Participation in Open Government
To my husband
Örebro Studies in Informatics 8

Iryna Susha

Participation in Open Government
Abstract


This thesis is dedicated to the phenomenon of open government, an emerging research theme and a development within the digital government practice domain. Open government is an ambiguous concept but in essence it conveys that the path to better government runs through openness of information and processes of government organizations. Information and communication technologies play an important role in open government, as they are used for provision of information or data and for support of participatory processes. Transparency, participation, and collaboration are considered the pillars of open government. To date open government has been largely driven by and focused on information provision and the transparency pillar. It is far less clear how to achieve participation (and collaboration) in the framework of open government. Recent research shows there is a lack of discussion as well as slow progress in terms of the participation pillar of open government.

This research aims to address this gap and sets out to identify the challenges to implementation of participation in the open government perspective. This problem is investigated on the basis of two participation cases – a European e-participation project and open government data initiatives in two countries (Sweden and the Netherlands). This thesis comprises of five studies, two conceptual and three empirical (two case studies and a survey).

The findings of this thesis offer an integrated perspective on participation in open government consisting of three categories: participation in open data; participation in open decisions; and participation in open services. Based on the empirical studies, the thesis provides an analysis of the challenges which pertain to the implementation of these categories of participation. Both studied cases provided an example of lower-than-expected participation levels and hence a number of lessons learnt. Four meta-challenges are further inferred which characterize the implementation of participation in open government in general. This thesis strengthens the body of knowledge on open government in general and participation therein specifically by providing empirically gained and theoretically grounded insights about the implementation practice of participation.

Keywords: open government, participation, challenge, e-participation, open data

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Iryna Susha – Örebro, March 3, 2015
List of papers

Study 1

Study 2

Study 3

Study 4

Study 5

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# Table of Contents

**ACKNOWLEDGEMENTS**

**LIST OF PAPERS**

1. INTRODUCTION .................................................................................. 11  
   1.1 Technology in government ................................................................. 12  
   1.2 What does “open” mean? ................................................................. 13  
   1.3 Open government in practice ............................................................. 16  
   1.4 Focus on participation ................................................................... 18  
   1.5 Problem statement ....................................................................... 20  
   1.6 Research question ....................................................................... 22  
   1.7 Overview of challenges from literature ............................................ 25  
   1.8 Research design ........................................................................... 28  
   1.9 Outline of the thesis .................................................................... 30  

2. THEORIES ....................................................................................... 32  
   2.1 Open government perspective .......................................................... 36  
   2.2 E-participation theory ..................................................................... 37  
      2.2.1 Genre theory ........................................................................... 39  
   2.3 Open innovation theory .................................................................. 40  
      2.3.1 Model of driving factors of UI ................................................. 41  

3. METHODS ....................................................................................... 43  
   3.1 Research process .......................................................................... 44  
   3.2 Methods for empirical studies ....................................................... 47  
      3.2.1 Data collection in case 1 ......................................................... 48  
      3.2.2 Data analysis in case 1 .......................................................... 52  
      3.2.3 Data collection in case 2 .......................................................... 55  
      3.2.4 Data analysis in case 2 .......................................................... 58  
      3.2.5 Data collection in survey ......................................................... 60  
      3.2.6 Data analysis in survey .......................................................... 62  
   3.3 Validity issues ............................................................................... 63  
   3.4 Ethical considerations ................................................................... 65  

4. FINDINGS ....................................................................................... 67  
   4.1 Study 1 – Literature review of e-participation ................................ 68  
   4.2 Introducing ECI case ................................................................... 69  
   4.3 Study 2 – Conceptual study of ECI ................................................. 70  
   4.4 Study 3 – Empirical study of ECI ................................................. 72
4.5 Update on the ECI ................................................................. 75
4.6 Introducing open data cases .................................................. 77
4.7 Study 4 – Comparative study of open data .............................. 78
4.8 Study 5 – Survey of businesses on open data ......................... 81

5. DISCUSSION ............................................................................... 86
5.1 Overview of identified challenges .......................................... 86
  5.1.1 Integration of input ......................................................... 89
  5.1.2 Inclusion and thresholds ............................................... 91
  5.1.3 Supply and demand ...................................................... 93
  5.1.4 High-impact results ....................................................... 95

6. CONCLUSIONS .......................................................................... 98
6.1 Summary of conclusions ..................................................... 98
6.2 Contributions ........................................................................ 101
6.3 Limitations and future research ............................................ 103

REFERENCES ............................................................................. 105

ANNEX
1. Introduction

This thesis is situated in the field of digital government research, often called e-government or e-governance. The field encompasses the use of information and communication technologies (ICTs) to enable citizens, politicians, government agencies, and other organizations to work with each other and carry out activities that support civic life (Robertson & Vatrapu, 2010). Digital government is a multi-disciplinary domain comprising such disciplines as public administration, information systems, business and management, political science, computer science, information studies etc. This research is positioned within the Information Systems discipline.

The thesis is dedicated to the phenomenon of open government, an emerging research theme and a development within the digital government practice domain. Open government postulates that the path to better government runs through openness of information and processes of public organizations. Such openness can enable public scrutiny of government performance, increase accountability of government officials, bring government information closer to the citizens, foster new partnerships and collaborations of government with citizens, businesses, non-profits, and other non-governmental actors etc. By deliberately opening up to the world governments offer an incentive to all interested parties to engage in improving and innovating governmental work. The key idea here is to scoop in the collective knowledge and creativity found outside the boundaries of government organizations. This input (from citizens, experts, organizations, companies etc.) can help solve complex problems and challenges, adopt smarter policies and decisions, and create more efficient and innovative public services. Modern technology tools can play a crucial role in these processes of interaction and collaborative working between government organizations and external participants. A prominent example back in 2011, that has also inspired this research work, was the crowdsourcing of the Icelandic constitution using social media. This was an unprecedented bottom-up attempt to achieve meaningful participation of citizens via social networks in complex governmental business. It offered Icelanders a real chance to be part of a fundamental process in the shaping of the future of their country. This example triggered my interest to investigate what happens when governments open up and invite contributions from the general public. In 2013, later in the research process, it became known that sadly the Icelandic crowdsourced proposal stalled due
to institutional hurdles and thus was not very successful. This made me realize that it was important to understand the challenges and lessons learnt from cases like this; apparently there was a gap between dream and reality in open government. Hence, this thesis work is framed to explore the challenges to realizing the promises of participation in open government and how they can be overcome. It is an issue of high importance from a societal point of view; it is vital for both citizens and organizations, having invested so much into a novel inspiring endeavour, to understand and draw lessons about why things do not work out as planned. There is also little systematic research in this domain, as open government and the new methods of e-participation it entails is a new phenomenon. Therefore, it is an interesting issue also from an academic standpoint to explore what new ways of working together open government proposes, perhaps even requires, and what is needed to make them work. It is important to understand this new phenomenon and put it in perspective given what is already known from previous research on e-participation and e-government.

In this Introduction I will discuss the central focus of this thesis – the idea of open government. I then focus on participation as a fundamental objective of open government. I explain the complexity of the idea and the hardships of achieving participation in practice. Thereafter, the research questions are introduced. The Introduction is concluded with the outline of the research design and the structure of the thesis.

1.1 Technology in government

Present-day Information and Communication Technologies (ICTs) offer lots of potential for the public sector to support services, government administration, democratic processes, and relationships among citizens, civil society, private sector, and the state (Dawes, 2008). E-government research, which has been advancing since 1990s, has been reporting generally positive results (Andersen et al., 2010). In practice in certain areas e-government has clearly managed to make public services more efficient; for instance, in the EU the top three most used e-government services are declaring income, declaring change of address, and enrolling in higher education (Capgemini Consulting, 2013). Alongside some success, there is a lot of “unfinished business” (Bannister & Connolly, 2012) and new challenges facing governments in the digital age.

The spread of social media and web 2.0 in the first decade of 2000s has brought about significant changes in the ways information is created, shared, and processed in society. Two main shifts can be observed: the rise
of peer production, when loosely connected individuals collaborate with each other based on shared resources and outputs (Benkler, 2006), e.g. crowdsourcing; and the phenomenon of “produsage”, when collaborative communities create shared content in a networked environment breaking down the boundaries between producers and consumers (Bruns, 2008), e.g. citizen journalism. In the domain of public governance the rapidly shifting role of users – to become active creators – is heartfelt but not entirely understood. There are visions, calls for change, policies; in any case individuals embrace new digital media much faster than organizations, let alone bureaucracies.

Different niche paradigms have emerged within the e-governance field as a response to these technological developments: government 2.0, e-government 2.0, social-media-based government, smart government, collaborative government, networked governance, do-it-yourself government, open government. The latter is the paradigm which has most prominently featured in governmental policies around the globe in the past few years. The role of ICTs in open government is very diverse; in essence open government uses technologies for (a) provision of information or data (open information) and (b) for support of participatory processes (open process). As yet there is no exhaustive inventory of technology tools that can be used to pursue open government goals, but there are quite a few insights available from research and practice. For instance, for open development aid, a subdomain of open government, the ICT toolbox includes open data, open standards, and web 2.0 interactivity (Linders, 2012b). The participatory element of open government can be supported by diverse social computing and e-participation tools like social networking; collaborative writing tools; feedback, rating, and reputation systems; opinion mining tools; sentiment analysis tools; argumentation support tools; visualizations; deliberation tools and so on (Lampathaki et al., 2010). The provision of information and data for transparency can involve using open data publication tools, web dissemination and promotion, user interaction, data analytics tools, visualization, mash-ups etc. (ibid). Therefore, from the viewpoint of the Information Systems discipline it is a fascinating new development in the ICT and government domain.

1.2 What does “open” mean?
Open government is becoming an increasingly global vision of transformation in the public sector. It is seen as a new strategy to achieve more effective government, better decision-making, and more active problem-
solving. There is no uniform definition or scope of open government as a concept (Yu & Robinson, 2012). Although the term is not new it has lately been actualized under the stimulus of current technology trends. An important catalyst of adopting the open government paradigm is the widespread use of web 2.0 technologies. The term stands for the changed experiences of using the web, namely when content and applications are modified not by one individual but all users in a collaborative fashion. Integration of web 2.0 tools and services can enable society to realize the principles of open government (Parycek & Sachs, 2010). It is because web 2.0 has initiated a number of shifts in how information production is organized. Hurdles to access information are diminishing in web 2.0, new horizontal collaboration models have been made possible (Pierson, Mante-Meijer, & Loos, 2011), innovation may become more social.

Open government discourse has close links to the concept of wikinomics. It is a term coined by Tapscott & Williams (2008) in their book *Wiki-nomics: How mass collaboration changes everything*. It stands for a set of new models of mass collaboration in business environment when free individual agents come together and cooperate to solve a problem or improve a given operation. The wikinomics approach reasons that making better decisions requires looking outside the institutional centres of expertise; it is based on four core principles:

1. Openness – open content, open standards, financial transparency, and openness to new ideas and resources;
2. Peering – replacement of hierarchical model with a collaborative one;
3. Sharing – a less proprietary approach to products and knowledge;
4. Acting globally – ignoring physical and geographic boundaries at the corporate and individual level.

Open government is a successor paradigm of previous traditions of thought addressing the relationship between technology, government, and democracy. In a sense, it is a child of e-government and e-democracy, as open government incorporates historically democratic practices, now enabled by emerging technology, within administrative agencies (Harrison et al., 2011). Some commentators consider open government to be the new end and the new means of achieving e-government (Nam, 2011). Others view it the other way around – e-government as a strategic method for reaching a vision of open government (Ruesch, Basedow, & Korte, 2012).
Anyhow, open government as a term, compared to e-government, bears a stronger normative message – openness at the heart of all governmental processes, while “electronic” does not always mean “open”.

So what exactly does “open” stand for in open government? The open government discourse today is comprised of different lenses (Linders & Wilson, 2011); the meaning of openness is conceptualized differently in each of them (ibid).

First the Transparency lens – openness as deliberate transparency of government information. This is the conventional understanding of open government expressed in the freedom of information (FOI) laws all over the world. Here open government is a synonym of public accountability and the “right to know” of citizens. In Sweden, for example, the FOI law – called the Principle of Public Access – was adopted as early as 1766, making it the first nation embarking on open government reforms within the scope of the Transparency lens. In practical terms, in this conceptualization open government is implemented through such mechanisms as: proactive information sharing, requests for information, whistle-blower leaks, lobbying transparency, and elimination of different barriers to access information. The use of new information and communication technologies facilitates the dissemination and access to information in this respect.

Second the Technology lens – openness as creativity and collaboration of the Internet-enabled masses. In this perspective the open government ideal draws in part on the philosophy and methods of the open source movement. As Eric Raymond writes in his book The Cathedral and the Bazaar, the success of the open source model in software called into questions the utility of command-and-control systems, of secrecy, of centralization in the relationship between individuals and institutions in many other industries and domains (Raymond, 2001). Openness in open source terms is about harnessing the power of distributed peer review with a view of innovating and creating better products (Matei & Irimia, 2014). Collaboration is the lifeblood of open source development and production. The principles of open source include reciprocity, peer review, decentralization, and openness naturally. Open government is hence an effort to transpose this spirit of collaboration into public administration.

Third the E-democracy lens – openness of government decision-making to public participation enabled by ICTs. In this perspective open government signifies a more democratic society. In this view the objective of open government is to foster a new model of e-democracy – an open collabora-
tive one. In her book *Wiki Government* Beth Noveck (former Deputy Chief Technology Officer for Open Government in the US) reasons that e-democracy has thus far not delivered on its promise and a more fundamental explanation for that is that the theory of participatory democracy underlying the design of government institutions is outdated (Noveck, 2009, p. 34). Both direct and deliberative models of e-democracy have encountered limitations in practice: direct engagement via voting, initiatives, and referendum is stalled by security and reliability concerns; online deliberation via meaningful conversations is difficult to achieve due to representation bias and poor discussion quality. Following this line of argument, a collaborative e-democracy model is specifically aimed at increasing the effectiveness of decision-making and problem-solving; it involves engaging experts in respective areas in information gathering, evaluation and measurement, and development of a solution.

In sum, open government is comprised of a whole variety of elements. As Dan Tapscott writes in the foreword to the book *Open Government: Collaboration, Transparency, and Participation in Practice*: “This is government which opens its doors to the world; co-innovates with everyone, especially citizens; shares resources that were previously closely guarded; harnesses the power of mass collaboration; drives transparency throughout its operations; and behaves not as an isolated department, or jurisdiction, but as something new – a truly integrated and networked organization” (Lathrop & Ruma, 2010, p. xvi). Historically, the origins of open government were indeed in the idea of accountability. But nowadays governments strive to be open for participation and collaboration with individuals and organizations and to embrace the role of new technologies in driving innovation. Therefore, there is an accepted notion that open government is comprised of three pillars: transparency, participation, and collaboration – as was initially stipulated in the White House memorandum of Obama on open government.

### 1.3 Open government in practice

The first step was taken by President Obama in the US in his Open Government Directive issued on 8 December 2009. Since 2011 the initiative of Open Government Partnership (OGP), launched by Obama and seven other heads of state, has grown from 8 to 65 participating countries. In these countries the government and civil society are committed to implement open government reforms. The latest commitments of OGP countries
cover a variety of topics which can be grouped into seven categories (Open Government Partnership, 2014b):

1. Public Participation – engaging citizens in policy-making;
2. Government Integrity – fighting corruption and strengthening democratic institutions;
3. Freedom of Information – guaranteeing public access to government information;
4. Fiscal Transparency – helping citizens follow the money;
5. Public Service Delivery – making services work for the people;
6. Extractive Resources Transparency – ensuring extractive revenues are used for public benefit;
7. Open Data – digitizing and opening up government data for access to information and transparency.

For instance, the commitment of Sweden as member of the OGP has emphasized open aid, i.e. transparency of development aid funding. The portal Open Aid¹ was created which provides access to aid information and enables analysis and visualization to enhance citizen awareness and participation and government accountability around this issue.

Beyond commitments and flagship initiatives in a few leading countries, it is difficult to ascertain the progress of open government in any holistic manner. Progress is measured against the targets posed by policies; it is in essence a compliance process. Within the OGP framework there exists the Independent Reporting Mechanism (IRM) comprised of a panel of experts who evaluate how well the commitments of countries have been met. The evaluation of the first OGP year is a subject of controversy, not all commentators agree OGP has been as successful as the metrics of the IRM show. In the end only 5% of commitments that were found to be transformative and specific enough were completed by the second wave countries (not the eight founding members) (TechPresident, 2014).

Many initiatives run outside the framework of the OGP. In the EU the open government concept has been implemented in the European E-government Action Plan 2011-2015; one of its four priorities is User Empowerment, i.e. “increasing the capacity of citizens, businesses, and other organizations to be proactive in society through the use of new technolog-

¹ http://www.openaid.se/
ical tools” (European Commission, 2010). This priority is planned to be fulfilled via the following actions (ibid):

1. Services designed around user needs and inclusive services;
2. Collaborative production of services;
3. Reuse of public sector information;
4. Improvement of transparency;
5. Involvement of citizens and businesses in policy making processes.

Similar commitments can be found on a country level; for instance, the Digital Agenda for Sweden presents citizens as potential co-creators and calls for “smart and open government supporting innovation and participation” (Ministry of Enterprise, 2011).

In sum, in practice open government implementation entails a number of steps in different dimensions of activity: legal obligations, release of open data, initiatives and tools for collaboration and peer production, and changes in internal processes and institutional relationships (Sandoval-Almazan & Gil-Garcia, 2014).

