipality Utrecht: Information Commissioner
Zij gaan natuurlijk niet akkoord als er vervuilde data inzitten en mensen zeggen wat is dit voor slechte app. Dus daar zit met de dataleveranciers en de leverancier van de dienst zitten daar afspraken.	Partaking municipality: information			Information Quality	Infomediary	Interview 5: Municipality Utrecht: Information Commissioner
Volgens mij aan de achterkant gaat het proces niet ongelofelijk anders. Maar omdat dit een project was met digitaal toch goed van start gaan is er ook gekeken, omdat we toch al bezig waren, van hé, kan er nog meer data in, kunnen we die data verbeteren, met die bril is gekeken. Dat hadden we ook zonder die app van Civity kunnen doen, maar dat was een mooi momentum.	Partaking municipality: information	Operational/ tactical		Information Quality		Interview 5: Municipality Utrecht: Information Commissioner
DUIC (lokale krant) zijn bijvoorbeeld 4 enthousiastelingen die zeggen dat je met data dus leuke dingetjes kan doen.	Partaking municipality: information	Social/ political		Use and participation		Interview 5: Municipality Utrecht: Information Commissioner
Het kwam met een idee van Civity. Maar het bleek al snel dat er al behoeft bestond. Ik weet niet of ik daar zelf achter kwam of door Civity, maar daar werd iets over nagedacht.	Partaking municipality: information				Infomediary	Interview 5: Municipality Utrecht: Information Commissioner
In gesprek gaan met andere gemeenten, BZK, deels het rijk dus, Vereniging Nederlandse gemeenten, en experts op dit gebied. Denk aan WAAG in Amsterdam	Partaking municipality: information			Institutional structure	Infomediary	Interview 5: Municipality Utrecht: Information Commissioner
De meeste objecten was alleen wat klein werk voor nodig. Niet gelijk met een API inladen. Maar bij sommige data waren nog niet ontsloten. Maar meeste waren kleine omzettingsdingetjes.	Partaking municipality: information		Information Quality		Municipality	Interview 5: Municipality Utrecht: Information Commissioner

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Ik zie wel vanuit het governance proces, hoe je nu wel toewerkt naar die landelijke dekking in ontwikkelig, dan mag BZK wel een sterkere rol spelen. Dat komt ook doordat wij hebben gezien dat wij regionaal de grote speler zijn en wij moeten die kleintjes een beetje op sleeptouw nemen. Nou dat ging goed, maar ik heb tegen BZK gezegd: zoek meer grote gemeenten die de regio op sleeptouw nemen.	Partaking municipality: information		Information Quality	Institutional structure		Interview 5: Municipality Utrecht: Information Commissioner
Dat weet ik niet, maar het gaat niet zo zeer om privacy volgens mij.	Partaking municipality: information		Legislation			Interview 5: Municipality Utrecht: Information Commissioner
Het is voornamelijk via Publiekszaken hier op de kaart gezet. Ik heb daar denk ik in het begin zelf wel verbindingen ingelegd. Andere gemeenten die ook wilde.	Partaking municipality: information			Institutional structure	Municipality	Interview 5: Municipality Utrecht: Information Commissioner
Wij zitten wel van: oké dit staat er, kunnen we dat op deze manier interpreteren en zo ja, VNG, geef dat iets aan dat het ook helder wordt voor kleine gemeenten.	Partaking municipality: information		Legislation	Institutional structure		Interview 5: Municipality Utrecht: Information Commissioner
Ik denk dat de meerwaarde is dat het wordt gefaciliteerd om meer meldingen te doen, het wordt eigenlijk gefaciliteerd, je krijgt meer feedback van de bewoners, betere openbare ruimte. Want hoe meer we daar over horen, hoe meer we daar aan kunnen doen.	Partaking municipality: information	Social/ political				Interview 5: Municipality Utrecht: Information Commissioner
Maar ik zie ook, is een beetje gek, als je D66 in de coalitie heb zitten, dan zie je landelijk ook wel dat er de datakant goed op de agenda staat.	Partaking municipality: information			Institutional structure		Interview 5: Municipality Utrecht: Information Commissioner
Zij zijn leverancier. Van dit product. Van deze dienst. Wij nemen dat af.	Partaking municipality: information				Infomediary	Interview 5: Municipality Utrecht: Information Commissioner
Maarten Schurink, nu SG bij BZK, was hier gemeentesecretaris, snapte het ook en heeft er ook effort in gestoken.	Partaking municipality: information			Institutional structure		Interview 5: Municipality Utrecht: Information Commissioner
in goede informatieontsluiting, Dat zit hem vooral in vertrouwen in de overheid.	Partaking municipality: information	Social/ political			Municipality	Interview 5: Municipality Utrecht: Information Commissioner
Hoe concreet staat er wat we als Utrecht moeten doen, in hoeverre gaan we dat zelf invullen, gebruiken we daar de VNG voor. Gaan we met Amsterdam of Rotterdam zitten, of ook met een klein gemeente, en ook, zoals we nu de uitdaging zien om aan de Woo te voldoen.	Partaking municipality: information		Task complexity	Institutional structure	Municipality	Interview 5: Municipality Utrecht: Information Commissioner