1.4 Focus on participation

Participation has been recognized as one of the core values of open government reforms. This was the message of the first annual Open Government Awards, which took place in September 2014 at the United Nations headquarters in New York. The criteria for the awards were focused on looking at how governments are involving citizens in designing and implementing public policies and services (Open Government Partnership, 2014a). The top 10 finalists were selected out of 22 submissions from different countries; the first prize went to Denmark for an initiative which legally empowers senior citizens to influence local policy-making. In Denmark senior citizens’ councils are a legal requirement in all municipalities, furthermore the latter are obliged to consult the councils on all policy issues concerning elderly population. The second prize went to Montenegro for an initiative enabling citizen reporting of unregulated economic activity via an app, website, or hotline. The third place was taken by the Philippines for its grassroots participatory budgeting program.

The Open Government Awards defined citizen participation as “the mechanisms by which citizens participate in and have influence on the design and implementation of public policy and services, with the ultimate goal of making government more open, responsive, and accountable to
their needs” (Open Government Awards, 2014). However, the majority of initiatives in the top 10 have been realized thanks to the collaboration of the government with civil society and partners in the private sector. The bottom line of all these transformations is that government becomes a platform for creation of public value and social innovation; it provides resources and sets rules, but allows citizens, non-profits, and the private sector to do most of work (Lathrop & Ruma, 2010, p. xvii). Hence, the participation of these non-governmental actors and collaboration of governments with them are crucial for pursuing all open government objectives.

Participation in open government has been discussed in the perspective of a new type of e-democracy formulated by Beth Noveck – open collaborative democracy. Collaborative democracy is “a new approach for using technology to improve outcomes by soliciting expertise (in which expertise is defined broadly to include both scientific knowledge and popular experience) from self-selected peers working together in groups in open networks” (Noveck, 2009, p. 17). Collaboration in this sense is distinct from the concepts of crowdsourcing or peer production in that it emphasizes shared work of a government institution and a network of participants in different roles (ibid). The case for open collaborative democracy is based on three arguments:

1. Collaboration as a distinct form of democratic participation – looking beyond direct and deliberative democracy models;
2. Visual deliberation – designing collaborative practices and embedding it in software;
3. Egalitarian self-selection – ability of citizens to self-select in which arena to participate based on their interest and knowledge.

Participation in an open government context is versatile and can take on different forms. Linders (2012a) views participation in open government through the prism of co-production and distinguishes the following forms of citizen participation based on the stage of the policy lifecycle:

1. Consultation and ideation: citizens share opinions to help governments select among policy and design alternatives (Design stage);
2. Crowdsourcing and co-delivery: citizens are invited to participate in finding a solution for a certain problem proposed by the government (Implementation stage);
3. Citizen reporting: citizens provide information to government with regards to existing services (Monitoring stage).

To sum up, participation (and collaboration as a variation thereof) is seen as a key ingredient of open government. It is a means to achieve a more democratic and more effective public sector. Government transparency, as Ruesch et al. (2012) put it, is only the first building block of open government. Information provided by the government needs to turn into action and for that participation is essential.

1.5 Problem statement
Meijer et al. (2012) defined openness as the extent to which citizens can monitor and influence government processes through access to government information and access to decision-making arenas. Hence, access to information is the “vision” of citizens and other non-state stakeholders, while participation is their “voice” (ibid). Currently, there is a tension in the open government practice in that transparency and information provision activities tend to overshadow the need for the participatory component. It is the “build it and they will come” approach which is founded on the provision and lack of engagement. As found by Nam (2011), introducing open government reforms does not lead to change in attitudes of the public to the extent government expects. The lack of participation, or the so-called “usage gap” (Molinari & Ferro, 2009), is still a challenge which needs to be addressed even in the new paradigm of open government. If simplified, the first lens of open government, the transparency lens, is a manifestation of this minimalist view of open government. The first Open Government Awards have recognized this imbalance and focused on citizen engagement initiatives as one of the blind spots of open government.

Much of the work in open government has revolved around the first Obama pillar – transparency; the other two, participation and collaboration, received much less attention. Participation is an ill-defined term which can span many forms, methods, or levels of engagement. The kind of participation that open government reforms aim to promote is not clear. Theoretically public engagement in an open government perspective develops in a number of stages, as Lee & Kwak (2011) envision in their
model. Upon the establishment of certain initial conditions, open participation and open collaboration can be achieved, which afterwards can transform into “ubiquitous engagement”. However, there is little clarity about what participation and collaboration mean in an open government context; practitioners are confused about how to distinguish between these two pillars (Di Maio, 2010). Linders & Wilson (2011) distinguish between participation and collaboration in open government by saying that participation refers to individuals and does not entail any influence over decisions, while collaboration refers to organized entities and involves power sharing in decision-making. In this view, participation can take top-down or bottom-up forms and take place in formal and informal decision-making arenas (Meijer et al., 2012). A contending view is understanding collaboration as a form of democratic participation, which takes place in circumstances often disconnected from decision-making (Noveck, 2009, p. 19). In this view, collaboration is part of the participation spectrum and participation extends into all stages of the policy lifecycle – from agenda-setting towards service design and delivery. This view of participation (and collaboration as a distinct form of it) is consistent with the definition of participation proposed by Albrecht et.al (2008) – it is an umbrella term for all levels of involvement of both citizens and non-government stakeholders in political as well as administrative decision-making processes. This ambiguity led some practitioners to suggest different open government pillars instead of transparency, participation, and collaboration – transparency, participation, and accountability ("Open Government Standards," 2014).

Hence, for government organizations it is not obvious how to determine which actions and programs count as participative or collaborative in an open government context (Harrison et al., 2011). Open government policies are often vague presenting participation as an end of administrative action rather than a means of achieving value. There is a need for operationalization and definition of terms and goals when it comes to participation in open government. There is a rhetoric-reality gap of placing open government policies into practice. Besides, first assessments have shown that government organizations often fail to offer standards for what constitutes high-quality public participation within the open government framework. For example, an evaluation of implementation plans of the participation pillar of open government in US federal agencies (Lukensmeyer, Goldman, & Stern, 2011) found that no indicators are used to measure meaningful progress; greater experimentation is required;
lack of measures to incorporate public input into formal processes; lack of measures to diversify participants and enable inclusion. This is despite of the fact that the US is the founding member of the OGP and is considered a leading country in open government. This finding does not surprise, as governments in general struggle to embrace the knowledge and capacities to organize participation. This is especially true in the context of web 2.0. As Millard (2010) concludes, current government adoption of web 2.0 is somewhere between 1.0 and 2.0 – 1.5, as he terms it. Besides web 2.0 integration into information practices, there is a need for institutional, organizational, and cultural shifts within the public sector. A complication in the open government context is that it is often unclear from the outset with whom to collaborate.

Hence, the practical problem which this research aims to address is as follows. Participation and collaboration, alongside transparency, are considered the pillars of open government. It is unclear, both from conceptual and practical points of view, how to achieve participation in an open government perspective. The transparency component of open government has been operationalized and detailed to a far greater extent (e.g. in open data policies). This research aims to develop a comprehensive practice-oriented understanding of participation in an open government context and how it is implemented by public organizations.

1.6 Research question

The main research question of this thesis is:

What are the challenges to implementation of participation in open government perspective?

First it is helpful to define what is meant by the term “implementation” and thus delineate the scope of further work within the IS discipline.

The Information Systems discipline in its core “focuses on how IT systems are developed and how individuals, groups, organizations, and markets interact with IT” (Sidorova, Evangelopoulos, Valacich, & Ramakrishnan, 2008). However, since the late 1990s the IS discipline has become less focused on technology development and more focused on the social context in which information technologies are designed and used (ibid). Hirschheim & Klein (2012) provide a detailed account of the evolution of the IS discipline and the shifting focus thereof in the four decades since the 1960s. Lately the identity of the field has been fervently debated.
(Agarwal & Lucas Jr, 2005; Benbasat & Zmud, 2003; Lyytinen & King, 2006; Weber, 2006) with the main point of discussion revolving around what the core of the discipline should be. Benbasat & Zmud (2003) defined three core properties of IS research as follows: (1) how IT artefacts are conceived, constructed, and implemented; (2) how IT artefacts are used, supported, and evolved; (3) how IT artefacts impact (and are impacted) by the contexts in which they are embedded. This conceptualization of the IS discipline can be considered an IT-artefact-centric perspective that views IT artefact as the central and defining element of Information Systems research (Akhlaghpour, Wu, Lapointe, & Pinsonneault, 2013). A contending view, represented by Bryant (2008) for instance, is the “inclusive perspective” (ibid) which calls for a more varied and wider definition of the field unconfined by the focus on the IT artefact but open to what people do and what they are concerned about. In other words, the inclusive perspective defines the IS discipline as a quest for “understanding the relationship between artefact, humans, and organizations” (Bryant, 2008, p. 163). Without taking sides in this debate, my research work recognizes the significance of both perspectives: on the one hand, this thesis is focused on one of the core IT-artefact-centric properties of the field – how IT is implemented, supported, and used; on the other hand, this thesis brings to the forefront the relationship between users and an organization arising through the use of an IT artefact (participation). Having said that I adopt an “ensemble view of an IT artefact as a development project” in my research (Orlikowski & Iacono, 2001), i.e. the social process of designing, developing, and implementing a technical artefact in a specific organizational context.

Implementation is a research field which emerged in the 1970s in the public administration discipline. The foundations of implementation research in the public policy and service domain were laid down by the seminal work of Pressman & Wildavsky (1973) who examined the failure of implementation of a large-scale federal economic program in the US. Simply put, implementation is the process of policy becoming action (Schofield, 2001, p. 254); it is a specified set of activities designed to put in practice a certain program (Fixsen, Naoom, Blase, & Friedman, 2005, p. 5). This is achieved through different dynamic processes in an organization, such as decision-making, communication, negotiation, compromise, use of power and others (Schofield, 2001). Specifically in relation to Information Systems Magalhaes (1999, p. 7) conceptualized IS implementation as “a process of change aimed at the integration of technological arte-
facts into the social structures and processes of an organization”. Hence, the integration of an IT artefact into the social context – or if I may, “putting the system to use” – is seen as the fundamental idea behind implementation.

In the Information Systems discipline implementation research aims to understand how systems can be implemented successfully so the organization receives the maximum benefit (Lucas, Ginzberg, & Schultz, 1990). Historically information systems implementation research developed into two prominent strands – the factor perspective and the process perspective (Myers, 1994). The factor perspective looks to identify variables associated with implementation success or failure; in the context of digital government implementation the examples of this kind of research are plentiful (Mishra & Mishra, 2011; Sagheb-Tehrani, 2010; Sang, Lee, & Lee, 2009; Weerakkody, Dwivedi, Brooks, Williams, & Mwange, 2007). The process perspective looks to explain how and why the implementation process unfolds over time; it can explore the relationships between system designers and users and the impact of the system on the organization. There is a growing number of studies on digital government implementation falling into this category as well (Chan & Pan, 2008; Chen, Pan, Zhang, Huang, & Zhu, 2009; Tan, Pan, & Lim, 2005; Welch & Pandey, 2008). In general digital government implementation is a complex and multifaceted process; it is comprised of such elements as information systems management, project management, policy implementation, and innovation management (Grönlund & Lindblad-Gidlund, 2010). The same complex nature characterizes open government implementation which is at the centre of this thesis.

As follows from the above, implementation research specifically addresses success and failure of public sector programs and the gap between conception and reality. I find it to be a most suitable research perspective to adopt given my research objectives (to identify and understand the challenges faced by public organizations implementing participation in open government). The implementation concept offers sufficient space for understanding the multifaceted process of open government as it brings about the various dimensions of implementation (technological, managerial, policy-related, innovation-related). This research is thus expected to provide a comprehensive picture of the challenges that public organizations face in all these dimensions of implementation.
1.7 Overview of challenges from literature

The word “challenge” can be defined as a difficult task or problem that requires thought and skill for resolution (Merriam-Webster, n.d.). In this thesis “challenges to implementation” refers to the challenges that government organizations face in the implementation process of the participation component of open government initiatives. As argued in section 1.5, participation in open government is an emerging issue with a thin research base. However, lessons can be drawn from related research domains (although the segment of literature dealing with exactly that is rather thin) regarding the challenges governments commonly experience when implementing participatory projects. Here, the focus is on the relationship and interaction of governmental organizations with diverse participants.

The closest reference domain in this case is e-participation. Implementing e-participation has not been easy and has seen modest success. A recent exploratory review of e-participation practice in the EU (Tambouris et al., 2012) offers emerging insights about the state of play and common challenges at different levels (European, national, regional, local). Overall their study found that e-participation had been used mainly to provide an alternative communication channel, rather than to qualitatively change the relationship between government officials and citizens. This is an important provisional finding signalling that the potential of e-participation is hard to realize due to a number of challenges.

Recent research boasts a considerable number of studies which identify, with varying degrees of generalizability, challenges (barriers, pitfalls, problems) to implementation of e-participation. Rose & Sæbø (2008) came up with a number of categories of such challenges based on a case study: stakeholder engagement, platform design, platform management, process re-shaping, and evaluation and improvement. In a similar fashion, Andersen et al. (2007) suggested three interrelated key challenges to the implementation of e-participation: the choice of a communication style, the choice of technology, and the choice of an institutional approach to participation. I will elaborate on these three types of challenges in the below; as all challenges are interlinked, this categorization is used for convenience only.

A prominent communication-related challenge to e-participation implementation is the fact that governments have to cope with a large and diverse range of prospective participants with different levels of knowledge, skills, and motivation (Macintosh, 2007). Unlike in commercial situations, the “customer base” in e-participation projects is often
unspecified, as for democratic reasons it has to be accessible to everyone. A series of studies (Holgersson & Karlsson, 2014; Karlsson, Holgersson, Söderström, & Hedström, 2012) examine closely citizens’ willingness as well as their abilities to participate and the trade-offs the public officials have to make between efficiency and democratic goals in involving users in public e-service development for example. The problem of citizens’ motivation and skills resounds in the research of Epstein et al. (2014) who looked at the “analogue” barriers to e-participation.

Another challenge in this category is the fact that often e-participation initiatives attract fewer participants than planned resulting in low uptake of e-participation tools (Lee, Loutas, Sánchez-Nielsen, Mogulkoc, & Lacigova, 2011; Scherer & Wimmer, 2010; Tambouris et al., 2012). It is evidently a difficult and yet unresolved problem to attract and sustain the involvement of participants with an e-participation project. In this vein Macintosh (2007) emphasizes the problem of the lack of trust among citizens that their input will be taken seriously, which in its turn explains the lack of motivation to participate.

An emerging technology-related challenge mentioned in the literature is the observation that often public organizations opt for conventional and less experimental kind of technology for e-participation (Tambouris et al., 2012). Similarly, a study by Millard et al. (2012) based on a survey of citizens concluded that one of the most prominent challenges governments face is to be more innovative and creative in implementing e-participation. However, one must beware of the technological determinism – overcoming which is another serious challenge – and aim to integrate technologies into the adaptation of government-citizen relationship (Macintosh, 2007), precisely as the Magalhaes’ definition of IS implementation instructs. As phrased by Lee et al. (2011, p. 122), many of the known challenges “are for the most part not technical obstacles, but barriers that apply to participation in the broader sense of the word”.

As concerns the institutions-related challenges, the literature reads at least a few. Macintosh (2007) explains that there is a lack of integration of e-participation tools into policy processes and organizational structures. Furthermore, other studies point to the problem of sustainability as a fundamental challenge to e-participation (Cleland, Mulvenna, Galbraith, Wallace, & Martin, 2012; Tambouris et al., 2012); most e-participation initiatives tend to be one-off pilots without any long-term prospects. Sustainability is not exclusively related to the institutional category of chal-
lenges; it encompasses all others as well as it concerns the sustainability of technology and communication too.

Apart from looking at the challenges commonly faced by governments in e-participation initiatives, it is also relevant to examine what research on open innovation in the public sector has to say about the challenges of involving external partners and collaborators into government-initiated innovation projects. As explained in section 1.2, the legacy of open innovation is one of the legs on which open government stands, and e-participation research does not cover it sufficiently. Hence, in the below I will explain what other additional challenges have been identified in the open innovation literature in the context of public sector programs.

First, as the study by Lee et al. (2012) showed, most countries are in the early stages of application of open innovation in the public sector. Bakici et al. (2013, p. 324) sum up that when speaking of open innovation in the public sector “the main problem to solve is how to effectively connect and engage communities” around the challenges of society. Bason (2010, p. 98) in his book *Leading Public Sector Innovation* speaks of the same problem saying that “one of the key challenges of many public organizations is how to get citizens and businesses involved directly in innovation process”.

A study of open innovation in six cities by Almirall et al. (2014) conveys a similar message; it identified three main challenges and all of them are in one way or another related to stakeholder management in open innovation projects. The first challenge is that it is difficult for public organizations to manage the diversity of actors involved in open innovation projects (citizens, developers, companies, consultants, intermediaries, policymakers etc.). The second challenge is linked to the first one: the need to manage the various motivations that participants have even within homogeneous groups. And the third challenge is that public organizations are faced with a problem of how to integrate intermediaries in the open innovation process. Bakici et al. (2013) further elaborate on the third challenge and explain that factors like conflict of interest, collaboration and control problems, unclear expectations, bureaucracy preclude more successful collaboration between government officials and innovation intermediaries. Several studies mention the challenge of reconciling the open innovation model with the cultural and institutional norms and structures in public organizations (Lee et al., 2012; Van Duivenboden & Thaens, 2008).

Considering this overview of existing literature, my objective is to find out which of these challenges and which new challenges characterize par-
Participation in open government and implementation thereof. To sum up, prior research brings up communication-, technology-, institutions-related challenges, as well as a variety of stakeholder management issues.

1.8 Research design
This research is based on the examination of two cases: an e-enabled citizens’ initiative and open government data. An e-enabled citizens’ initiative is a democratic process that allows citizens to propose new legislation by petition, signatures for which may be collected online. A concrete example used as a case study in this research is the European Citizens’ Initiative (ECI) project launched in early 2012. Open government data is government-held data published in machine-readable formats, which can be freely used, reused, and distributed by anyone. Open data initiatives in Sweden and the Netherlands are being examined in this research. The choice of these cases is based on the consideration of their similarities and differences.

Both the ECI and open government data were viewed as “the next big thing” expected to transform the way policies and services are developed and provided to the citizens. Both examples heavily rely on the use of web 2.0 tools and the enhanced opportunities they offer for collaboration, connectivity, and creativity. For example, one of the lifelines of citizens’ initiatives is sharing content in social networks to gather support for an e-petition. In the case of open data automated data processing and visualization are the basic operations. Both examples are manifestations of an open innovation strategy and were triggered by the expectation that third parties will provide solutions, which governments themselves are unable to develop. Thereby, in both cases governments invite contributions from citizens, communities, organizations, and businesses to issues which they, the government, did not think of. A citizens’ initiative is directed at non-profit actors, while open data is a resource to be used by both commercial and non-profit entities. Both citizens’ initiatives and open data have their primary application domain: a citizens’ initiative is a democratic procedure aimed to lead to policy innovation, whereas open government data is largely driven by economic rationales and is expected to boost service innovation in the first place. However, both citizens’ initiatives and open data have a less explored application domain when, vice versa, citizens’ initiatives can lead to service innovation and open data to policy innovation. A citizens’ initiative procedure is a public service in itself providing citizens with an opportunity to engage and influence policy development.
Similarly, open data as information content can be used to build new knowledge in different policy areas and lead to more efficient policy-making. Thus both citizens’ initiatives can be viewed as content and as service, and this is the perspective I adhere to in my research.

The first study (Study 1) is a literature review which provided initial insights into the complex nature of participation. It posed the following operational research question:\(^2\):

**Study 1: What is the current state of conceptual development of e-participation research?**

This study laid down the theoretical foundations for the two subsequent studies, as it mapped the topics, concepts, agendas, and theoretical tools used in contemporary e-participation research. An important outcome of this study was a classification which ordered e-participation themes into three main categories: stakeholders, applications and tools, and environment. This classification was helpful in identifying the themes and agendas pertaining to the issue of implementing government-initiated e-participation (which the ECI and open data are). Some of the findings of this study were that (a) there was a lack of research focusing on e-participation at the agenda-setting stage of the policy cycle (the ECI case is hence addresses this gap) and (b) that there is a lack of research focusing on the participation of non-state actors, as opposed to government and citizens (the open data case hence picks up on that).

Studies 2 and 3 focused on the case of the European Citizens’ Initiative. The following operational research questions were asked in these studies:

**Study 2: What is the nature of communication as it evolves during the ECI process?**

**Study 3: How was the development of the ECI affected by the institutional context?**

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\(^2\) Research questions found in the studies are called “operational research questions”, while the research question posed in the thesis is called the “general research question”. This is because the research questions used in the papers were formulated to be case-specific and are hence instrumental; the research question in the thesis is aimed at generalizing from cases. Table 7 in Results describes the contribution of operational research questions towards the general research question.
Study 2, the exploratory study of the European Citizens’ Initiative, provided a rich conceptual picture of the expected effects of the ECI, including as mediated by the use of new media, on EU policy-making. The third study, the empirical investigation of the implementation practice of the ECI, offered a number of insights into the challenges experienced at the initial phase of the ECI.

The remaining two studies (Studies 4 and 5) were centred on the case of open government data. The following operational research questions were asked in these studies:

**Study 4:** *Which organizational measures can facilitate the use of open data?*

**Study 5:** *What are the driving factors of open data adoption by businesses for service innovation?*

The fourth study, the empirical multiple case study of open data initiatives, looked into the practices of stimulating the use of open data. Finally, the fifth study, the survey of open data users, shed light on the driving factors of participation, besides the stimulation by data providers, on the basis of open data.

All empirical studies in this thesis, except Study 5, focus on implementation practices of a public organization. The fifth study is in a way special, as it looks beyond the organizational reach to see to which extent implemented systems and processes are adopted and accepted by target users. Thereby Study 5 extends the understanding of participation of users in an open government initiative to account for the drivers and motivation to participate. This is important because, as outlined in section 1.7, attracting and sustaining participation from wider audiences is one of the major challenges for public organizations. While implementing a participatory initiative offers an incentive to participate, the availability of a participation channel alone does not guarantee the interest and engagement of different actors. Therefore, looking at the drivers of users to participate or not can complete the puzzle in the understanding of participation and the challenges to its implementation by governments.

**1.9 Outline of the thesis**

In section 2 the different theories that have informed this thesis are presented. In section 3 I detail the methodology of the individual studies and the research process in general. Section 4 summarizes the findings from the
five studies constituting this thesis and reflects on some of the initial less-
sons to be learnt. In section 5 the findings from the individual studies are
compared and systematized towards answering the main research ques-
tion. In section 6 I present the conclusions with regards to the main re-
search question and elaborate on the contribution that this thesis makes.
2. Theories

In this thesis a number of theoretical frameworks and models were used at different stages of the research process and for various purposes. Oxford English Dictionary (2014) defines the term “theory” very broadly; it can refer to mere hypotheses or contemplations, mental scheme or statement of rules to be followed, system of ideas held as an explanation or account of a phenomenon etc. Thus, in this research theory encompasses what might be termed elsewhere as perspectives, models, frameworks, or body of knowledge.

The overarching theoretical perspective in this thesis was open government; it is the first-order theory. I refer to it as a “perspective” to signify that open government is an emerging body of knowledge with certain normative assumptions about reality. Such assumptions for example posit that the public has the right to scrutinize and participate in government. Other sources refer to open government as a “notion”, “movement”, “concept” (Lathrop & Ruma, 2010), “set of principles”, “ideal” ("Open Government Declaration," 2014), or even a “governing doctrine” (Wikipedia, 2015). Given that many terms, I use the term “perspective” as a neutral label for this idea.

The open government perspective comprises three different lenses following Linders & Wilson (2011): Transparency, Technology, and E-democracy. As I explained in section 1.2, the lenses are distinguished from one another by way of that they conceptualize openness differently and consequently focus on different mechanisms to implement it. Linders & Wilson used the term “lens” to denote the varying approaches, demands, and expectations that different stakeholders and advocates of open government have (ibid). No single lens provides a complete view of open government in theory or practice; therefore I will consider all three in my research. Thus, the intended theoretical contribution of this thesis lies in providing an integrated perspective on participation in open government by applying a number of different theories to study participation. The following theories pertain to these three lenses (Figure 1):

1. E-participation theory, as a tribute to the E-democracy lens;
2. Open data theory, as a tribute to the Transparency lens;
3. Open innovation theory, as a tribute to the Technology lens.
Figure 1 Theoretical grounds of the research

Figure 2 Overview of theories used in the research
Accordingly e-participation, open data, and open innovation theories are second-order theories.

All these theories (perspectives, models, frameworks) were used with a different objective in mind. According to the taxonomy by Gregor (2006), theories may be employed in Information Systems research to fulfil the following five goals:

1. Theory for analysing – answers the what-is question, describes or classifies dimensions or characteristics of a phenomenon, is needed when very little is known, examples are frameworks, taxonomies, classifications;

2. Theory for explaining – answers the how and why questions, used for understanding processes, case studies are widely used to develop this theory type, ascriptions of causality made very carefully;

3. Theory for predicting – answers the what-will-be question, predicts outcomes from a set of explanatory factors without explaining underlying causal connections, part of system remains “black box”;

4. Theory for explaining and predicting – answers the questions what, how and why, when, and what will be, very high level “grand theories”, can be used in process and variance (how one variable can predict changes in another) studies;

5. Theory for design and action – answers the how-to-do question, about the principles of functions, methods, forms in IS development, design science approach.

These types of theories are interrelated and might inform one another, theories for analysing are considered the basis for the development of all other types. Table 1 describes the theories used in this research according to these types. As already mentioned, the overarching theory unifying all research studies was open government; it was applied as a theory for explaining and predicting (type 4) and is the theory of the highest level in this research.
<table>
<thead>
<tr>
<th>Research question</th>
<th>Theory type</th>
<th>Theory</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 What is the current state of conceptual development of e-participation research?</td>
<td>Theory for analysing</td>
<td>E-participation</td>
<td>(Theory building) Classification of e-participation themes using template analysis</td>
</tr>
<tr>
<td>2 What is the nature of communication as it evolves during the ECI process?</td>
<td>Theory for analysing</td>
<td>Genre theory</td>
<td>(Theory application) Proposed a characterization of the ECI process based on genre taxonomy</td>
</tr>
<tr>
<td>3 How was the development of the ECI affected by the institutional context?</td>
<td>Theory for analysing</td>
<td>Genre theory Models of e-democracy</td>
<td>(Theory testing) Explained the initial failure of the ECI by analysing the conflicting expectations of stakeholders</td>
</tr>
<tr>
<td>4 Which organizational measures can facilitate the use of open data?</td>
<td>Theory for design and action</td>
<td>Open data engagement</td>
<td>(Theory building) Developed a list of recommendations from literature and case studies for public organizations to foster open data use</td>
</tr>
<tr>
<td>5 What are the driving factors of open data adoption by businesses for service innovation?</td>
<td>Theory for predicting</td>
<td>Model of driving factors of user innovation</td>
<td>(Theory testing) Examined the driving factors of open data adoption, made propositions about what will influence data use for service innovation</td>
</tr>
</tbody>
</table>

As Table 1 shows, theories used in this research have different explanatory power. Therefore, each of them played a special role in answering the overall research question of this thesis – What are the challenges to implementation of participation in open government perspective? E-participation and genre theory helped describe and characterize what e-participation stands for at a conceptual level based on the case of the ECI. Genre theory is a communication analysis tool classifying types of interaction based on purpose, content, and form. Beyond description, genre theo-
ry and models of e-democracy were used to explain why participation failed in this particular case. Open data theory, being in a nascent state, was used inductively to systematize the knowledge in the field or make theory propositions. The model of driving factors of user innovation was used as a theory for predicting innovation behaviour and use of open data. It is a motivational model proposing a set of factors driving a certain form of participation (user innovation).

The next section discusses the theoretical foundations of open government as a research field. It is followed by the description of theoretical foundations of e-participation and the outline of genre theory. Thereafter I present relevant insights from open innovation literature and explain the model of driving factors of user innovation.

2.1 Open government perspective

The main theoretical framing of this thesis is open government; it is in the context of open government, as a policy and practice domain, that I study the complexities of participation. Open government is an emergent research perspective, which is often defined by its goal - achieving “deliberate openness, both in terms of opening up information for public consumption and opening up processes to stakeholder participation and collaboration” (Linders & Wilson, 2011, p. 262). Hence, the term open government was coined to emphasize the processes of opening up the workings of the government by capitalizing on the potential of modern information technologies.

Research on open government was triggered by the adoption of open government policies around the world. There have been a few attempts by researchers to develop models of open government to characterize and depict the dimensions of open government (Meijer et al., 2012; Sandoval-Almazan & Gil-Garcia, 2014), to envision the process of adoption and maturity of open government (Lee & Kwak, 2011), to assess and measure its implementation (Bertot, McDermott, & Smith, 2011). It is a nascent field with little cohesion theory-wise in the research community. Besides, the overwhelming majority of research contributions focus on open data as an application of open government reforms.
In current open government research four main theoretical pillars can be identified, as summarized by Sandoval-Almazan & Gil-Garcia (2014): wikinomics; open data; network state; and new institutionalism. Arguably, the most widely cited model of open government implementation is the Open Government Maturity Model (OGMM) of Lee & Kwak (2011). It describes five levels of maturity of open government from the point of reference of increased public engagement (Figure 3). This makes this model relevant for this thesis, although it is not specifically focused on participation and includes multiple other aspects of open government.

**Figure 3** Levels of open government and corresponding participation/collaboration capabilities and processes (adaptation from OGMM)

OGMM is a classic stage model, and one not without criticism. It does, however, offer a basis for conceptualizing and analysing participation and collaboration activities in open government. In my research I use this model as a reflection ground when I systematize the findings from my studies and discuss the implications thereof for the open government field (section Discussion).

### 2.2 E-participation theory

As the definition of open government shows, opening up processes to stakeholder participation and collaboration is an essential component of open government reforms. Because open government is a complex phenomenon with vague boundaries it is important to examine how the phenomenon of participation has been addressed in related disciplines. As the
previous section described, there are few frameworks native to the open government domain that focus on participation and collaboration.

Therefore, I choose to build on the field of e-participation. E-participation as a research field has a longer research tradition than open government; it has been focused on the use of ICTs for political participation to enable citizens to connect with one another and with their governments (Tambouris, Macintosh, et al., 2007). Just like open government, e-participation has strived for an ideal that has been depicted in many ladder models of e-participation stages (Caddy & Vergez, 2001; Koussouris, Charalabidis, & Askounis, 2011; Macintosh & Whyte, 2008; Millard et al., 2009; Tambouris, Liotas, & Tarabanis, 2007). Most e-participation models adopt a certain “participation continuum” which consists of several (usually 3-5) levels of involvement ranging from more passive to more active. The criteria for distinguishing between the levels are not always uniform. For example, the three-stage OECD model (Caddy & Vergez, 2001) – Information, Consultation, Active Participation – is based on whether the communication is one- or two-way (limited or enhanced). Whereas, the three-stage Macintosh’ model (Macintosh, 2004) – E-enabling, E-engaging, E-empowering – is related to the affordances experienced by citizens as a result of participation. Tambouris et al (2007), using the standard model of public participation by International Association of Public Participation, extended these stages into five:

1. E-inform – one-way channel to provide important information to citizens;
2. E-consult – limited two-way channel to collect public feedback and alternatives;
3. E-involve – “working online with the public throughout a process to ensure public concerns are understood and taken into consideration” (ibid);
4. E-collaborate – more enhanced two-way channel to partner with citizens in the development of alternatives and identification of preferred solution;
5. E-empower – placement of final decision in the hands of the public.

In sum, the stages of e-participation signify the direction, intensity, or impact of communication between decision-makers and the public. The common feature is that stages in all models range from “worse” to “bet-
ter” participation types and define participation as a spectrum, determined by a shift from control by authorities to control by citizens (Cornwall, 2008). It is a continuum between “having a voice” and “having an influence” (ibid). The metaphor of empowerment is the red thread in understanding the most advanced levels of participation. As formulated in the Inform-Consult-Empower approach by Lee et al. (2011), empowerment is about facilitating bottom-up, citizen-initiated issues and ideas. Furthermore, these authors link this participation stage to the concept of “policy entrepreneur” and to the abilities of citizens to place problems and solutions on the decision-making table.

Study 1 offers a more comprehensive overview of the theoretical state-of-the-art of the e-participation field, as well as its current limitations and biased assumptions.

2.2.1 Genre theory
As discussed in the previous section, e-participation theory is inconsistent in terms of the criteria and approaches towards classifying and analysing different e-participation forms. This prompted me to combine e-participation concepts with a more neutral and straightforward analysis framework in the empirical studies. Hence, Studies 2 and 3 used genre theory (Yates & Orlikowski, 2002; Yates & Orlikowski, 1992) as a descriptive and analytical tool for investigating the ECI case.

Genre theory has been used in e-participation studies before (Dufrasne & Patriarche, 2011; Johannessen, 2010, 2012; Johannessen & Følstad, 2014; Sæbø, 2006; Sæbø, Flak, & Sein, 2011). A genre of participation is understood as a typified participatory action, with a certain form and content, enacted with a particular purpose. It is possible to apply genre theory at a high level of granularity to capture genres of a certain e-participation tool (like in the work of Johannessen); but genre theory can also be applied at a higher level of abstraction to analyse “genre systems”. Genre system is a coordinated, interconnected set of communicative actions that together accomplish an interaction (Yates & Orlikowski, 2002). Yates & Orlikowski proposed the taxonomy of genre characteristics comprising of the following elements: why, what, who/m, when, where, how. The “why” is arguably the most critical determinant of genres and genre systems as it denotes the socially recognized purpose of communication (ibid).

In my studies I applied the genre systems taxonomy to analyse (a) the processes involved in the ECI case (Study 2) and (b) the stakeholder per-
ceptions of them (Study 3). In both studies genre taxonomy served as a useful analysis tool; e.g. in Study 3 it helped capture the differences in the way the main stakeholders envisaged the ECI as a participation genre and explain how these differences contributed to the failed start of the initiative. This theory was a third-order theory in this thesis and was hence used in an instrumental manner.

### 2.3 Open innovation theory

The open government discourse has been implicitly linked with achieving open innovation in the public sector. As Beth Noveck writes, the term open government was “a shorthand for open innovation or the idea that working in a transparent, participatory, and collaborative fashion helps improve performance, inform decision-making, encourage entrepreneurship, and solve problems more effectively” (Noveck, 2011).