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Ik denk dat de winst hem zit, naast het makkelijker worden van het proces met die app van Civity, maar hoe dat vervolgens uitvloeit naar verschillende diensten en hoe dat wordt opgepakt, daar zit die winst. Die mensen terughoren, vanuit SLIM Melden zien we dit, en gaan we dan ook echt er wat mee doen.	Partaking municipality: information	Social/ political			Municipality	Interview 5: Municipality Utrecht: Information Commissioner
Het zou mooi zijn als er pro-actiever informatie naar buiten gaat. En als het ook een beetje gebeurd volgens de wensen van de stad. Dat stond in een motie van de raad.	Partaking municipality: information			Institutional structure	Municipality	Interview 5: Municipality Utrecht: Information Commissioner
Ik moet wel eerlijk zeggen dat als je gaat kijken naar het hergebruik van de data, in het algemeen, niet persé alleen de meldingen, dat valt best wel tegen.	Partaking municipality: information		Use and participation			Interview 5: Municipality Utrecht: Information Commissioner
Nee, dat wordt geaggregeerd vrijgegeven en dat wordt gecontroleerd. Nu wordt dat volgens mij nog met de hand, of met het oog gedaan, maar daar wordt die privacygevoelige tool voor ingezet.	Partaking municipality: information		Legislation	Technicalities	Municipality	Interview 5: Municipality Utrecht: Information Commissioner
Academici en studenten gebruiken de data veel om onderzoek te doen. En mensen die apps maken. Maar die zeggen wel veel dat het leuk is al die data, maar wil ik er echt iets mee gaan doen dan heb ik ze nodig van alle gemeenten, en gestandaardiseerd graag en dat is nog wel een hele lange weg	Partaking municipality: information		Information Quality			Interview 5: Municipality Utrecht: Information Commissioner
Maak ik een foto of een filmpje. Coördinaten worden automatisch meegestuurd. En verwerk het maar. Ik denk dat we het beter aan de burger moeten vragen.	Partaking municipality: information		Use and participation	Technicalities	Municipality	Interview 5: Municipality Utrecht: Information Commissioner
En open data is natuurlijk ook niet een thema dat mensen zeggen woooow open data kom op nu morgen! Dat is helaas niet zo. Voor mij zit het op open overheid in plaats van open data.	Partaking municipality: information		Institutional Structure			Interview 5: Municipality Utrecht: Information Commissioner
We hebben een tijd lang een training gehad. We hebben ook datascientists opgeleid. Echt een jaar lang op de VU.	Partaking municipality: information			Task complexity		Interview 5: Municipality Utrecht: Information Commissioner
We beginnen klein, dan komt er een pilot. Je kan niet van tevoren alles weten, maar hierbij was duidelijk van qua kosten was het ook niet heel spannend.	Partaking municipality: information			Task complexity	Municipality	Interview 5: Municipality Utrecht: Information Commissioner
Met name om het meldingsproces een boost te geven. En dat was wel het intiatief wat ik in bracht, dat het voor de buurvrouw nu wel wat makkelijker wordt.	Partaking municipality: information	Social/ political		Use and participation	Citizen	Interview 5: Municipality Utrecht: Information Commissioner

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Terwijl nu heb je gelijk een kaart en een smartphone en dan zeg je klik. De laagdrempeligheid zit 'm er in dat het op de smartphone toepasbaar is. En dat je gelijk op locatie dat kan aanklikken	Partaking municipality: information	Social/ political		Use and participation	Citizen	Interview 5: Municipality Utrecht: Information Commissioner
en met name ook die feedback kant. Ideaal willen wij dat als er aanleiding is voor die melding, dat iedereen die doet.	Partaking municipality: information	Social/ political		Use and participation	Municipality	Interview 5: Municipality Utrecht: Information Commissioner
Vroeger hadden we zoiets we willen van 300 naar 400 datasets. En nu is het veel meer van: waar ergens een vraag opkomt, waar heb je nou last van, zullen we daar gewoon eens naar kijken met data.	Partaking municipality: information			Use and participation	Municipality	Interview 5: Municipality Utrecht: Information Commissioner
Nee particiaptie niet, maar ik denk dat mensen gewoon makkelijker en sneller dingen in hun stad kunnen doen. Dat moet het hoofddoel zijn. En dat mogen we meer toetsen, ik kijk ook naar mijzelf. Interactieve is meestal wel handig, maar het zou niet perse moeten. Het is geen harde eis. Het ligt ook aan de case. Bij SLIM melden wil je iets melden en daar zit iets interactiefs in. Als je iets kan vinden en je hoeft geen WOB verzoek te doen, dan zit er misschien indirect ook iets interactiefs in omdat je geen WOB verzoek hoeft te doen.	Partaking municipality: information			Use and participation		Interview 5: Municipality Utrecht: Information Commissioner
Alle lantaarnpalen staan er bij ons in en daar gaan we aan toe voegen: alle ondergrondse containers. Zijn veel meldingen.	Partaking municipality: executive	Operational/ tactical		Evaluation		Interview 6: Municipality Velsen: Public works
Dat zeg ik nu willen wij gaan kijken: waar wordt veel op gemeld waar wordt weinig op gemeld. Ik wil zo min mogelijk categorieen overige.	Partaking municipality: executive	Operational/ tactical		Information Quality		Interview 6: Municipality Velsen: Public works
Met die lichtmast weten we precies nu welke lichtmast het is, dan weten we daar zit die lamp in, waarschijnlijk is die lamp stuk. Door het voorschakelapparaat	Partaking municipality: executive	Operational/ tactical		Information Quality		Interview 6: Municipality Velsen: Public works
Maar overlast was ook een politieke ding dat wilde politiek ook heel graag.	Partaking municipality: executive			Institutional structure	Citizen	Interview 6: Municipality Velsen: Public works
Lokale partijen zijn vaak aanjagers daarvan en VVD ook wel. vaak lokale partijen die de burgers een platform willen geven belangrijk.	Partaking municipality: executive			Institutional structure		Interview 6: Municipality Velsen: Public works
Iedereen gaat daar anders mee om, dus we willen ook iedereen daar zelf mee om laten gaan maar we willen een uitvoerend ambtenaar wel ruimte geven om dat zelf in te vullen	Partaking municipality: executive			Institutional structure	Municipality	Interview 6: Municipality Velsen: Public works

Quote	Perspective	Value	Barrier	Success factor	Task	Source
KCC klantcontactcentrum die kwam telkens ermee van hebben is niet heel vriendelijk om in te vullen. En toen zijn we met een projectteam gaankijken, met een datateam, met mensen die dingen vastleggen met mensen die aan het werk moeten buiten.	Partaking municipality: executive				Municipality	Interview 6: Municipality Velsen: Public works
Is lastig om te zeggen. Ik heb ook nooit gekeken hoeveel wordt er nou anoniemgemeld maar er wordt ik denk dat zo'n 20% anoniem wordt gebeld.	Partaking municipality: executive		Evaluation			Interview 6: Municipality Velsen: Public works
Oke en we hebben een rubriek erin staan dat is als je over woningoverlast gaat melden als je wil zeggen van mijn buurman maakt heel veel lawaai. Dat kan je melden, maar dat komt niet op het open platform te staan.	Partaking municipality: executive		Legislation	Technicalities	Infomediary	Interview 6: Municipality Velsen: Public works
Maar nieuwe werknemers kunnen gewoon dat opnemen.	Partaking municipality: executive	Operational/ tactical		Task complexity		Interview 6: Municipality Velsen: Public works
Wat we heel belangrijk vonden is de data gegevens die eruit kunnen dat we daar management informatie uit kunnen halen. En dat hoeft onze afdeling niet te zijn, dat kan ook Toezicht en Handhaving zijn.	Partaking municipality: executive	Operational/ tactical			Municipality	Interview 6: Municipality Velsen: Public works
Wat SLIM Melden dus als voordeel had was dat zij met onze, we zijn een Dimpact gemeente, dat is de inrichting van onze archiefkast, zal ik maar zeggen. En daar deden wij al onze meldingen al mee, ons meldsysteem en medewerkersportaal zat al in dimpact. En zij waren al zij hadden de stekker al zeggen om hun systeem op ons op systeem aan te laten sluiten	Partaking municipality: executive			Technicalities		Interview 6: Municipality Velsen: Public works
het zou inrichten dat alle meldingen over dumpingen naast container naar onze uitvoerende aannemers gaan. Zodat zijn het traject verder afwikkelen met de ja en de melder van informatie voorzien en dat is ook een groot voordeel.	Partaking municipality: executive	Operational/ tactical		Technicalities		Interview 6: Municipality Velsen: Public works
We krijgen nu ook aan de achterkant een melding app. Dan kunnen de mensen buiten (in het veld) kunnen er ook voortgangs informatie bij zetten. Hij kan ook zeggen van Ik zet hem in behandeling	Partaking municipality: executive	Operational/ tactical				Interview 6: Municipality Velsen: Public works