Open innovation (OI) by definition is the use of purposive inflows and outflows of knowledge to accelerate internal innovation and expand the markets for external use of innovation (Chesbrough, Vanhaverbeke, & West, 2006). Baldwin & Von Hippel (2011, p. 1400) call innovation open when “all information related to the innovation is a public good – non-rivalrous and nonexcludable”. As a basic view, there are three process archetypes of OI based on the flow of knowledge (Gassmann & Enkel, 2004): outside-in, inside-out, and coupled. A cyclical view of OI is the preferred paradigm today, compared to an older linear model.

The research field of open innovation is versatile and is comprised of a number of various streams (e.g. spatial, structural, cultural, institutional, tool, supplier perspectives and others) (Gassmann, Enkel, & Chesbrough, 2010). In my research, centred on participation opportunities and implementation thereof, I adhere to the user perspective of OI research. The user perspective is focused on the integration of users in the innovation process with the aim of understanding their requirements and utilizing their knowledge. In the forefront of this research stream is the work of Eric Von Hippel, who pioneered the user innovation (UI) research subdomain and advanced the discourse of “democratization of innovation” (von Hippel, 2005). The democratization of innovation means that users are increasingly able to innovate (ibid), thanks to the unprecedented connectivity, speed of information flows, and interactivity afforded by today’s online media. The process of innovation taking place in the social Internet becomes much faster, much cheaper, and much more community-oriented (Euchner, 2013). User innovation is thus a very relevant concept and can
be seen in such spheres as journalism, manufacturing, politics, education etc. This is especially applicable in the situations when the new market is yet small and uncertain.

The specifics of user innovation domain is that it is particularly focused on how to support users to become innovators; whereas the broader OI field pursues how organizations can maximize efficiency by involving users (Bogers & West, 2012). According to Bogers et al. (2010), the “user” in user innovation may refer to individuals or organizations who are intermediate users (developing innovations for others to consume) or consumer users (the end-users of innovations). Going one step further, users in UI tend to be the so-called “lead users”, hence the lead user approach in UI. Lead users are distinguished by two characteristics (Lüthje & Herstatt, 2004):

1. Capability – lead users face new needs significantly earlier than the majority of users;
2. Motivation – lead users profit strongly from innovations that provide a solution to those needs.

It is worth noting that open innovation theory has been used in the studies of the public sector to a marginal extent with a handful of notable exceptions (Bakici et al., 2013; Chan, 2013; Feller, Finnegan, & Nilsson, 2011; Fuglsang, 2008; Lassinantti, 2013; Lee et al., 2012; Mergel & Desouza, 2013). Studies applying the user innovation perspective in a public sector setting are even less common, most of the work originates from the same authors (Holgersson & Karlsson, 2012, 2014; Karlsson et al., 2012).

2.3.1 Model of driving factors of UI
The last study in this thesis (Study 5) aimed to establish the factors which determine the use of open data for innovation purposes. To this end I used the model of driving factors of user innovation proposed by Bin (2013). It is a relatively new model that has not be tested in other studies yet.

Overall, few open data studies (Davies, 2010; Juell-Skielse, Hjalmarssson, Johannesson, & Rudmark, 2014) have yet focused on the motivation to engage with open data and no comprehensive model was available in the open data domain. The strength of Bin’s model is that it combines different perspectives on the motivation of innovation behaviour, i.e. the cost-benefit perspective, the social motives perspective, and
the personal-characteristics perspective. Therefore, it is not prejudiced towards any certain type of users undertaking an innovation and can apply to individuals, communities, or firms.

The model consists of the following motivational variables (Bin, 2013):

1. Perceived Benefit – extent to which the subject believes that engaging in innovation will help him/her attain benefits from the process or the outcomes of that innovation;
2. Perceived Effort – ease of use, the time it takes to implement an innovation, the cost;
3. Social Influence – degree to which the subject perceives that important others believe that he/she should innovate and that it will enhance one’s image and status in the social system;
4. Personal Innovativeness – degree to which the subject is receptive to new ideas, is willing to test and accept new technologies, even those with drawbacks;
5. Experience – time during which the subject has used the product for which the new development was made.

Study 5 tested the model in an exploratory survey of open data users and proposed to extend it with one additional variable – Facilitating Conditions, i.e. degree to which the subject believes that an organizational and technical infrastructure exists to support the use of the system. Using this model enabled me to make propositions regarding the importance of different driving factors of open data use by business actors. In Study 5 I elaborate on the suggestion to include one more variable in the model and explain how the survey data supports this change.
3. Methods

This research is grounded on interpretive epistemology, i.e. on the assumption that reality can be accessed through social constructions like language, perceptions, or meanings (Myers & Avison, 1997). In interpretive research there are no predefined dependent or independent variables; rather the target is to comprehend the full complexity of a phenomenon as the situation evolves. Hence this research aimed to understand, from the interpretive point of reference, the larger context of the phenomenon and its influence on an information system (Walsham, 1993).

The main methodology used in this thesis work (Studies 2, 3, 4) was a case study, in which predominantly qualitative data collection and analysis methods were used. Study 5, as detailed in section 3.2.5, used the survey method to supplement and diversify the empirical basis of this research. Although this thesis is positioned to adhere to the interpretivist tradition; it is important to notice that in terms of case study methodology the interpretivist and positivist approaches have many points of agreement (Walsham, 1993, p. 74). In all empirical studies (Studies 3-5) I followed the qualitative research approach; even the survey in Study 5 was designed and analysed in the manner of qualitative research (sections 3.2.5 and 3.2.6 elaborate on that).

Overall, the case study method is a well-suited means for studying exceptional phenomena (such as “the next big thing” that the ECI and open data are considered to be). It is a multi-method approach combining documents, observations, interviews, and allowing for innovation and flexibility. Case studies are suited for ill-structured situations which may take different and perhaps unexpected turns and may be analysed from a number of perspectives. As a method in Information Systems field, case study has three main strengths (Benbasat, Goldstein, & Mead, 1987), as it enables the researcher:

1. To study information systems in a natural setting and learn about state of the art;
2. To understand the nature and complexity of the process taking place;
3. To gain valuable insights about new issues rapidly emerging in the field.
The conventional critique of this method points to the lack of controlability, deductability, repeatability, and generalizability in case study research (Lee, 1989). These issues of rigor may be addressed by using structured data collection and analysis procedures. Depending on a particular research objective, thoroughly executed case studies may bring the necessary depth (rather than breadth as large samples) into the discipline and support systematic production of exemplars which strengthens the field (Flyvbjerg, 2006). To compensate for the weaknesses of case study method a complementary survey method was applied in this thesis work to strengthen the overall research contribution. Table 2 below offers a snapshot of the methodological landscape of this research.

Table 2 Overview of research methods used in the studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Method</th>
<th>Data collection</th>
<th>Data analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>E-participation research: systematizing the field</td>
<td>Literature review</td>
<td>50 conceptual papers</td>
</tr>
<tr>
<td>2</td>
<td>Communication genre perspective on e-petitioning</td>
<td>Framework development</td>
<td>---</td>
</tr>
<tr>
<td>3</td>
<td>Context clues for the stall of the citizens' initiative</td>
<td>Case study</td>
<td>Documentation Observations 5 elite interviews</td>
</tr>
<tr>
<td>4</td>
<td>Organizational measures to facilitate user engagement</td>
<td>Literature review, Case study</td>
<td>10 papers Documentation 8 semi-structured interviews in 4 organizations</td>
</tr>
<tr>
<td>5</td>
<td>Driving factors of service innovation using open data</td>
<td>Explorative survey</td>
<td>Responses from 25 businesses in 2 countries</td>
</tr>
</tbody>
</table>

3.1 Research process

The research process encompasses three and a half years, from June 2011 until December 2014. The research was carried out under the auspices of the research school “Technology-mediated knowledge processes” jointly operated by Örebro University and Dalarna University. It is an interdisciplinary research community focusing on the impact of new technologies in
various dimensions of societal life – education, democracy and governance, organizations and IT.

As Figure 4 below shows, my introduction to the field started with a literature study of e-participation in 2011. This first paper aimed to map the themes, theories, and methods used in e-participation research; a pragmatic objective was to identify the niche for future studies. The study resulted in a comprehensive map of e-participation topics, one of which – government-initiated applications – was chosen as the main problem domain for further investigation. The first case study was selected, the European Citizens’ Initiative – an e-participation project aiming to involve citizens in EU policy-making. In early 2012 a conceptual study followed which developed a theoretical framework for the ECI as ideal scenario and laid down the basis for the empirical case work. The empirical study of the ECI, focusing on one of the stages in the framework from the preceding conceptual study (signature collection), was carried out later in 2012. It resulted in an analysis describing the challenges to participation intrinsic to the design of that e-participation procedure. One of the insights from this study was that, regardless the demand from a community of civic hackers and activists, the EU did not pursue the collaborative effort to rebuild the problematic signature collection tool together with the users. In light of this, the open data movement – advocating open collaboration to improve services – presented a chance for an interesting comparison. In 2013 a comparative case study followed which focused on the challenges and measures to enable participation in the open data process. The next step was to narrow down to a specific user group of open data and investigate the adoption thereof by businesses. That last study, an exploratory survey, was completed in late 2014 and resulted in a set of propositions regarding the motivation of businesses to use open data.
Figure 4 Summary of the research process
3.2 Methods for empirical studies

The empirical base of this thesis is comprised of two case studies (Study 3 and 4) and a survey (Study 5). As Figure 4 showed, the two case studies conducted were an in-depth single case study of the European Citizens’ Initiative (ECI) and a multiple comparative case study of open government data initiatives in Sweden and the Netherlands. A single case study is appropriate if the objective of the research is to explore a previously un-researched subject (Yin, 2009), such as the ECI project. Multiple case study designs, on the other hand, allow for cross-case comparison and extension of theory (Benbasat et al., 1987). There are no fully equivalent projects to the ECI, as it is the first trans-national initiative for agenda-setting; on the other hand, open data initiatives have emerged in most Western countries now calling for comparison.

The unit of analysis in my research as a whole is a specific project (Benbasat et al., 1987, p. 372) - an open government initiative. Hence the findings of my studies are expected to be relevant for other similar projects. More specifically, in the ECI case the unit of analysis is a (e-enabled) citizens’ initiative procedure: it consists of a technical infrastructure, rules and regulations, organizational processes, stakeholders and relationships etc. In the open data studies the unit of analysis is an open data initiative of a government organization: it consists of a technical infrastructure, processes for data publication, network of stakeholders, policies etc. The fifth study, the survey of businesses, adopts an extended view, as the unit of analysis therein is an organization (a firm or entrepreneur) participating in an open government initiative (by using open data). That is why the findings of this last study are expected to offer lessons learnt for other open government projects, as well as other businesses attempting to use open data.

The common methodological feature of the case studies (Studies 3 and 4) was using a combination of data sources among which interviews took a prominent place. Interview data was important for both studies of the ECI and open data, although Study 4 relied on it to a greater extent. The format and execution of interviews differed, as they were tailored to the specific research situation and the case context on the ground. Thus the interviews in the ECI case were more ad-hoc, informal, with minimal structure; whereas the interviews in open data cases were more formal, well-structured, and without any follow-up. In both studies interview guides were prepared (included in subsequent sections) which contained the critical points of discussion that I was interested in in the framework
of these studies. The interview guide in the ECI case was informed by prior desk research of the developments and current issues of debate around the ECI initiative. The interview guide for the studies of open data was based on a literature study of the recommendations and best practices suggested by researchers and practitioners. For both case studies I used other sources, besides interviews, to collect data: in the ECI case observations during events and document studies played an important role; in open data cases document studies were an essential element as well.

When planning and preparing my data collection strategies in all studies I was aware that they must fulfil the requirements for external reliability. This means that if another researcher were to use the same methodology, they would obtain essentially the same data observing the same environment (Gagnon, 2010). To provide for that the literature suggests a number of steps: establish the researcher’s position, select informants judiciously, describe data collection situations and social conditions, clearly define the study’s premises, and describe the data collection strategy (ibid, p.29). In the following sections, which describe data collection in detail per study, I will describe how these steps were implemented in each particular study. Data analysis in qualitative research, on the other hand, must demonstrate internal reliability of the research; in other words, that other researchers would arrive at essentially the same findings if they were to analyse and interpret the data produced by the study (Gagnon, 2010). To increase internal reliability the following measures can be taken during data analysis: using concrete descriptors, safeguarding raw data, using multiple researchers, asking respondents to confirm observations and evidence, having the analysis reviewed by peers (ibid, p.29). Some of these measures only apply to case studies (Studies 3 and 4), e.g. in both these studies I used informants’ quotes and asked them to validate interview transcripts. All my studies have been reviewed by one or two other researchers (supervisors); involving other researchers in an active role in the studies was not possible at the time. As concerns raw data, I keep the data gathered for the studies, safely and discreetly, in case it needs to be made accessible to other researchers.

Subsequent sections provide a more nuanced description of the methods used in Studies 3, 4 and 5.

3.2.1 Data collection in case 1
To study the European Citizens’ Initiative a single case study method was chosen. The choice of this case is based on the fact that it is the first trans-
national agenda-setting instrument in the world, which offers new opportunities for engaging citizens of all member states in EU affairs. It is explicitly linked to the formal policy-making process at EU level, and is specifically dedicated to increasing citizen participation at an early stage, during agenda-setting. So far the majority of e-participation initiatives in EU countries have targeted policy analysis and formulation stages, fewer have been dedicated to agenda-setting (Tambouris et al., 2012). Modern digital media is an essential resource in the ECI process, as they offer enhanced opportunities for information exchange and connectivity between users.

The empirical case work for this study was carried out from March until August 2012 in Brussels, Belgium, during my placement as a trainee in the Committee on Petitions of the European Parliament. It was timed to the moment when the Citizens’ Initiative was officially launched (April 1, 2012) and to the period when the internal operations in addressing citizens’ initiatives were negotiated in the European Parliament (spring/summer 2012). This provided for continued access to some of the key participants within EU institutions, thus allowing for interviews and observations, to say nothing of the rich documentation resources concerning the ECI.

As I was a temporary member of the organization for that time period, this put me in the position of an “involved researcher” (Walsham, 1995). The decision to adopt the involved researcher role was to a certain extent determined by circumstances: the trainee position was a valuable opportunity to participate in daily activities of the organization and get an insider perspective on the internal workings of a European institution. I am convinced that working inside the European Parliament for six months has elevated my understanding of the ECI and led to insights otherwise unattainable for outside observers. Consequently I was exposed to opinions and perceptions of civil servants and was able to provide an account thereof in Study 3. Being closely associated with the studied organization bears the risk of subjective reporting of results. I therefore was alert throughout the research process to ensure precision, careful observation, and unobtrusiveness in the gathering of information (Woodside, 2010). Following other literature sources describing safeguards against bias (Gagnon, 2010), during data collection it is recommended to establish a neutral relationship with the informants and collect data from multiple sources to maintain a balanced view. I have adhered to this recommendation. The approach to data collection was quite unstructured and inductive in nature so as to avoid any preconceived notions or hypotheses. Dif-
different kinds of data were gathered to ensure cross-validation – textual, verbal, observations. Apart from the official sources a variety of additional resources were constantly examined (such as expert assessments, NGO reports, statements of ECI organizers, academic papers) to ensure a neutral perspective in the research process. When taking field notes I was very descriptive in order to represent the informants using their own terms and quotes. Longer interviews were recorded and transcribed. The key informants were selected carefully to make the most out of their informed perspective; nonetheless caution was taken to realize the limitations of their views.

As a general rule, conducting a case study normally involves working with different sources of knowledge, which in the present situation included written evidence, observation, and interviews. By written evidence is meant case-specific literature including academic articles, official reports, policy papers, conference proceedings, press-releases, and also unpublished records and documents such as internal correspondence and minutes from meetings. The written evidence was used primarily for factual description of the case (norms, procedure, history etc.), but also to validate some of the insights from the interviews.