Quote	Perspective	Value	Barrier	Success factor	Task	Source
m Ja dat wordt natuurlijk wel sneller dus dat kan je zeggen dat is economische waarde maar een andere kant krijgt hij door dat je makkelijker kan melden krijg je ook gewoon krijgen we ook vele malen meer meldingen gekregen. We zijn bijna verdubbeld aan het aantal meldingen. Dus dan kan je zeggen aan de achterkant werkt het sneller maar aan de voorkant krijg je er meer.	Partaking municipality: executive	Economic	Evaluation			Interview 6: Municipality Velsen: Public works
ik zie het als iets positiefs dat er meer meldingen komen. Maar er zijn genoeg jongens buiten in het veld die dat helemaal niet als iets positiefs zien.	Partaking municipality: executive		Institutional structure			Interview 6: Municipality Velsen: Public works
Nee, als de bewoner een melding doet, dan wordt dat gelijk gepubliceerd. Als de bewoner stuur op verzenden dan staat ie op de app., op het platform. Daar moet een bewoner zelf ook bewust van zijn. Het gebeurt wel eens dat de bewoner daar niet bewust van is. Als je naar de melding toegaat, dan krijg je wel de gegevens van de melding en niet van de melding. We hebben nu wel een categorie, geluidsoverlast, die niet online komt. We weten in dat geval dat het over iemand gaat die melding, dus publiceren we die niet.	Partaking municipality: executive		Legislation	Technicalities	Citizen	Interview 6: Municipality Velsen: Public works
Voor de rest, als er persoonsgegevens worden ingevoerd op een melding dan hebben we daar een controle voor om dat weg te werken.	Partaking municipality: executive		Legislation		Municipality	Interview 6: Municipality Velsen: Public works
Nog niet, we willen wel gaan kijken of andere afdelingen, wat voor mogelijkheden daar zijn. Vooral bij het sociaal domein zien we daar in dat iets voor het weet ik niet geen idee maar het is zo we gebruiken het nu hiervoor maar we zijn niet blind van Nou wil het nooit ergens anders voor gaan gebruiken maar ja die stappen zijn er niet genomen.	Partaking municipality: executive	Social/ political				Interview 6: Municipality Velsen: Public works
En zit u ook andere partijen behalve de gemeente daar gebruik gemaakt van die data? Ik denk dat dat nog niet. Nog niet mee gekregen.	Partaking municipality: executive	Social/ political				Interview 6: Municipality Velsen: Public works
Zij spelen nog een actieve rol voor het opzetten van het behandelen. actief momenteel niet, nu dat het systeem werkt dus geen actieve rol. Meer een passieve rol als wij zeggen van dit op dit moment daarvoor niet	Partaking municipality: executive				Infomediary	Interview 6: Municipality Velsen: Public works
We hadden al ene meldsysteem natuurlijk, daar zaten categorieen in, die hebben we 1 op 1 overgenomen.	Partaking municipality: executive			Information Quality		Interview 6: Municipality Velsen: Public works

Quote	Perspective	Value	Barrier	Success factor	Task	Source
We willen ook dat als je de lijst gaat benaderen van een A tot Z dan willen we gewoon het gecategoriseerd wordt van wat wordt het meest gemeld bovenaan. Wat wordt het minst gemeld onderaan. Als je gaat melden, kom je dan zo snel mogelijk bij je categorie.	Partaking municipality: executive		Use and participation	Technicalities		Interview 6: Municipality Velsen: Public works
Hoe kunnen we de categorie opnieuw schikken we hoe hebben andere gemeentes dat gedaan dan gaan we ook naar kijken.	Partaking municipality: executive		Evaluation	Information Quality		Interview 6: Municipality Velsen: Public works
En de terugkoppeling aan de Burgers hoe gaat dat?Dat is nu nog lastig. Dus ga je op de computer om de melding te bekijken.	Partaking municipality: executive		Technicalities			Interview 6: Municipality Velsen: Public works
Wat mensen veel lastiger vinden als hij er uitgaat en ze krijgen een gestandaardiseerd mailtje van hij is al gedaan. Dan denken ze van ja er is niks gebeurd buiten. Waarom niet? En ik heb geen terugkoppeling gehad? Ik weet niks.	Partaking municipality: executive		Use and participation		Citizen	Interview 6: Municipality Velsen: Public works
Wij proberen nu alle objecten ook bij Geovisia (een systeem, een software programma, waar we alle openbare werken in hebben staan) te zetten. Dan is het zo dat als wij bomen planten dat riolering daar na 3 maanden later komt om de hele straat om te gooien	Partaking municipality: executive	Operational/ tactical	Institutional Structure	Technicalities		Interview 6: Municipality Velsen: Public works
Nee dat willen we nog waarschijnlijk helemaal niet inladen. Je kan tot vijf objecten inladen in SLIM melden en hoe groot is dan de toegevoegde waarde van het inladen van objecten.	Partaking municipality: executive		Technicalities			Interview 6: Municipality Velsen: Public works
Sowieso wordt het laden van je kaart zwaarder. En soms kan je objecten aan of uit zetten, maar de meeste mensen doen dat niet, dus die gaan dan alles laden.	Partaking municipality: executive		Technicalities	Use and participation	Citizen	Interview 6: Municipality Velsen: Public works
College had gezegd dat we absoluut dat de bewoner niet zijn gegevens moet achterlaten als je melding wilt doen. Er moet anoniem gebeld kunnen worden. dat houdt mensen tegen om om een melding te doen. Dan krijg je wel van op de hoogte houden als onduidelijkheid is kunnen wij niet achter komen wat het is. Maar ja dat weten mensen weten dat.	Partaking municipality: executive			Use and participation	Citizen	Interview 6: Municipality Velsen: Public works
En wat voor categorieen waren dat allemaal, waarop dat beoordeeld werd? Het was vooral de toegankelijkheid, makkelijk te bereiken was, helderheid, simpel, kaart met punaises. en dat je de meldingen daarna weer kon zien.	Partaking municipality: executive	Social/ political		Use and participation	Citizen	Interview 6: Municipality Velsen: Public works