In the process of observation within a case study the researcher, put simply, watches what the subjects do and say, and sometimes asks them clarifying questions. During the fieldwork, due to practical circumstances (the researcher being a member of the team), unstructured participant observation was conducted. This occurred during the regular unit meetings, routine activities, team-work exercises, consultations with other units, and other events which were all themed to the forthcoming ECI. The specificity of participant observation, as opposed to detached, is that it is mainly descriptive, puts emphasis on interpretation, is flexible on information collection, and occurs informally (Gillham, 2010, p. 52). It offers an opportunity to perceive the events from the viewpoint of someone inside the case study rather than external to it (Yin, 2003). The observations were written down (field notes) and had a broad purpose of capturing characteristic features of organizational behaviour such as: how the institution makes sense of its environment, frames problems and opportunities, plans and performs actions, evaluates outcomes etc. (Woodside, 2010). I also attended four ECI conferences organized by different stakeholders (Table 3) to tune in to the debate in the civil society about the ECI or gain a more informed view of the institutional discourse in this regard.
The observations were used to supplement the interviews, some of which were rather casual discussions. My task when conducting an interview was two-fold: to follow my own line of inquiry and to ask conversational questions (friendly, non-threatening how/why questions) serving the research needs. A research interview is a quite broad term and has a whole continuum of formats (ranging from unstructured to more structured ones) (Gillham, 2010, p. 60). Due to the participant status of the researcher, this study favoured the less structured forms of obtaining verbal data, namely: listening to other people’s conversations, using natural conversation to ask research questions, and open-ended interviews with a few key questions (elite interviewing). The main subjects of the interviews, in their different formats, were EU civil servants working closely with the ECI, often holding mid- or senior-rank positions. The open-ended interviews were particularly targeted at the informants in the position of authority, who were capable of giving the answers with insight and a comprehensive grasp. While natural conversations were written down as verbatim as possible in the field notes, the open-ended “elite” interviews (five in total) were fully recorded and transcribed. The interview guide is provided in Table 4 below; it was used as an aid to navigate between such topics as

### Table 3 Conferences observed in the ECI case

<table>
<thead>
<tr>
<th>ECI Conference</th>
<th>Organizer</th>
<th>Date</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Warming up for the Citizens’ Initiative: A Conference hosted by Commission Vice-President Maros Sefcovic</strong></td>
<td>European Commission (EC)</td>
<td>26.01.2012</td>
<td>EC Brussels</td>
</tr>
<tr>
<td><strong>European Citizens’ Initiatives: on the starting line</strong></td>
<td>European Citizens Action Service Democracy International</td>
<td>20.03.2012</td>
<td>Representation of Saxony-Anhalt to the EU Brussels</td>
</tr>
<tr>
<td><strong>European Citizens’ Initiative Day 2012: time to act! Perspectives from civil society and local/regional authorities</strong></td>
<td>European Economic and Social Committee (EESC) Committee of the Regions</td>
<td>30.03.2012</td>
<td>EESC Brussels</td>
</tr>
<tr>
<td><strong>Assessment of the European Citizens’ Initiatives in Practice: Registration, Certification, Online Collection, Transparency</strong></td>
<td>Austrian Institute for European Law and Policy (ECI Link Project partner)</td>
<td>05.10.2012</td>
<td>Federal Ministry of the Interior Vienna</td>
</tr>
</tbody>
</table>
the context and background of the ECI, the signature collection system and its user-friendliness, the campaign process and role of other media, the expected outcomes and attitudes in the institutions. Each “elite” interview lasted between one and two hours and was conducted in person. After the interview the interviewees were sent the transcript of the interview for validation.

Table 4 Interview guide for Study 3

<table>
<thead>
<tr>
<th>I. E-participation context</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How much progress do you think the EU has made in creating opportunities for e-participation to date?</td>
</tr>
<tr>
<td>2</td>
<td>How can you characterize the political climate in the EU institutions when it comes to digital interactions with citizens? Have such interactions led to any transformations?</td>
</tr>
<tr>
<td>3</td>
<td>In this context what is the place of the ECI? How digital do you perceive it to be?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>II. General framework of ECI</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>In your view how citizen-friendly are the rules for the ECI as outlined in the Regulation? What were the driving forces behind making these decisions?</td>
</tr>
<tr>
<td>5</td>
<td>What are your expectations as to the volume of participation in the ECI, online and offline? What would be the impact of the ECI on EU politics? What is going to happen when first successful ECIs propose their initiatives to the EU institutions?</td>
</tr>
<tr>
<td>6</td>
<td>Would you call the ECI in its current form a cost-effective way to influence EU politics that is accessible to ordinary citizens?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>III. Technical rules for ECI</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>What is your opinion of the digital infrastructure put in place for the ECI (register, open source software)? What were the reasons in your opinion that no centralized portal was provided?</td>
</tr>
<tr>
<td>8</td>
<td>What is your evaluation of the formal rules for signature collection online? Do you think the focus on identity verification and data protection has an impact on the usability of the ECI? Was the input from the civil society considered in any way when developing the technical specifications for online signature collection?</td>
</tr>
<tr>
<td>9</td>
<td>In your view what is the role social media can and will play in the ECI? Is the ECI exploiting the potential of the Internet to the fullest?</td>
</tr>
<tr>
<td>10</td>
<td>Is it possible that offline and online initiatives will yield different attitudes among policy-makers?</td>
</tr>
<tr>
<td>11</td>
<td>How was the open source software developed to make sure it meets the needs of citizen users?</td>
</tr>
</tbody>
</table>

3.2.2 Data analysis in case 1

The data analysis strategy chosen for Study 3 was interpretive to elicit interpretations in an iterative way. The latter means that for the most part the data collection and analysis were conducted in parallel. As gathered
information units were analysed, they yielded new leads for subsequent data collection. For example, the interviews were held at the last stage; this means the design of the interview guide was informed by the insights (themes, metaphors) that emerged from prior observations using field notes and document studies.

The body of data that was analysed consisted of interview transcripts, field notes, and key document sources. The analysis was done in iterative steps, alternating between the data from the documents, observations, and the interviews. The insights from the transcripts were compared to the metaphors and themes emerging from the field notes. The documents that I had access to on the subject of the ECI were abundant; hence I had to select only those directly relating to the issue of ECI design and implementation. The analysis of field notes taken at meetings and events was done by reading through them and identifying metaphors and themes. For example, one such vivid metaphor which I picked up attending a conference and recorded in my field notes was that ECI, in its regulatory and technical design, is a “casino democracy” (used by the speaker Robert Müller-Török in his speech). This metaphor captures the frustration of the civil society about the way the ECI works – high stakes but no guarantee of winning.

The analysis of the interviews was conducted by reading the interview transcripts and identifying and coding passages in the texts that relate to the same category. This was done manually as the volume of the transcripts was manageable. To increase the internal reliability of the study, I used concrete descriptors (Gagnon, 2010, p. 29) when coding text into themes and sub-themes, often using the words mentioned by informants themselves. The analysis was inductive for the most part. However the interview guide already had several built-in themes in it which were used as the starting points for coding (see Table 4): e.g. EU e-democracy context, ECI rules and regulations, ECI user-friendliness, ECI expectations, role of new media. For example, the following is an excerpt of the interview in which the respondent was asked why the compulsory system certification had been imposed on ECI organizers wishing to collect signatures online:

“Because of the sensitivity of the data, you need to have really stringent data protection rules. [...] In fact it’s crucial for the organizers because for somebody who has to provide all this data, they are really going to do it if they are sure that this data is not going to be stolen or sold tomorrow. [...]”
The organizer being in the driving seat it’s important that the organizer is also liable for protecting citizens’ data” (High-level EU civil servant, personal communication, May 25, 2012)

I coded this passage under the theme “data protection”, within this theme I identified one sub-theme “responsibility” and two metaphors – “organizer in the driving seat” and “stringent data protection yields trust of signatories”. My interpretation of this passage therefore was that, according to the informant, it is the responsibility of ECI organizers to protect the data of EU citizens signing their initiatives, because it is a citizen-driven instrument of participation and being liable for the data will enhance their campaigns.

The following excerpt is from an interview where the respondent was asked a clarifying question why no central online collection system was provided by the EC to ECI organizers:

“If the Commission were to have a central online collection system, […] it would be a little bit odd to have the organizer responsible for collecting signatures on paper and then the Commission responsible for collecting online signatures. […] Generally, the Commission thought it shouldn’t be responsible for data, because it could also be blamed by the organizer” (Refers to: allegations of falsification and interference with data) (High-level EU civil servant, personal communication, May 25, 2012)

I coded this passage under the theme “central system”. Within this theme I identified two sub-themes “online-offline systems” and “responsibility” and the metaphor “avoiding allegations of fraud”. My interpretation of this passage was that the decision not to have a central system for online signature collection was influenced by unclear division of roles between EU authorities and ECI organizers. According to the informant, the organization was trying to avoid getting involved in order to retain impartiality.

The above is a glimpse of the narrative which I developed in the paper using interview excerpts to illustrate my interpretations and the line of argument. To compare and highlight the conflict of expectations and objectives around the ECI I presented my findings using the categories from genre theory of communication (used as a “theory for analysing” (Gregor, 2006)).
3.2.3 Data collection in case 2

The investigation of open data followed a multiple comparative case study approach. The data collection of empirical material for this study was organized as a multiple case study, which included (1) a local government organization and (2) a national statistical agency in Sweden and in the Netherlands – four organizations in total. These two types of government organizations were selected because the local government has the strongest link to citizens’ daily lives and thus offers great potential for citizen participation, while the national statistics office is a data-driven organization with a mission to promote the use of statistics. This choice also conforms to the principles of theoretical sampling (Eisenhardt, 1989): the sample represents organizations with different mandates (national institution vs. local government) in two different contextual settings (Sweden and the Netherlands); and these organizations are likely to replicate the emergent theory of open data engagement due to the nature of their relationship with the public. While there is one national statistical agency in a country, the municipalities in Sweden and the Netherlands were selected to be comparable in size. Altogether, the following organizations were investigated in this comparative case study: Statistics Sweden (SCB) and Örebro municipality in Sweden, and Statistics Netherlands (CBS) and Groningen municipality in the Netherlands.

The cases were conducted using as a backdrop the organizational measures found in the literature review preceding the empirical work. The data sources in the case studies included written evidence and interviews. The written evidence included project documentation, press releases, official reports, academic articles, internal documentation provided by the participants, posts in social media etc. The written evidence was used to build an understanding of the context of the open data initiative and to ensure the reliability of the verbal data from the interviews. In addition, I attended a number of events themed to open data; this provided me with the understanding of the larger context and allowed to put my findings into perspective.
### Table 5 Summary of events attended within open data case work

<table>
<thead>
<tr>
<th>Open data event</th>
<th>Role</th>
<th>Date</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenniscentrum Open Data Kick-off of the knowledge centre on open data</td>
<td>Observer</td>
<td>23.01.2014</td>
<td>TU Delft</td>
</tr>
<tr>
<td>Workshop on Open Data Publication and Use – Lessons Learnt</td>
<td>Moderator</td>
<td>23.04.2014</td>
<td>TU Delft</td>
</tr>
<tr>
<td>Workshop on Critical Success Factors for Open Data</td>
<td>Presenter</td>
<td>02.09.2014</td>
<td>EGOV 2014 Conference Trinity College Dublin</td>
</tr>
<tr>
<td>ICT &amp; Industry Workshop Challenge “Statistical open data and risk of disclosure of personal information”</td>
<td>Participant</td>
<td>13-15.10.2014</td>
<td>Lorenz Centre Leiden</td>
</tr>
</tbody>
</table>

As mentioned, the interviews were the primary source of data in this study. I opted for semi-structured interviews to ensure consistency across the four cases but still keep an element of openness. The interviews, eight in total, were carried out from October 2013 until February 2014 in Sweden and the Netherlands. Two interviewees per case were selected: one in the lead and/or project management role and one in supportive and/or technical role. Hence, in the municipalities I interviewed the e-strategist/e-advisor and an external partner in the open data project (from Örebro University and Groningen province, respectively). In the statistics agencies I interviewed the open data project manager/senior advisor and a data specialist. In this study my role was that of an external observer which is appropriate when one aims to compare several cases.

The interview consisted of 26 questions which took approximately an hour to answer. The questions were structured by the categories which emerged from the literature review, i.e. the data artefact, communication practices, provision of support, and sustainability of the process. In addition, I asked about overall background information regarding each open data initiative (the interview guide is presented in Table 6). Interviews were transcribed, unless the informants chose to respond in writing (which was an option offered in case informants were not available for a meeting). The responses that were received in writing (from one organization) were quite detailed and provided equally useful insights compared to speech. To validate the answers I provided transcripts of interviews to the
respondents and followed-up with several of them with clarifying questions; one respondent edited the transcript eventually.

**Table 6 Interview guide for Study 4**

<table>
<thead>
<tr>
<th>I. Background</th>
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<tbody>
<tr>
<td>1. What was the main goal of implementing an open data initiative in your organization? What benefits and outcomes are more important for you to see?</td>
</tr>
<tr>
<td>2. What was your experience like with implementing the EU PSI and the national law on open data (timeframe, planning, ways it was done)?</td>
</tr>
<tr>
<td>3. What major challenges did you encounter? How did you handle the financial burden and the shortage of resources?</td>
</tr>
<tr>
<td>4. What lessons did you learn from the previous pilots (short history of open data)?</td>
</tr>
<tr>
<td>5. Have you been following any guidance programs or materials to implement open data?</td>
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<tr>
<td>6. Which success stories can you share, have you seen any concrete examples of new useful services created?</td>
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<tr>
<td>7. Do you think data protection and privacy concerns have influenced potential data users in some way?</td>
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<tr>
<th>II. Data artefact</th>
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<tbody>
<tr>
<td>8. How was your choice of infrastructure (technical platform) for the open datasets made? What motivated this decision?</td>
</tr>
<tr>
<td>9. Which datasets and how many have you made available so far? What are your plans and development strategy for the future?</td>
</tr>
<tr>
<td>10. Who do you think will be the main users of your data, how does it depend on the type of data?</td>
</tr>
<tr>
<td>11. What steps are you going to take to ensure the quality of data, metadata, and technical documentation?</td>
</tr>
<tr>
<td>12. How do you decide on which data to release first and which is more in demand?</td>
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<tr>
<th>III. Communications</th>
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<tr>
<td>13. Could you elaborate on the communications strategy which you use to connect to potential users? How do you engage with different stakeholders around open data: businesses, universities, news media, civic hackers etc.?</td>
</tr>
<tr>
<td>14. How do you spread information about the updates and events around open data (Facebook, Twitter, website, targeted e-mails)?</td>
</tr>
<tr>
<td>15. What are your experiences with processing feedback from the website, including error reporting (what is the response time)? How have these user comments helped improve the system?</td>
</tr>
<tr>
<td>16. Which target groups internally are important in realising open data in your organization? What measures are taken to raise awareness among your employees about open data and how successful are they?</td>
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<th>IV. Support</th>
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<tr>
<td>17. What are your plans for holding competitions or other events? How would you evaluate the results of previous events (if applicable), how have they met your expectations?</td>
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<tr>
<td>18. What do you plan to achieve in hackathons in the future?</td>
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<td>19</td>
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<tr>
<td><strong>V. Sustainability</strong></td>
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<td>26</td>
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### 3.2.4 Data analysis in case 2

The data admitted to analysis in this study consisted of interviews, supplemented with relevant organizational documentation. Such documentation for instance included official policy documents, project plans, communication strategy documents, social media posts, press releases and brochures etc. The documents were analysed using content analysis and the findings thereof were used to describe the specific context of each of the four cases. Sometimes the informants referred to some of the documents themselves, which then were used as a source of more detailed information on an issue.

In preparation for the analysis, the interviews were coded to elicit important issues, topics, and metaphors mentioned by the interviewees. The analysis was then carried out in two phases (Eisenhardt, 1989): within-case analysis and cross-case search for patterns.

The first phase involved writing detailed descriptions for each case site to embrace all the volume of evidence. Once all data was coded, my objective was to build a picture for each case of where a particular organization stands in terms of open data. In this first phase I focused on the background, open data policies, prior experience, known successes and failures, current state-of-the-art, challenges and problems experienced on the way. Taking notes was a useful step that allowed me to develop four distinct “stories” of the cases and prepare the material for comparison.
The second phase involved several steps in itself: first, selecting categories (the categories prompted by the literature study) and looking at within-group similarities and intergroup differences; second, selecting pairs of cases and listing the similarities and differences; and third, dividing the data by data source. Following the first step, I compared the cases by selected categories, namely by the four categories that were identified in the literature review and laid the basis for the interview guide (Data Artefact, Communication, Support, Sustainability). This means that looking at the “stories” I compiled in the previous phase, I compared which measures the four organizations had undertaken or considered (or not) in the four categories. At this stage, referring once again to the interview transcripts, I was able to understand why certain measures were considered or not. For example, the following is the response of one of the informants to the question about supporting open data users (category Support):

“The problem is that there’s too much expectation. There are municipalities who give Excel sheets with where people park their cars and they expect there will be nice apps. But it takes time and the maintenance of the data should be very good, that’s the problem” (Project manager for open data, Statistics Netherlands, personal communication)

In this passage I identified such themes as “expectations” and “conditions for innovation” and the metaphor “it takes time to innovate with open data”. My interpretation of this excerpt was that, according to this informant, the expectations around open data are flawed – fast results and predefined outcomes are expected, while a precondition for a high quality service based on open data is good data maintenance. Therefore, this particular organization puts much attention on continuity of data supply and maintenance.

The next step, after comparing cases by categories, was finding similarities and differences between pairs of cases: between cases from Sweden compared to cases from the Netherlands, and between municipalities compared to statistics agencies. The objective there was to see if and how user engagement strategies of the organizations differed based on the type of organization and based on the country.

The final step was to compare the cases by the source of evidence – interviews with documents. The purpose behind that was to find out whether there were any discrepancies or challenges of implementing policy decisions in practice.
3.2.5 Data collection in survey

The data collection took place in the period April – July 2014. The invitation to fill out a survey was sent by e-mail to a sample of 50 businesses. The selection criteria were defined as follows – business actors, who used open government data to develop a new or improved product, service, or process (or attempted to do so) for end-users, other businesses, or governmental organizations. The survey consisted of four parts and 34 questions in total: (1) the demographic questions, (2) questions concerning a particular open data innovation the participant developed; (3) questions asking about the different factors which enabled the participant to succeed (or not); (4) and finally, open-ended questions soliciting recommendations to improve the open data process. The survey sample can be found in the Annex. The survey was administered online using Google Forms and took about 20 min to fill in.

To select participants for this survey I used a combination of non-random sampling techniques (Gideon, 2012): purposive sampling, convenience sampling, and referral sampling (snowballing). These three sampling techniques were applied as subsequent stages: first, businesses fulfilling the selection criteria were identified through desk research and participation in events; second, among the identified businesses those were selected who were available and willing to participate in the survey; third, the businesses who participated in the survey were asked to recommend other businesses in their network fulfilling the criteria. Whereas the two latter steps are quite straightforward, the first one (purposive sampling) required a number of measures: approaching the participants of open data conferences, contacting the participants of recent hack events, inquiring with data providers and experts, posting in social networks and communities etc.

When using survey methodology a discussion is expected about how representative and precise the sample assembled by the researcher is. The rule is that the extent to which the sample represents the population depends on the sampling frame (population), sample size, and used sampling techniques (Fowler, 2013). The question of representativeness however is mainly relevant for surveys which aim to generalize from the sample. The purpose of my survey was not to generate statistics about a population but to describe a set of entities in a more general way [ibid]. It is hence the kind of study that Fowler (2013, p. 14) describes as “a pilot study to measure the range of ideas or opinions that people have or the way that variables seem to hang together”. One reason for designing the survey as
an exploratory pilot was that the sampling frame, or the population of open data users, was not known. The open data movement in Sweden and the Netherlands (selected for the survey) was quite recent, and at the time of writing there was no systematic register of companies or other users of open data there (as there was e.g. in the US thanks to Open Data 500 project). This is the case because (a) often uses of open data as a source of business innovation are not reported back to the data provider and thus go unnoticed, (b) businesses are not always aware of their usage of open data (e.g. in process innovation). In a situation when there is no adequate list of entities in a population and no way to get at the population directly, Fowler’s handbook (2013) advises to use multistage sampling. Following that I combined different sampling techniques as explained in the above.

Of the 50 businesses invited to participate via e-mail (and of all those who saw the postings in social networks and groups), 28 businesses filled out the survey. Three responses were further disqualified since the respondents represented a public or semi-public institution and not a business actor (they were not part of the initial 50 invitees but responded to the open call on social networks). The response rate was 50% considering the e-mail invitations sent; it is not known how many people saw the online postings about the survey and decided to participate or not. The eventual sample size (25) was small, but it was considered adequate for the purpose of this particular study. As Denscombe (2007) explains, if surveys are conducted from the standpoint of qualitative research, sample size is typically small; this is due to the fact that in that case the sampling approach would be based on sequential discovery of instances to be studied and would try to emphasize special instances (ibid, p. 30). Nonetheless, I have taken the steps to evaluate and improve the response rate (Denscombe, 2007). Namely, reminders were sent to the selected businesses to bring the invitation to participate in the survey to their attention. The non-respondents do not seem to be systematically different – at least not in any obvious way – from the respondents: the non-respondents were also start-ups or entrepreneurs who have created one or several services based on open data. The final measure to have an appropriate sample size is to make sure it is in line with comparable studies (ibid). One study that is most closely related to mine was the study of third party developer motivation to participate in open data hacks by Juell-Skielse et.al (2014). In that study the authors surveyed 39 individuals out of 76 invited (response rate 51%); however note should be taken that they focused on a well-defined population of contest participants and executed their survey in the
framework of an open data hackathon. Given that my survey was not aligned with any event or any specific cluster of open data users, the level of response I obtained can be considered reasonable. Besides, the survey was an in-depth, rather lengthy task which not all invited participants could afford the time to commit to. In the result the participants of the study were businesses and entrepreneurs in Sweden (12 participants) and the Netherlands (13 participants) who used open government data in an innovative way. The decision to include participants from two countries was taken to enable comparison in terms of characteristics of early adopters of open data. Sweden and the Netherlands have been developing their open data initiatives at a similar pace so far (both ranked quite high by different open data indices).

3.2.6 Data analysis in survey
To analyse the survey data a combination of methods was used depending on the type of data – descriptive statistics for quantitative data from closed-end questions and coding for qualitative data from the open-ended questions. The last section of the survey (A4) contained four open-ended questions which asked the respondents about the challenges they encountered in their innovation process, the technical improvements to open data publication they can recommend, the organizational measures that can help data providers support them better, and their assessment of whether they have met their objectives using open data. These open-ended questions were coded, whereas the remaining questions were analysed using descriptive statistics.

Using descriptive statistics enables “to portray the cases in a collection of data, to depict patterns in the data, to explore the distributions or shapes of the data” (Vogt, Gardner, Haeffele, & Vogt, 2014, p. 207). In the survey the most common scale I used was a five-point (Likert) scale. Section A3 in the survey contained the questions designed to measure the influence of the different enablers of innovation according to the theoretical model selected for this study. To analyse the responses I used such statistical measures as mean, median, standard deviation, minimum, and maximum. Given the exploratory nature of this study and the sample size, it was important to acknowledge how strong (or not) the agreement was among respondents. Having established the values for all major variables from the survey data, I explored whether any correlations could be found between the variables (e.g. between amount of experience with open data and the perceived effort to use open data). Since respondents from two
countries took part in the survey, I compared the scores assigned to the major variables per country. Based on the findings from this analysis, I could put forth four propositions which describe the emerging patterns related to open data innovation which I could infer from the gathered data.

As mentioned earlier, at the end of the survey I included four open-ended questions designed to shed more light on the rest of the responses. These responses were coded and assigned themes, sub-themes, and metaphors. For example, the following excerpt shows how a respondent replied to the question regarding challenges to open data innovation:

“Many data sources are “boring” and most of the open data I have seen so far is very static in nature. A lot of the open data that is published so far, to me, appear to be impossible to combine with other sources of data and have no value in its own” (Anonymized respondent, 4 April 2014)

In this passage I identified the metaphors “boring data” and “value of data”. This quote, as I interpret it, conveys the importance of the data being interesting, constantly updated, and combinable with other sources as one of the factors driving businesses to use it in innovative ways. Such issue was not covered by the original model I used in this study; based on the survey responses and quotes from such open-ended questions I was able to make an additional proposition focused on the facilitating conditions for open data innovation.

### 3.3 Validity issues

There is a convention in the Information Systems discipline to conduct interpretive research according to the seven principles first summoned by Klein & Myers (1999). These principles can be applied selectively based on researcher’s judgment; not all of them may be equally useful in any particular research project. I provide my reflection of this matter in the below.

According to the study by Cardoso & Ramos (2012), two of Klein & Myers’ principles have been most explicitly developed and widely applied in contemporary IS research: the principle of the hermeneutic circle and the principle of suspicion. As these are believed to be the principles of fundamental nature and overarching importance (ibid, p.86), I had to make sure my research fulfils them in a fair manner. The first principle
implies that it is required to iterate between considering interdependent meanings of parts and the whole that they form (Klein & Myers, 1999). It is then appropriate to explain what makes up parts and the whole in a research project (O'hEocha, Wang, & Conboy, 2012): in both studies of the ECI and studies of open data there were individual stakeholders (parts) and the overall open government initiative (whole) in view. To iterate between individual perspectives and the overall project I used multiple information sources for data collection (ibid) (e.g. interviews conveyed the meanings of parts, while document studies conveyed the idea about the whole). On a higher level, different studies in my research zoomed in on various parts of open government as a whole. My own personal approach to applying this fundamental principle consisted in keeping “the big picture” in the back of my head throughout the research process and asking myself questions about how a certain piece of data fits or not in the puzzle. The second fundamental Klein & Myers’ principle – that of suspicion – means being sensitive to possible biases and systemic distortions in the narratives collected from the participants. This principle is closely linked to two others – the principle of (sensitivity to) multiple interpretations among participants and the principle of (the influence of) interaction between researcher and participants on the data. These principles essentially are centred on the idea of internal validity, i.e. that the researcher “has in fact observed and measured the things she set out to observe and measure, and that the descriptions and explanations of the phenomenon of interest are true representations of the observed reality” (Gagnon, 2010, p. 30). In the framework of interpretivism one should perhaps avoid using the terms “true” or “representation of reality”; nonetheless the core meaning of this concept is clear. In order to adhere to the principle of suspicion and to increase the internal validity of my research I took a number of measures recommended in the literature (ibid). For example, I was conscious of and explicit about my role as a researcher and the possible “side effects” thereof. To mitigate the potential bias in the informants’ data I was never completely trusting and confined to the interviews alone and aimed to verify the interpretations I was getting with other sources. In my studies I was clear about how the informants were selected and based on which criteria. When possible, I took the opportunity to doubt myself and to look for alternative explanations to the phenomena I was observing in my research. For instance, in Study 5 I explained the lack of evidence that economic benefits drive open data adoption by companies using several possible explanations: the early stage of open data development, the char-
acteristics of the sample (start-ups and SMEs can be more likely to experiment without firm financial objectives), limitations of the survey design (modest sample), possible differences between countries.

Other principles of Klein & Myers concern the relationship between interpretations from data and theory, as e.g. in the principles of abstraction and generalization and the principle of dialogic reasoning. In other words, the researcher must relate emerging interpretations to theoretical concepts and in doing so be aware when contradictions between them arise. In this respect the majority of my studies had inductive bottom-up research approach, and only Study 5 brought in a concrete theory upfront to guide data collection and analysis. Furthermore, in this study I was critical of the model I used and argued for an additional theoretical construct to be included in it. In Study 3, to give another example, I discussed the limits of e-democracy theory in explaining the findings I was arriving at from the case study data.

3.4 Ethical considerations

In conducting this research due attention was paid to the recommended practices as regards ethics in research. The Swedish Research Council (Vetenskapsrådet) sets a number of ethical requirements concerning information, consent, confidentiality, and use. These principles can also be commonly found in the codes of ethics of sociological associations of other countries (Flick, 2009, pp. 36-37). There are three main principles guiding the relations of researchers in qualitative studies with the people and fields under inquiry (Flick, 2009; Orb, Eisenhauer, & Wynaden, 2001):

1. Autonomy – research participants’ values and decisions should be respected;
2. Beneficence – research should avoid harming participants and produce positive benefit;
3. Justice – all people should be treated equally.

To honour the principle of autonomy it is necessary for the researcher to obtain a dynamic (meaning the possibility to withdraw at any time) informed consent from the research participants (Punch, 1994). The Vetenskapsrådet guidelines detail this requirement as follows: the participants

should know what they are involved in (information requirement) and the material should not be gathered or used without their consent (consent requirement). All interviewees participating in my studies were informed beforehand that their potential involvement would be part of research activities, what the goals and expected outputs of the research are, and that they have an option to agree to an interview or recommend someone else instead. Recording of interviews was only done when the interviewee agreed to that. Thereby, informed consent was received at all occasions of using human research subjects.

The next important consideration, as conveyed by the beneficence principle, is the protection of informants’ concerns about disclosure of their identity, or the confidentiality requirement. In this research it was addressed by referring to the sources as anonymous and refraining from disclosing the concrete position or rank of the interviewees or making them identifiable in some other way. To acknowledge the principle of justice, the present study recognised the contributions and vulnerabilities of the research participants (Orb et al., 2001) by using citations cautiously, so as not to expose the identity of the participant by oversight.

The use requirement set by the Swedish Research Council prescribes that the gathered material is used and published in an ethical way. To respect this principle I validated with the interviewees that the transcript of the interview corresponds to their opinion in a precise and adequate manner. At some instances interviewees made corrections to the transcript which led to more clarifications. All research participants were made aware that the results were going to be published in an academic outlet and not used for any other purpose.
4. Findings

The general research question in this thesis was: *What are the challenges to implementation of participation in open government perspective?* This question was detailed in a number of operational research questions investigated in studies. Each study made a different kind of contribution to the general research question; Table 7 below gives an overview of that. The Findings section will summarize the results of the studies and explain how each of them furthered the understanding of participation in an open government context.

*Table 7 Overview of contribution of studies to the thesis*

<table>
<thead>
<tr>
<th>Study</th>
<th>Findings</th>
<th>Contribution to thesis</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Mapped the diversity of e-participation topics, identified research agendas in need of attention</td>
<td>Systematized key aspects of e-participation research to understand to which extent and how it can address the problem of participation in the open government perspective and what can be learnt from it</td>
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<tr>
<td>2</td>
<td>Described the normative scenario of the case using ideal participation genres (engagement, deliberation, dialogue)</td>
<td>Conceptualized participation as a dynamic process consisting of stages and elements and showed that implementation thereof has to account for this complexity</td>
</tr>
<tr>
<td>3</td>
<td>Analysed the lack of participation in the project, linked it to the legislative and technical design of the procedure and the institutional context</td>
<td>Identified the challenges to implementation of participation in the first case, divided them between political, technical, and organizational and explained how they are interconnected</td>
</tr>
<tr>
<td>4</td>
<td>Ascertained how governments can foster participation in open data context by providing adequate socio-technical infrastructure and opportunities for sustainable collaboration</td>
<td>Identified the challenges to implementation of participation in the second case, discussed the measures which public organizations can take to facilitate participation and help overcome the challenges</td>
</tr>
<tr>
<td>5</td>
<td>Proposed and tested a model of intrinsic enablers (motivation) to participate and use open data, broadened the scope of participation to the involvement of business actors with the government for service innovation</td>
<td>Focused on the challenge of engaging with business community around open data, discussed the motivation of users to participate and the implications of that for public organizations implementing open data programs</td>
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The relationship between the studies, namely how one has informed another, has already been discussed in section 3.1 in the explanation of the Research Process.

4.1 Study 1 – Literature review of e-participation

Study 1 was a theoretical investigation. The first study made a contribution to the overall thesis by setting the scene for the following studies of participation. In this study I systematized some key aspects of contemporary e-participation research in order to understand to which extent and how e-participation research can address the problem of participation in the open government perspective and what can be learnt from it. This was done by carrying out a literature review of e-participation.

The research question in this paper was: What are the themes and theories used in contemporary e-participation research? The review focused on the scope of the e-participation field (themes, issues, and agendas), its theoretical underpinnings, and its limitations (potential biases, challenges). The method for conducting this literature review followed the guidance by Webster & Watson (2002) and is thoroughly described in the paper. Based on the review of 50 articles, the study yielded a classification of themes and connections between them. As a result I proposed a roadmap to visualize the thematic variety of the field (see Figure 1 in the paper). The conclusions of this study were as follows:

1. In terms of themes – there is a lack of overlap between topics; fragmentation is apparent;
2. In terms of theories – theories from political science and media studies dominate;
3. In terms of limitations – discrepancy between e-participation and e-democracy research.

This study resulted in a research agenda, which identified a number of promising research directions and established the need to, among others:

- Develop a better understanding of the underlying reasons for institutional resistance and the lack of political will in e-participation projects;
- Investigate citizens’ potential to contribute more at early stages of policy-making (e.g. agenda-setting, consultations);
• Pay greater attention to national and supra-national institutional levels and non-institutional democratic stakeholders (NGOs, interest groups).

In the subsequent studies I have taken up on the three aforesaid issues, meaning that this research agenda has laid ground for the case studies that followed. Studies 2 and 3 thus focused on a case involving a supra-national organization and non-profit stakeholders; Study 3 explored the influence of the institutional and political context on e-participation implementation.

The lessons learnt from this study in relation to the overall research problem in this thesis are that there is a need for an interdisciplinary approach to participation in order to answer the research question. Mainstream e-participation research is biased with a tunnel vision of e-participation, which is confined to the boundaries of a democratic process (mostly policy-making process). Hence e-participation research can come in useful only to a limited degree for the study of an open government process; the latter includes a far larger pool of stakeholders (businesses, other government organizations, communities, non-profits etc.) and extends beyond policy-making into the complete cycle of service planning, design, and delivery.

This paper was published in Government Information Quarterly in July 2012 (Susha & Grönlund, 2012)

4.2 Introducing ECI case

Regardless of the fact that e-petitioning is widely spread, e-enabled citizens’ initiatives until lately have been largely absent in the majority of countries. One of the few examples is Finland, where in 2012 a citizens’ initiative procedure was introduced including online collection of signatures via a system set up by the Ministry of Justice. This makes the introduction of the European Citizens’ Initiative (ECI) – the first transnational mechanism of agenda-setting – quite unique and ambitious.

According to the rules, an ECI can be organized by a committee of at least seven EU citizens coming from at least seven Member States. Signatures for an initiative have to come from at least ¼ of the Member States, as each of them has an established quota for the minimum number of signatures required. Once not less than 1 million valid signatures are col-
lected, the European Commission is obliged to respond to the proposal within three months. The 1-million ECIs also get to be presented at a public hearing in the European Parliament. Online collection of signatures for ECIs is done using the electronic collection software offered by the EU (OCS – online collection system). This open source software provides all basic functionalities to collect statements of support online, securely store signatories’ data, and export the data to competent national authorities. It can be configured for any proposed citizens’ initiative by uploading all relevant information from the organizer account in the Official Register. The OCS software is available to initiative organizers free of charge and can be downloaded from the Join Up platform.

The body of previous literature on the European Citizens’ Initiative has been growing. Generally the common issues of discussion and analysis in the early literature include: the legal nature of the instrument, the procedural thresholds (subject matter, number of signatures); and the duties and powers of EU institutions (Auer, 2005; Cuesta-López, 2012; Szeligowska & Mincheva, 2012). A significant portion of research articles further discuss the issues pertaining to the political significance of the ECI among which are: the effect it may have on the role of the European civil society (Garcia & Del Río Villar, 2012), its potential to make citizens’ participation in EU politics transnational (Conrad, 2011), and the impact the ECI can have on the European institutional dynamics (Sauron, 2011). Furthering into the political science territory, several important contributions reflected on the ECI through the prism of democracy theories (Bruno, 2011; Monaghan, 2012). In sum, the research on the ECI has so far been dominated by analysing its meaning within the EU’s institutional and political system. Few studies have looked into the technological dimension of the ECI; one of them (Carrara, 2012) concluded that the role of the Internet should not be overestimated in these particular circumstances as, regardless of the enthusiasm in the civil society, online campaigning is a demanding task resource-wise, especially considering that it is not yet well-incorporated into habits throughout the whole EU. This brief review prompts the conclusion that there is a gap in viewing the ECI case from the technological and innovation management perspectives; this research aims to fill in this gap.