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Het is in de cijfers heel duidelijk zichtbaar. Twee jaar terug, toen hadden we 5000 of 6000 melding in het jaar. En nu zitten we op 12-13000 meldingen.	Non-partaking municipality			Evaluation		Interview 7: Municipality Stichtste Vecht: Customer contact
Zet u SV als een voorloper? SV heeft als een van de belangrijkste peilers innovatie.	Non-partaking municipality			Institutional structure		Interview 7: Municipality Stichtste Vecht: Customer contact
Wij hebben gewoon de categorieën genomen die we al hadden. Oké want hier tussen de afdelingen van buiten dat alles Ja die zijn er al ingericht dus we konden dat zo heel makkelijk doorstromen en de mensen in de gemeente natuurlijk iedereen die er ook afdelingen die zijn daar al aan gewend.	Non-partaking municipality			Task complexity		Interview 7: Municipality Stichtste Vecht: Customer contact
er is namelijk niet echt een aanbesteding geweest. Het bedrijf dat Fixi heeft ontwikkeld, daarvan gebruiken wij meerdere informatie systemen.	Non-partaking municipality	Operational/ tactical	Technicalities			Interview 7: Municipality Stichtste Vecht: Customer contact
Alle kanalen staan open en heel veel mensen hebben zelf nu de app op de telefoon en ja dat is makkelijk met je telefoon bij je dat er iets aan de hand van een foto maken locatie staat toch op dus je hoeft niet meer te bellen of een mailtje te sturen. Makkelijk. Ja dat merk je meteen. In plaats van hele uitgebreide meldingen met hele verhalen zie je nu makkelijke, korte beschrijvingen.	Non-partaking municipality	Operational/ tactical				Interview 7: Municipality Stichtste Vecht: Customer contact
We hebben laatst gebruikersdag gehad van Fixi, waar meerdere gemeenten staten ja wij hebben in in een 7 tal basis categorieën opgedeeld naar het altijd wel iets in past.	Non-partaking municipality		Information Quality			Interview 7: Municipality Stichtste Vecht: Customer contact
Absoluut. De afdelingen beheer Openbare Ruimte. Ja dat merk je toch bij gemeentes, iedere verandering daar moet je toch aan trekken.	Non-partaking municipality		Institutional structure			Interview 7: Municipality Stichtste Vecht: Customer contact
Als mensen dat kiezen, bij Fixi is de keuze. Standaard staat het vakje openbaar maken uit. Als mensen hem op de kaart willen hebben dan kunnen ze dat doen.	Non-partaking municipality		Information Quality	Legislation		Interview 7: Municipality Stichtste Vecht: Customer contact

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Ze zijn nu bezig, met grondwaterloket. Hier in de gemeente is dat een groot probleem is dat alles onder water staat. Bij Kockengen hebben ze de kern 50 cm omhoog gezet waardoor ze er geen last meer van hebben maar de rest heeft er nu dus wel last van. Ze zijn nu aan de hand van de meldingen die er zijn gedaan aan de hand van grondmeldingen en rioleringen aan het kijken waar zijn dan de probleemgebieden en zo gebeurd her op meerdere stukken	Non-partaking municipality	Operational/ tactical				Interview 7: Municipality Stichtste Vecht: Customer contact
Ja op dit moment kan eigenlijk alles er uitgehaald worden wat nodig is. Het enige wat er achter zit is de AVG persoonsgegevens die weg ja waardoor gebied registraties er echt zoeken op gebieden en en personen. Dat is bijna niet te doen.	Non-partaking municipality		Legislation			Interview 7: Municipality Stichtste Vecht: Customer contact
Fixi is wel goed opgebouwd wat betreft privacy. Ik ben diegene die de hele dag bezig is met de lijsten en ik kan precies aanvinken wie waar toegang tot heeft. Ze kunnen ook geen gegevens wijzigen.	Non-partaking municipality		Legislation	Technicalities		Interview 7: Municipality Stichtste Vecht: Customer contact
We hebben nu een directe link met het zaak- en archiefsysteem. Je moet meldingen 3 jaar lang bewaren. Dat wordt automatisch doorgezet. Ook een voordeel van Fixi is dat het heel flexibel is. Je kunt er in blijven kneden en aan lijven werken. Ook worden tijdens gebruikersbijeenkomsten ervaringen gedeeld tussen gemeenten.	Non-partaking municipality	Operational/ tactical	Technicalities	Task complexity		Interview 7: Municipality Stichtste Vecht: Customer contact
Ja, dat is misschien wel zo maar in elk deel van het land zijn de categorieën anders omdat de situatie ook anders is. Hier gaat het veel over water. Maar daar zijn gaan mensen er ook anders mee om.	Non-partaking municipality		Information Quality			Interview 7: Municipality Stichtste Vecht: Customer contact
In het noorden over het algemeen is dat een andere cultuur. Ik heb met opzichters van Noordelijke plaatsen gesproken, die hoeven ook geen terugkoppeling te geven. Bij Fixi heb je de ruimte omdat andere dingen.	Non-partaking municipality		Institutional structure			Interview 7: Municipality Stichtste Vecht: Customer contact
Het is dus de toegankelijkheid, zeker voor de melder buiten. mensen doen makkelijke melding vinden makkelijker de procedure. En voelen zich ook meer gehoord. Nu is het een systeem waar mensen in kunnen kijken van de van alle kanten. Ook met de wet openbaarheid bestuur, mensen vragen ook daadwerkelijk gegevens dus die zijn makkelijker aan te leveren.	Non-partaking municipality	Social/ political				Interview 7: Municipality Stichtste Vecht: Customer contact