4.3 Study 2 – Conceptual study of ECI

Study 2 was a theoretical one as well. The contribution of the second study to the overall thesis was that it conceptualized participation as a
dynamic process consisting of stages and elements and showed that implementation thereof has to account for this complexity. This was done by investigating the ECI case as an example in the way it was conceived and expected to be realized in an ideal scenario.

The research question in this paper was: What is the nature of communication as it evolves during the ECI process? This was a conceptual study of the first case in this thesis work – the European Citizens’ Initiative (ECI) project. The goal of this study was to develop a framework of processes and outcomes of the ECI procedure in order to have a normative point of reference for the analysis of the case. The framework (see Table 1 in the paper) was informed by genre theory of communication (Yates & Orlikowski, 1992). The focus of this study was on the different “genres of participation” within the ECI. A genre of participation can be defined as a type of participatory action habitually enacted to realize a particular participatory purpose. The defining characteristics of a genre are: purpose, content, participants, timing, location, and form. Based on these characteristics, this study derived three normative genres (genre systems) of participation in the ECI depending on the stage of the process:

1. Deliberation – open rational discussions of an issue of common concern by members of the public (e.g. the formulation of a proposal for an initiative in the ECI case);
2. Engagement – mobilization of activity of the wider public in support of a certain issue (e.g. the signature collection process in the ECI case);
3. Dialogue – feedback from the government, settlement of the issue through an official process (e.g. a public hearing for an initiative in the ECI case).

This study showcased the dynamics of participation in the ECI as a process consisting of different phases and genres of participation. Not all genres, for instance, involve direct interaction of participants with the government; the technology tools useful at each phase differ as well. When implementing a project such as the ECI it is important to have all these aspects in view. In the discussion of the “ideal” genres Study 2 highlights some of the prospects of the ECI but also stipulates about potential risks and constraints. For example, as concerns the Engagement genre, the study brings up the issue of citizen-friendliness of the ECI procedure and
Participation in open government reflects on current debate in the literature concerning the democratic divide.

A conclusion which can be drawn from this conceptual paper for the first case in this thesis is that, regardless ideal scenarios, the reality is open to many different developments. There are potential challenges, at all different stages of participation, which the implementation of the procedure will have to encounter.

This paper was presented at the ePart 2012 conference in Kristiansand (Norway) and published in LNCS proceedings by Springer (Grönlund & Susha, 2012)

4.4 Study 3 – Empirical study of ECI

The contribution which Study 3 made towards the overall thesis was that it identified the challenges to implementation of participation in the first case, divided them between political, technical, and organizational, and explained how they are interconnected.

The research question in this study was: How was the development of the ECI affected by the institutional context? This study focused on the implementation context of the European Citizens’ Initiative, namely the initial platform usage issues. Compared to the findings of Study 2 and the identified normative genres of participation, Study 3 highlighted a number of constraints to Deliberation, Engagement, and Dialogue ensuing from the ECI. In short, the most prominent challenges to implementing participation in the ECI as identified in the study were:

1. Lack of clarity about the nature and goals of participation in the ECI in the policy domain;
2. High thresholds in terms of resources for using the system, unmet design requirements;
3. Lack of responsiveness in interaction with the users, reactive communication style.

To sketch the nature of the problem with the ECI, at the initial phase the online signature collection portal for the ECI created a number of obstacles for initiative organizers. For about half a year since the launch of the ECI the majority of initiative organizers could not start with the signa-
ture collection process due to complex system set-up and certification procedures they had to undergo.

In the following I will give a glimpse of how I arrived at these conclusions using the gathered data. First, in the research process I observed that different information units provided a different reading of what the ECI as a new participation tool represents. The discrepancy concerned what to expect from the ECI in terms of effects. Several key informants stressed that a most prominent effect of the ECI will be generating cross-country political debate, regardless of whether the ECIs make it into law or not. At the same time there was a lot of “hype” in making the ECI look like a real opportunity to influence EU policy-making, clearly visible in document studies and observations. Hence, there appeared to be little clarity regarding the actual outcomes that citizens should expect from this tool: to contribute to debates, to provide alternative participation channel, or to have an explicit right to influence policy decisions? In reality, according to reference works in democratic practice (Beramendi et al., 2008), the ECI is a medium-strength instrument of participation, as the final decision to set a proposed issue on the agenda and to propose new legislation according to the citizens’ proposal rests with the EU institutions. This was a serious political challenge – to create realistic expectations, but at the same time draw public attention and interest and motivate people to get involved. The ECI case teaches us that kindling false expectations (that ECI is an instrument of influence) can only aggravate disappointment when successful initiatives are not acted upon immediately and in the manner envisaged by initiative organizers. This could be observed on the ground when the first successful ECI on water and sanitation was acknowledged by the European Commission, but without the determination and scope expected by the organizers.

Second, in my interviews with elite informants I focused on a handful of critical issues, such as the user-friendliness of the rules and the system, the expectations regarding the use of ECI, the role of social media and other online channels, and the e-democracy climate in the institutions. The conclusion about high thresholds for using the system emerged in the course of attending a number of civil society conferences on the ECI. These were organized to discuss the problems and share experiences navigating the ECI rules and regulations among current and potential initiative organizers. While some of the informants projected that it would be fairly easy to organize an ECI, the organizers of first initiatives were in consensus that it is in fact a costly and resource-intensive task to launch and campaign for
an ECI. A number of civil society reports confirmed this latter position and thus further steered me to the conclusion regarding the poor citizen-friendliness of the tool and high thresholds to actively participate in the ECI. In short, the problem was that, although free open source software was made available, ECI organizers were required to find a hosting environment and certify their signature collection systems by themselves with respective local authorities. This rule was put in place to ensure the protection of data (including ID numbers in some EU countries) gathered by initiative organizers from citizens signing ECIs. This technical challenge was perhaps the most critical one in the ECI case: to, on the one hand, ensure the tool is user-friendly and simple to use and to, on the other hand, ensure the signatories’ data is not misused or manipulated. Both are legitimate concerns when it comes to participation on the Internet.

The third conclusion regarding organizational challenges was informed by the analysis of the events and developments concerning the contacts of EU institutions with initiative organizers. There were many complaints and concerns voiced by initiative organizers regarding problems with the set-up of signature collection in May 2012. The problem was resolved, on a temporary and exceptional basis, in October 2012 when EU servers in Luxembourg were offered to initiative organizers to get first ECIs off the ground. In other words, it took over four months and countless reports via social media, press releases, events hosted by initiative organizers to have the Commission act on the problems. In the course of interviews with civil servants (as I had to make myself receptive of alternative views as well) it became clear that the delay and indecision on the part of the EC was related to the fact that it was not their responsibility to collect signatures and that initiative organizers were in fact the ones “in the driving seat”. The event that arguably triggered the decision to act and offer servers in October 2012 was an open letter of a Member of the European Parliament who explicated the gravity of the situation and sided with the initiative organizers. Hence, the ECI tells a story of an organizational challenge which consists in, on the one hand, preserving authority and established routines in dealing with citizens’ complaints (especially those communicated via new media) and, on the other hand, not letting the situation escalate and timely and proactively picking up issues that are in need of resolution.

In short, the main conclusion of the study was that the lack of participation in this particular project can be linked to the legislative and technical design of the procedure and to the institutional context. There were a
number of “soft” and “hard” barriers for citizens and other non-state stakeholders to participate in the ECI. Making use of the ECI was both difficult and without any guarantees of impact.

This paper was published in Government Information Quarterly in July 2014 (Susha & Grönlund, 2014).

4.5 Update on the ECI

Studies 2 and 3 investigated the initial phases of implementation of the ECI (period from April 2012 until October 2012), therefore it is important to report on more recent developments in this project which were not covered by the studies but are nonetheless valuable for this research. My research left off at a point when there were problems with the usability of the online collection system for the ECI. No results as to the outcomes of the successful initiatives were yet available. I will hence elaborate on these two issues; the ECI has been running for over two years now.

In this period the technical difficulties have been addressed to a limited extent. The European Commission (EC) offered, as a temporary exceptional measure to get the first ECIs off the ground, their own servers in Luxembourg to be used by initiative organizers (European Commission, 2012). Also the deadline of 12 months was extended to discount for the “lost” six months and the decision was made to give a new 12-month deadline to all registered initiatives as of 31 October 2012. Later on in July the EC adopted legislation ("Commission Delegated Regulation (EU) No 887/2013 of 11 July 2013 replacing Annexes II and III to Regulation (EU) No 211/2011 of the European Parliament and of the Council on the citizens’ initiative," 2013) to amend the statement of support form in which signatories to the ECI must provide personal data; each member state has different data requirements to be able to sign an ECI (ID number or date of birth). So the requirement of ID number was abolished for citizens of Luxembourg, as well as the requirement of permanent residence for Dutch citizens, other marginal national amendments were included. Many more countries have however remained with the requirement of personal data and restriction of permanent residence in the country of citizenship (ECI Campaign, 2013). It would perhaps be fair to say that a number of positive developments have taken place to make the ECI a better working instrument of participation. There is acknowledgement of the problems faced by initiative organizers by the EC. But it is clear that the demands of initiative organizers have not been fully satisfied and many
hurdles have remained. The civil society still calls upon the EC to organize a collaborative process to rebuild the system from scratch with active participation of initiative organizers, EU and national authorities, and civic coders.

As to the legal impact of successful ECIs, as of February 2015, two initiatives have collected 1 million signatures according to country quotas that have been verified and approved. These ECIs have moved forward significantly – “Right2Water” organized by public service unions and “One of Us” organized by a federation of pro-life associations.

The first public hearing on an ECI has taken place on 17 February 2014 in the European Parliament; this was the ECI “Right2Water” demanding the provision of water and sanitation as essential public services for all (more than 1.6 million signatures). On 19 March 2014 the EC issued an official “positive” response to this ECI, one concrete step it promised was to organize a public consultation on the issue of this ECI. The initiative organizers however were disappointed since in their view the Commission’s response did not contain any specific legislative proposal to implement their initiative (Water is a Human Right, 2014). The consultation was launched soon after in June 2014. A stakeholder meeting was thereafter organized on 9 September 2014 by the EC on benchmarking of water quality and services.

The public hearing for the second successful ECI “One of us” (more than 1.7 million signatures) has taken place on 10 April 2014; this ECI demands ban on funding of activities – in research, development aid, and public health – which presuppose the destruction of human embryos. The official response from the EC, issued on 28 May 2014, was that the initiative proposal is declined.

The review of the regulation on the ECI is due in 2015; in the meantime all valuable experiences and lessons learnt have been documented by the ECI advocates in the book An ECI That Works!

It is possible to draw several conclusions from these recent developments. First, given that many participation challenges remain even after two years, the learning curve when it comes to orchestrating open policy development in complex institutional settings can be rather flat. The response of the institutions to the successful ECIs draws criticism, as well as the lack of supportive infrastructure to enable mass engagement across EU.
4.6 Introducing open data cases

Open data is defined as data published in machine-readable formats, which can be freely used, reused, and distributed by anyone (Open Data Handbook, 2012). Publishing government data as open data can enhance accountability and transparency of public organizations, support decision-making and lead to smarter policies, increase citizens’ involvement and empower them in their daily lives, boost entrepreneurship and lead to improved services for citizens etc. Open data has recently become one of the high-priority issues on the agendas of government organizations at all levels of many countries. In the EU the so-called “PSI Directive” (Directive on the re-use of public sector information) adopted in 2003 and revised in 2013 provides a common legal framework for a European market for government-held data. On a global scale the Open Government Partnership initiative, of which open data is one of the pillars, has expanded to 65 participating countries committed to achieve greater transparency of information.

Choosing open data initiatives in Sweden and the Netherlands as case studies was motivated by the fact that these countries, in their own terms, are considered leaders in aspects related to open data. Sweden has a long tradition of openness with the freedom of information law in place since the 18th century. Both countries are ranked high in e-government and e-participation globally by the UN e-government survey. Both countries score quite high and have close margins in ranks according to the 2014 Global Open Data Index⁴ – Sweden is ranked 12th globally, the Netherlands is ranked 16th globally. This ranking is based on the number of released datasets in ten key areas, which means there is quite an amount of open data already published in the two countries. An alternative ranking by the Open Data Barometer⁵ compiled by the World Wide Web Foundation puts Sweden 3rd globally and the Netherlands 6th based on a combination of criteria, including implementation and impact. Even with these fluctuations it can be safe to argue that both countries have made significant progress in open data adoption.

⁴ http://index.okfn.org/
⁵ http://www.opendatabarometer.org/report/analysis/rankings.html
4.7 Study 4 – Comparative study of open data

This study was dedicated to the second case in this thesis work – open government data. The contribution that the forth study made to the overall thesis was that it identified a number of challenges to participation taking open data as an example and provided an overview of measures that can support participation and use of data by diverse categories of users.

The research question in this study was: Which organizational measures can facilitate the use of open data? The focus of this study was on the organizational measures which can foster the use of open data by different kinds of users (citizens, businesses, non-profits, other organizations, researchers). Four organizations participated in the study: two local administrations (Örebro, Groningen) and two statistics agencies (Statistics Sweden, Statistics Netherlands). The four organizations, mandated by European and national legislation, adopted open data programs quite recently in order to achieve a number of external and internal benefits: to create new business opportunities, increase transparency, bring public information closer to citizens, contribute to the development of the area etc. Thus the goals and expectations were rather broad.

Based on the review of existing literature I discussed several major challenges to implementation of participation in the open data context. A most topical problem in open data practice lately has been the lower-than-expected adoption of published open data by users. A possible explanation for this, according to the literature, is the lack of skills and knowledge among mainstream public to use open data (“data divide”). The challenge for public organizations publishing open data therefore is, on the one hand, to meet the needs of less experienced users and, on the other hand, to provide comprehensive datasets via an efficient procedure. Having said that, this study seeks to find out how public organizations can support open data use and participation. As a result the study puts forth a list of organizational measures grouped in two categories as identified through literature review and validated through case studies:

1. Data Artefact – measures to provide for an open data infrastructure which is user-friendly, of high quality, timely, transparent, interoperable with other systems, compliant with demand, robust;
2. Data Process:
   a. Communications – measures to achieve outreach, initiate conversations around open data, establish an interaction with users;
   b. Support – measures to support users in data adoption;
   c. Sustainability – measures to facilitate sustainable collaboration between stakeholders in an open data process.

The paper details the measures in each of the categories and subcategories and provides examples of best practices in each category. For instance, to entice conversations around open data (Communications) an organization can use blogging to showcase success stories, wikis and social media, search engine alerts to find out when data is mentioned. To support capacity building and development of skills open data literacy camps can be used, as well as master classes, e-learning courses, free mentoring and advice, documentation, tutorials, case studies, how-tos, FAQs etc. For a complete overview of measures and corresponding best practices I refer to Table 2 in the paper. The focus of these measures was more on organizational and technical issues, rather than political ones (more relevant for initiation of open data programs than implementation). The identified measures are a mix of strategy and tactics, high level and low level actions (e.g. organizational policies as high level and use of certain communication tools as low level) that were highlighted in the (practitioner) literature.

Having a list of recommendations is fine but applying them to specific situations is better. Hence, I conducted four case studies in order to assess the extent to which the best practices I had identified were considered by data publishers in practice. The overall conclusion from this comparison was that organizations tend to be selective in implementing user engagement measures and tend to adopt a step-by-step approach. The foremost concern of the open data managers is to set up a workable open data platform (category 1) and initiate first contact with potential data users (category 2a). Hence, the measures concerning support to open data users (2b) or sustainability (2c) are not yet high up on the agenda of the public organizations I studied. Table 2 in the paper provides an overview of which of the measures from the literature were implemented, under consideration, or not implemented in the four organizations in this study.
The interviews with informants yielded a number of interesting insights shedding light on some of the challenges of achieving engagement around open data. First, according to the informants, the spectrum of potential open data users is broad and uncertain, and in practice the organizations admitted to having little to no knowledge regarding who uses their data. At the same time users who are perceived to be likely to produce economic value using open data are seen by data publishers as a major target group. One of the interviewees used the metaphor of “thinking in chains” noticing the important role of intermediaries who use open data to provide meaningful information and services to ordinary citizens. The challenge for public organizations in this respect is finding the right balance between a too narrow and a too broad target audience. Users of open data may belong to different communities, use different technologies, and have different objectives when it comes to open data use. Since all four organizations were relatively new to open data, there were limited organizational resources to provide comprehensive assistance to all the different user groups. As shown in Table 2 in the paper, implementing formal processes for interacting and receiving feedback from open data users (via a forum, contact form, error reporting etc.) was a difficult task still under consideration by all four organizations. At the time only Örebro municipality and Statistics Netherlands had established a clear communication strategy and outreach for their open data programs.

Second, related to the challenge of identifying the target users is the task of deciding which data to publish. As Table 2 in the paper shows, the two municipalities (Örebro and Groningen) found it to be challenging to release high-impact and high-value data first. Without knowing who is going to use the data and to which end it is difficult to identify relevant data sources. As some interviewees pointed out, the strategy had been to publish whatever is easy to publish first. The implications of that however are that releasing data is not problem-driven and does not follow any specific purpose. Identifying the problems that can be solved by data and then finding and publishing these data is a serious challenge to public organizations, as well as to other involved stakeholders.