Quote	Perspective	Value	Barrier	Success factor	Task	Source
Ze zijn bezig met die data maar die is niet compleet. Op dit moment zou het in de uitvoering nog nier werken.	Non-partaking municipality		Information Quality			Interview 7: Municipality Stichtste Vecht: Customer contact
Men is hier behoorlijk locatie gericht. Ik zie hier ook vaak beschrijvingen voorbij komen van joh bij Bakker Joost om de hoek. Zo is men hier.	Non-partaking municipality		Use and participation		Citizen	Interview 7: Municipality Stichtste Vecht: Customer contact
Het gaat hier sowieso over water vooral, en niet over de objebten	Non-partaking municipality		Institutional structure			Interview 7: Municipality Stichtste Vecht: Customer contact
Het zwaartepunt van het werk is wat verschoven. Vroeger was het voornamelijk meldingen binnen halen en nu is de terugkoppeling het meeste werk.	Non-partaking municipality	Operational/ tactical				Interview 7: Municipality Stichtste Vecht: Customer contact
Als kwaliteitsmedewerker centrale dienstverlening, de meldingen komen bij ons binnen. Telefonisch, WhatsApp, e-mail we hebben alle kanalen open staan	Non-partaking municipality					Interview 7: Municipality Stichtste Vecht: Customer contact
Ik weet ook eigenlijk niet of er behoefte aan is om objecten in te laden	Non-partaking municipality		Evaluation			Interview 7: Municipality Stichtste Vecht: Customer contact

Appendix F

Reflection on Engineering & Policy Analysis program

This research was conducted in partial fulfillment of the requirements for the degree of Master of Science in Engineering and Policy Analysis (EPA) at Delft University of Technology. In this appendix, a reflection on the research follows related to the master program.

First, the linkage to the master program Engineering Policy Analysis lies in the social-technical character of the approach and the modeling aspect of perceptions. Re-evaluating the actor dimension in the policy making process regarding open government data initiatives was central in this research. The methodologies taught in the course of actor and strategy modeling in the second quarter of the first year of the master program were used as research approach. Forming expectations about the ecosystem using conceptual modeling was useful to understand the system and to shape the quest for perceptions.

Secondly, this thesis is a typical EPA thesis because the government data ecosystem was investigated using both a system and a multi-actor perspective, which consisted of conceptual modeling and led to specific policy recommendations. This procedure is typical for EPA theses.

Thirdly, in EPA the focus lies typically on issues related to so-called *Grand Challenges*, defined as international problems that have wicked problem definitions without problem owners and clear solutions. The grand challenge related to this research is the digitization of local governments. The research is executed in the Dutch municipal context, but is relevant to decentralized data governance throughout the world. Therefore, this thesis has contributed to facing this grand challenge.

Bibliography

Alexopoulos, C., Loukis, E., & Charalabidis, Y. (2014). A platform for closing the open data feedback loop based on web 2.0 functionality. *JeDEM-eJournal of eDemocracy and Open Government*, *6*(1), 62–68.

Attard, J., Orlandi, F., Scerri, S., & Auer, S. (2015). A systematic review of open government data initiatives. *Government Information Quarterly*, *32*(4), 399–418.

Bizer, C., Heath, T., & Berners-Lee, T. (2011). Linked data: The story so far. In *Semantic services, interoperability and web applications: emerging concepts* (pp. 205–227). Hershey, PA, USA: IGI Global.

Bots, P. (2007). Analysis of multi-actor policy contexts using perception graphs. In *Proceedings of the 2007 ieee/wic/acm international conference on intelligent agent technology* (pp. 160–167).

Boverhuis, J., van t Hoff, S., Hofstra, R., Mijnlieff, N., & Noij, C. (2018). *Stemlocaties binnen handbereik: een kwalitatief onderzoek naar het ontsluiten van open data omtrent stemlokalen* [Unpublished Work]. Universiteit Utrecht, Departement Bestuurs- en Organisatiewetenschap. Utrecht, NL.

Castillo-Montoya, M. (2016). Preparing for interview research: The interview protocol refinement framework. *The Qualitative Report*, *21*(5), 811–831.

Charalabidis, Y., Loukis, E., & Alexopoulos, C. (2014). Evaluating second generation open government data infrastructures using value models. In *2014 47th hawaii international conference on system sciences* (pp. 2114–2126).

Civity. (n.d.-a). *Brochure slim melden.* Retrieved May 1st, 2019, from `https://www.civity.nl/brochure-slim-melden-aanvragen`

Civity. (n.d.-b). *Wat beweegt ons?* Retrieved May 15th, 2019, from `https://www.civity.nl/even-voorstellen`

Conradie, P., & Choenni, S. (2014). On the barriers for local government releasing open data. *Government Information Quarterly*, *31*, S10-S17. doi: 10.1016/j.giq.2014.01.003

Creative Commons. (n.d.). *Cc0 "no rights reserved".* Retrieved May 28, 2019, from `https://creativecommons.org/share-your-work/public-domain/cc0/`

Dawes, S., & Helbig, N. (2010). Information strategies for open government: Challenges and prospects for deriving public value from government transparency. In *International conference on electronic government* (p. 50-60). Springer.

Dawes, S., Vidiasova, L., & Parkhimovich, O. (2016). Planning and designing open government data programs: An ecosystem approach. *Government Information Quarterly*, *33*(1), 15 - 27. doi: https://doi.org/10.1016/j.giq.2016.01.003

De DataDUICers. (2017, Aug 17). Utrechters klagen het meeste over zwerfafval en vuilnis, waar klaagt jouw wijk het meest over? *De Utrechter Internet Courant*. Retrieved from `https://www.duic.nl/algemeen/dataduic/`

Gascó-Hernández, M., Martin, E., Reggi, L., Pyo, S., & Luna-Reyes, L. (2018). Promoting the use of open government data: Cases of training and engagement. *Government Information Quarterly*, *35*(2), 233-242. doi: 10.1016/j.giq.2018.01.003

Gurstein, M. (2011). Open data: Empowering the empowered or effective data use for everyone? *First Monday*, *16*(2). doi: 10.5210/fm.v16i2.3316

Hermans, L., & Cunningham, S. (2013). Actor models for policy analysis. In W. A. H. Thissen & W. E. Walker (Eds.), *Public policy analysis: New developments* (p. 185-213). Boston, MA: Springer US. doi: 10.1007/978-1-4614-4602-6_8

Hermans, L., & Cunningham, S. (2018). *Actor and strategy models: Practical applications and step-wise approaches*. Hoboken, NJ: Wiley.

Jalali, S., & Wohlin, C. (2012). Systematic literature studies: database searches vs. backward snowballing. In *Proceedings of the 2012 acm-ieee international symposium on empirical software engineering and measurement* (pp. 29–38).

Janssen, M., Charalabidis, Y., & Zuiderwijk, A. (2012). Benefits, adoption barriers and myths of open data and open government. *Information Systems Management*, *29*(4), 258-268. doi: 10.1080/10580530.2012.716740

Janssen, M., & Zuiderwijk, A. (2014). Infomediary business models for connecting open data providers and users. *Social Science Computer Review*, *32*(5), 694-711. doi: 10.1177/0894439314525902

Jetzek, T., Avital, M., & Bjorn-Andersen, N. (2013). Generating value from open government data. In *International conference on information systems (icis 2013): Reshaping society through information systems design* (Vol. 2).

Johnson, P., & Greene, S. (2017). Who are government open data infomediaries? a preliminary scan and classification of open data users and products. *Journal of the Urban & Regional Information Systems Association*, *28*(1).

Johnson, P., & Robinson, P. (2014). Civic hackathons: Innovation, procurement, or civic engagement? *Review of Policy Research*, *31*(4), 349-357. doi: doi:10.1111/ropr.12074

Kitchenham, B., Pearl Brereton, O., Budgen, D., Turner, M., Bailey, J., & Linkman, S. (2009). Systematic literature reviews in software engineering – a systematic literature review. *Information and Software Technology*, *51*(1), 7 - 15. (Special Section - Most Cited Articles in 2002 and Regular Research Papers) doi: https://doi.org/10.1016/j.infsof.2008.09.009

Krishnamurthy, R., & Awazu, Y. (2016). Liberating data for public value: The case of data.gov. *International Journal of Information Management*, *36*(4), 668 - 672. doi: https://doi.org/10.1016/j.ijinfomgt.2016.03.002

Kunzler, T. (2016). *De toekomst van hergebruik van overheids- en collectiedata* (Tech. Rep.). Open State Foundation and Archief2020. Retrieved from `https://www.archief2020.nl/downloads/rapport-de-toekomst-van-hergebruik-van-overheids-en-collectiedata`

Kwaliteitsinstituur Nederlandse Gemeenten. (2017). *Nulmeting open data van gemeenten.* Retrieved June 11, 2019, from `https://vng.nl/files/vng/20171013_nulmeting_open_data_gemeenten_versie_1.1.pdf`

Lathrop, D., & Ruma, L. (2010). *Open government: Collaboration, transparency, and participation in practice*. Sebastopol, CA, USA: O'Reilly Media Inc.

Lee, G., & Kwak, Y. H. (2012). An open government maturity model for social media-based public engagement. *Government Information Quarterly*, *29*(4), 492-503. doi: https://doi.org/10.1016/j.giq.2012.06.001

Levy, Y., & Ellis, T. (2006). A systems approach to conduct an effective literature review in support of information systems research. *Informing Science: The International Journal of an Emerging Transdiscipline*, *9*, 181–213.

Mayer-Schönberger, V., & Zappia, Z. (2011). Participation and power: intermediaries of open data. In *1st berlin symposium on internet and society october.*

Meijer, A., Curtin, D., & Hillebrandt, M. (2012). Open government: connecting vision and voice. *International Review of Administrative Sciences*, *78*(1), 10-29. doi: 10.1177/0020852311429533

Ollongren, K. H. (2019, Feb 4). *Reactie brief commissie financiën over open data* [Letter of government]. Retrieved from `https://www.rijksoverheid.nl/documenten/kamerstukken/2019/02/04/kamervragen-over-open-data`

Open State Foundation. (n.d.). *About.* Retrieved June 1st, 2019, from `https://openstate.eu/en/about/`

Parycek, P., Hochtl, J., & Ginner, M. (2014). Open government data implementation evaluation. *Journal of theoretical and applied electronic commerce research*, *9*(2), 80–99.

Pereira, G., Macadar, M., Luciano, E., & Testa, M. (2017). Delivering public value through open government data initiatives in a smart city context. *Information Systems Frontiers*(2), 213–229. doi: 10.1007/s10796-016-9673-7

Reggi, L., & Dawes, S. (2016). Open government data ecosystems: Linking transparency for innovation with transparency for participation and accountability. In H. J. Scholl et al. (Eds.), *Electronic government* (pp. 74–86). Cham: Springer International Publishing.

Safarov, I., Meijer, A., & Grimmelikhuijsen, S. (2017). Utilization of open government data: A systematic literature review of types, conditions, effects and users. *Information Polity*, *22*(1), 1-24.

Saxena, S. (2018). National open data frames across japan,the netherlands and saudi arabia: role of culture. *foresight*, *20*(1), 123-134.

Shepherd, E., Bunn, J., Flinn, A., Lomas, E., Sexton, A., Brimble, S., ... Page, J. (2019). Open government data: critical information management perspectives. *Records Management Journal*, *29*(1-2). doi: 10.1108/RMJ-08-2018-0023

Sieber, R., & Johnson, P. (2015). Civic open data at a crossroads: Dominant models and current challenges. *Government Information Quarterly*, *32*(3), 308-315. doi: https://doi.org/10.1016/j.giq.2015.05.003

Susha, I., Zuiderwijk, A., Charalabidis, Y., Parycek, P., & Janssen, M. (2015). Critical factors for open data publication and use: A comparison of city-level, regional, and transnational cases. *JeDEM - eJournal of eDemocracy and Open Government*, *7*, 94-115. doi: 10.29379/jedem.v7i2.397

Turner III, D. W. (2010). Qualitative interview design: A practical guide for novice investigators. *The Qualitative Report*, *15*(3), 754–760.

Ubaldi, B. (2013). Open government data: Towards empirical analysis of open government data initiatives. *OECD Working Papers on Public Governance*, *22*, OECD Publishing, Paris. doi: https://doi.org/10.1787/5k46bj4f03s7-en

van de Reep, J., & Linnekamp, K. (2019, May 23). Amsterdammer stemt makkelijker dan texelaar. *Financieel Dagblad*. Retrieved from `https://fd.nl/achtergrond/1302038/amsterdammer-stemt-makkelijker-dan-texelaar#`

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, *27*(3), 425–478. doi: 10.2307/30036540

Verdonk, A. (2019, Feb 18). Zwerfvuil op straat? app de gemeente. *NRC Handelsblad*. Retrieved from `https://www.nrc.nl/nieuws/2019/02/18/zwerfvuil-op-straat-app-de-gemeente-a3654465`

Vetrò, A., Canova, L., Torchiano, M., Minotas, C., Iemma, R., & Morando, F. (2016). Open data quality measurement framework: Definition and application to open government data. *Government Information Quarterly*, *33*(2), 325–337. doi: https://doi.org/10.1016/j.giq.2016.02.001

Webster, J., & Watson, R. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MIS quarterly*, xiii–xxiii. doi: 10.2307/4132319

Wijnhoven, F., Ehrenhard, M., & Kuhn, J. (2015). Open government objectives and participation motivations. *Government Information Quarterly*, *32*(1), 30-42. doi: https://doi.org/10.1016/j.giq.2014.10.002

WistUData. (2019, March 6). [Data set]. Retrieved from `https://www.dataplatform.nl/dataset/`

a8401490-58d7-4916-a809-51963423eba0

Wohlin, C. (2014). Guidelines for snowballing in systematic literature studies and a replication in software engineering. In *Proceedings of the 18th international conference on evaluation and assessment in software engineering* (pp. 38:1–38:10). doi: 10.1145/2601248.2601268

Yin, R. K. (2018). *Case study research and applications: Design and methods*. Thousand Oaks, CA, USA: Sage publications.

Zuiderwijk, A., & Janssen, M. (2014). Open data policies, their implementation and impact: A framework for comparison. *Government Information Quarterly*, *31*(1), 17-29. doi: https://doi.org/10.1016/j.giq.2013.04.003

Zuiderwijk, A., Janssen, M., & Davis, C. (2014). Innovation with open data: Essential elements of open data ecosystems. *Information Polity*, *19*(1-2), 17-33. doi: 10.3233/IP-140329

Zuiderwijk, A., Janssen, M., & Susha, I. (2016). Improving the speed and ease of open data use through metadata, interaction mechanisms, and quality indicators. *Journal of Organizational Computing and Electronic Commerce*, *26*(1-2), 116-146. doi: 10.1080/10919392.2015.1125180

Zuiderwijk, A., Volten, C., Kroesen, M., & Gill, M. (2018). Motivation perspectives on opening up municipality data: Does municipality size matter? *Information*, *9*(11). doi: 10.3390/info9110267