Third, as mentioned above, providing support to open data users and achieving sustainability in the open data process were the least common steps that the studied organizations would take in their open data projects. As Table 2 in the paper shows, the most typical form to support open data use was to organize events, such as hackathons or app competitions; however, two of the organizations in this study (from the Netherlands) ex-
pressed their doubts about the benefits of such events. This denotes that at early stages in the implementation of open data there are many constraints due to resources and priorities of an organization. On the one hand, the literature advises that data publishers organize events, provide additional tools to work with data, support capacity building and development of skills among users. On the other hand, public organizations (especially municipalities) have limited expertise and resources to offer those kinds of support. Moreover, as one interviewee noticed, it is arguable whether public organizations should be involved in capacity building activities at all, as this is a business opportunity which should not be taken away.

This paper has been accepted for publication in Transforming Government: People, Process and Policy (Susha, Grönlund, & Janssen, 2015 in press)

4.8 Study 5 – Survey of businesses on open data
This study focused on the challenge of engaging with business community around open data. The contribution of this study to the overall thesis was that it discussed the motivation of users to participate and the implications of that for public organizations implementing open data programs. Looking at the motivation provides a complementary perspective on the implementation of participation, as it focuses on adoption behaviour and user perspective. If Study 4 explored the technical and organizational infrastructure that can support engagement with data; Study 5 focused on the needs and demands of open data users and how they can be met by data providers in the open data process.

The research question in this study was: What are the driving factors of open data adoption by businesses for service innovation? The goal of this study was to investigate the motivation of businesses to engage with open data. It was based on an exploratory survey of 25 businesses in Sweden and the Netherlands. The study used a model of driving factors of user innovation by Bin (2013). In the survey the participants were asked about the factors enabling their open data innovations and about the perceived degree of importance of each of them. These factors (originating from Bin’s model) were: perceived benefit, perceived effort, perceived social influence, innovativeness, and experience.

As a result, the study described the demographics of businesses innovating with open data and gave examples of successful new services in two
countries. The analysis of survey responses using descriptive statistics led to following four propositions:

- **Proposition 1**: Businesses are being driven by various factors to use open data for innovation. The rates of success in gaining profit from using open data differ widely. Innovativeness of the company and personal interest are influential drivers at early stages of experimentation.

This conclusion was based on the finding that there was a close run between the scores the respondents assigned to the different variables in terms of their importance. However, the variable of innovativeness was ranked highest (32% of respondents ranked it as the most important). Regarding the rates of success, this conclusion was informed by the data provided by the respondents concerning concrete example of service or innovation they have developed and at which stage of the development it currently was. According to these data, some businesses were more successful than others.

- **Proposition 2**: Expert knowledge and technical skills are more important assets to have than finances in order to be able to innovate using open data. Getting started with using open data is a learning experience which requires the most effort at the outset.

This conclusion was drawn on the basis of the finding that there was reasonable agreement among respondents (SD=0.91) with the statement that innovating with open data requires a fair amount of technical knowledge and skills (M=4, min=2). At the same time a relatively low average score was assigned by the respondents to the question about the costs required to develop new services based on open data; from this I infer that innovating with open data is not always a costly endeavour. Regarding the conclusion related to efforts, the data analysis showed that there appeared to be a correlation between the amount of experience of using open data and the perceived effort it takes to develop an open data innovation. Participants who had used open data for over a year assigned a lower average score to the required amount of effort (M=2.5, min=1, max=4) than the participants who had used open data for less than a year (M=3, min=2, max=5).
• Proposition 3: Driving factors of using open data for business innovation are not independent of country contexts, hence countries differ. Both macro and micro trends influence the motivation of business data users: country’s innovation climate, economic and social trends, working culture, and the specifics of open data supply.

This conclusion was based on the analysis of survey responses per country comparatively. Such analysis showed a few differences between countries as to how the respondents perceive the importance of the different variables. For example, respondents from the Netherlands perceived, with considerable agreement (SD=0.63), that innovating with open data adds significant economic value to their businesses (M=4, min=3). The Swedish respondents showed less agreement in this respect (SD=1.4) and assigned less importance to economic value gained from their open data innovation. While explaining the differences was outside the scope of this study, one might speculate that potential contributing factors to such differences might include innovation climate, economic or social trends, specifics of open data supply, or working culture of the two countries.

• Proposition 4: Facilitating conditions are important for stimulating open data use by businesses but are not given sufficient attention by data providers even in countries where open data publication is not new. As a general rule, continuous reciprocal interaction, adequate support mechanisms, and better quality data infrastructure are required.

The basis for making this conclusion was the finding that in the sample there were only three businesses who were fully satisfied with support, interaction, and technical infrastructure offered by data providers within the open data process. Among these three one used a commercial data repository and the other two used national portals in the timeframe of an app competition. This finding hints at an insight that outside competitions it can be more challenging for public organizations to meet the expectations of users. On average the survey data showed a relative consensus among the respondents from the Netherlands (SD less than, or close to, 1) that businesses are satisfied to an average extent with the interaction and
the technical infrastructure. The opinions among the Swedish respondents were more dispersed, although they ranked the existence of reliable infrastructure as the second most important driving factor. Analysing the open-ended questions offered a number of insights into which improvements businesses would like to see when it comes to open data. The majority of respondents brought up the issue of quality of data and data infrastructures. Other notable quotes, such as those below, led me to the conclusion that users of open data would benefit from more robust and efficient interaction and support from data publishers.

“Big help from meeting the responsible persons in real life on open data event. They could answer some undocumented questions” (Anonymized respondent from Sweden, 4 April 2014)

“Working with the government is a slow bureaucratic process with varying degrees of success” (Anonymized respondent from the Netherlands, 5 February 2014)

The main conclusion that can be drawn from this study altogether is that using open data requires certain preconditions – innovativeness at the outset and expert knowledge. Besides, the needs and demands of users aiming for service innovation are different from those of users willing to extract information from data. These propositions yield a number of insights in respect to the challenges of implementing participation in open data that public organizations face. First, at early stages of open data programs, businesses, just like governments, are experimenting and exploring the possibilities of open data. This is one reason that economic gains, as found by this survey, are not the only or even the most powerful driving factor of open data adoption. Contrary to expectations, building a successful business using open data takes time during which the supply of data matures and its maintenance improves. Second, businesses are not interested in just any data; of utmost importance, as highlighted by respondents in this survey, is that a particular dataset is possible to combine with other data. This means, that for data publishers it is beneficial to liaise with the business community at early stages of open data programs. This will help them get an understanding of which specific datasets are in demand and which data quality and data maintenance requirements businesses have to be able to take open data seriously. Third, as the fourth
proposition states, public organizations are advised to invest more resources into improving support, on the formal level, to businesses interested in open data. In many cases information, help, and support related to open data is provided on an informal basis by the few knowledgeable and enthusiastic civil servants managing open data programs. Interaction with open data users is not institutionalized and occurs outside any frame of reference as rather an exception.

This paper is currently conditionally accepted for publication in Information Polity (Susha, Grönlund, & Janssen, 2015 in press)
5. Discussion

In this section I will discuss how the two cases in this thesis – the ECI and open data – compare to one another based on the findings of the empirical studies and how one can generalize my results towards other participation initiatives in the open government family. I will also reflect on the challenges to implementation I identified in my studies in light of existing research and the main theories selected for this research.

First of all, both the ECI and open government data, at the time of writing, have encountered limited adoption by users and are yet to fulfill their promises. In both cases the expectations were that by opening up, policy-making and service provision will improve thanks to the collective knowledge of individuals and relevant entities. The ECI was spurred by the need to bridge the democratic deficit in the EU by acknowledging problems on the ground in the member states. This was an attempt to embrace the initiative and expertise of the civil society and activists across Europe in order to identify areas where new legislation can bring EU closer to its citizens. Similarly, the release of open data by governments should be seen in the context of shortage of public resources to make the most use of available data. The expectation was that data would be consumed by citizens, researchers, or journalists to produce new policy insights and by businesses and entrepreneurs to build new services. This research, although it focused only on early phases of implementation, found that in both cases government organizations faced a number of challenges which precluded progress and hampered the realization of the goals of these projects.

The previous section discussed the identified challenges individually study by study; in this section I will provide an overview and summarize them on a more general level and in relation to one another.

5.1 Overview of identified challenges

To make sense of the studied cases and their implications I organized all identified challenges in Figure 5 below. To be able to draw lessons from my studies for the open government practice in general I rephrased the challenges from the papers in more general terms.
To systematize the challenges I used the theoretical lenses on open government (Linders & Wilson, 2011) and the three dimensions of open government (European Commission, 2013). These were explained more in detail in section 1.2. The model of Lee & Kwak (2011) was also an inspiration, namely the aspect in which it distinguished between such forms of participation/collaboration as “engagement through data”, “engagement through conversation”, and “engagement through projects and tasks”. Hence, Figure 5 includes three columns representing the dimensions of open government in which participation of citizens and other non-state actors can take place: A. Participation in open data process; B. Participation in open decision process; and C. Participation in open service process. The findings of my studies can be distributed between these three columns, as Study 4 focused on open data use, Studies 2 and 3 examined open decisions (using the ECI), and Studies 4 and 5 looked at open services (using open data). There is certainly overlap between the columns (open data is relevant for open services etc.), but for clarity reasons I examine these dimensions separately. I chose not to present these categories as “levels” or “stages” (in the manner Lee & Kwak envision this) because all these
types of participation can and do coexist and none of them is qualitatively “better” than the other. Instead they relate to different dimensions of open government. It would be more appropriate to propose stages within each of these categories that would capture how e.g. participation in open data can be more basic (one-way provision of data) or more advanced (with interactive elements like forums or groups in social networks). While there are many stage models (from e-participation) which can be applied to the Open Decision dimension, there are yet none in the open data field which would stipulate how participation progresses and matures in stages. This is hence an interesting avenue for future research.

*Participation in open data process* refers to participation whereby open data is accessed and interpreted by citizens and other users for the purpose of providing insights and knowledge regarding any particular policy issue. The use of open data for data journalism, use of collaborative open data platforms, use of open data for research and learning are some examples of participation in this open government dimension. Lee & Kwak (2011) call this type of participation “engagement through data”. In this thesis Study 4 was conducted to focus on this dimension (as well as the third dimension). Five challenges can be inferred from the findings of this study (see Figure 5).

*Participation in open decision process* refers to participation whereby citizens and other actors engage in the design and implementation of public policies in order to influence them. This type of participation is typically known as e-participation. Lee & Kwak (2011) refer to this type of participation in open government as “engagement through conversation”. In this thesis studies of the ECI (Studies 2 and 3) focused on this dimension. Three challenges can be inferred from the findings of these studies (see Figure 5).

*Participation in open service process* refers to participation whereby citizens and other actors engage in the design, development, or delivery of services in a collaborative fashion. Lee & Kwak (2011) call this participation type “engagement through projects and tasks”. Examples of participation in open service process can include living labs, social innovation projects, or open challenge platforms and can involve using open data of course. In this thesis Studies 4 and 5 focused on this dimension. Five challenges were identified pertaining to this participation type (see Figure 5).

Across these three dimensions one can identify similarities in terms of challenges to implementation of participation. All listed challenges (Figure 5) can be summarized into the following four “meta-challenges”:
1. Integration of input (challenges A5, B3, C4);
2. Inclusion and thresholds (challenges A1, A2, B2);
3. Meeting demand (A3, B1, C1, C2);
4. High-impact results (A4, C3).

In the following sections I will discuss these four meta-challenges in more depth.

### 5.1.1 Integration of input

A challenge common to all three dimensions of participation in open government is the integration of input (citizens’ opinions, data-driven content, data-driven services) into governmental decisions or operations. In other words, this challenge can be referred to as the lack of feedback loops in the implementation of participation in the open data, open decision, and open services processes. In this research I came across this challenge in all empirical studies of the ECI and open data.

Namely, as far as the ECI case is concerned, one of the most crucial issues identified in Study 3 was that citizens’ input is not fully embraced and integrated by the governments into final decisions (B3 in Figure 5). Presently no straightforward legislative results of citizens’ initiatives are available yet, although several ECIs have succeeded with one million signatures. The most any successful ECI can count on is a public hearing at the European Parliament and raising awareness among the European politicians about the matter of their proposal. Other than that, it is uncertain whether or not any successful citizens’ proposal will be taken up by the EC and transferred into an EU law. Besides the democratic design of the ECI, integrating the feedback of the users of the ECI signature collection system was challenging for the EU. As Study 3 described, for half a year initiative organizers were unable to start signature collection because of the cumbersome setup and certification procedures, and only minor improvements could be done by the European Commission before the official review of the ECI Regulation in 2015.

As far as the open data case is concerned, Study 4 found that commonly data publishers have no policies or procedures in place to follow up on the use of their data, identify interesting applications of their data and evaluate the insights potentially relevant for improving their policies in any particular area, or simply interact and participate in the network of users (activists, researchers, journalists etc.) interested in data-driven knowledge.
In other words, government organizations admit to having very limited knowledge about what new analyses, visualizations, apps, or other ways their open data is applied exist. None of the organizations in Study 4 were able to provide an example where published open data has led to any new knowledge or service that has been embraced or at least noticed by the organization (A5 and C4 in Figure 5).

This challenge, termed “integration of input” in this thesis, is not a new problem and has been previously highlighted (Macintosh, 2007) in the e-participation as well as the open public innovation literature. It is in fact one of the most common problems relevant to e-participation processes that governments fail to integrate outcomes into the policy processes or respond to them effectively (Kalampokis, Tambouris, & Tarabanis, 2008; Roeder, Poppenborg, Michaelis, Märker, & Salz, 2005). Van Veenstra et. al (2011), in their study of Dutch local governments, point to two underlying reasons behind the challenge of integrating citizens’ input: a political one – fear of making things very political and lack of rules stipulating which response is appropriate; and an organizational one – lack of skills and resources for process management to deal with citizens’ input. Mainstream e-participation literature, particularly e-participation stage models, considers that the problem of responding and integrating citizens’ input should be addressed by sharing decision power and allowing citizens more influence. If citizens’ opinions are not directly translated into government decisions, the level of e-participation is lower (e.g. engaging instead of empowering) and hence disappointing. Alternatively to stage models, other authors (Kim & Lee, 2012) propose a process model of e-participation (regardless of level) which differentiates between the “quality of government responsiveness” and the “influence on decision making” as its elements. Government responsiveness, strictly speaking, can be defined as the speed and accuracy (the extent to which the citizens’ needs are met) with which the government responds to the citizens’ request for information or action. A study of social media responsiveness of an UK government agency (Panagiotopoulos, Barnett, & Brooks, 2013) conceptualized high-quality government responsiveness in relation to e-participation as follows (based on public administration literature): (1) managing expectations of responsiveness; (2) audience and network awareness; (3) proactive monitoring and alertness; (4) promoting positive behavioural change. Hence, government responsiveness to citizen participation consists of such elements as listening, networking, and collaborating (ibid). Reflecting back on the studies in this thesis, the ECI case failed in terms of managing ex-
pectations of responsiveness (disappointing response to successful ECIs that was contrary to expectations) and proactive monitoring and alertness (slow resolution of system setup crisis regardless complaints); the open data case failed in terms of audience and network awareness (lack of insight about open data users, potential and current) and promoting positive behavioural change (lack of incentives and outreach to promote open data use).

From the point of view of open innovation literature, the problem of integrating external input relates to the issues of outside-in innovation process and the “absorptive capacity” of an organization. In simple terms absorptive capacity is the ability to identify, assimilate, transform, and apply external knowledge (Cohen & Levinthal, 1990). The absorptive capacity of an organization depends on the prior related knowledge, without it the organization is unable to determine the potential value of the external knowledge (Roberts, Galluch, Dinger, & Grover, 2012). However, absorptive capacity is first and foremost an “organizational capability”, it concerns the processes and routines the organization uses to identify, assimilate, transform, and apply external knowledge (ibid, p.628). This construct, like the rest of open innovation theory, has so far not seen wide application in the public sector context. A case study of an open innovation challenge platform for the public sector in the US (Mergel & Desouza, 2013), one of the few, confirmed that seldom were the solutions to the challenges actually integrated into the administrative processes or service offerings of the government organizations. One explanation for this suggested by these authors was that the internal processes were too rigid to absorb and appropriate the value from the solutions.

In summary, based on the findings from my own research – which is also supported by existing literature as explained in the above – my conclusion is that integrating the input of participants in an open data, open decision, or open service process is a fundamental challenge faced by governments attempting open government programs.

5.1.2 Inclusion and thresholds
The second most common meta-challenge to implementing participation in open government is the problem of inclusion and lowering participation thresholds. This challenge can be found in two dimensions of Figure 5: coping with “data divide” in open data dimension (A2), and ensuring inclusion and equal rules of the game in open decisions dimension (B2). Challenge A1 – lack of insight about users of open data – is also related to
this category as I will explain below. The studies in this thesis (Studies 2, 3, 4) found high thresholds in terms of users’ knowledge and skills in both cases, albeit the ECI and open data were supposed to be democratic resources accessible to all citizens.

Inclusion is an important challenge in an open government context, since participation activities are often complex information-intensive problem-solving exercises requiring domain expertise and technical skills. Study 5 showed that expertise and resources were found to be the most important driving factors of participation of (business) users in the context of open data. It is hence an open question concerning who is supposed to participate in an open government process – selected experts or an undefined “crowd”? The studies in this thesis show that in both projects a chain of participation occurred – intermediaries do the “heavy lifting” (of campaigning or data handling, respectively), while the crowd does the “push-button” activities based on that (signs an initiative or uses the visualizations already built from open data). So far it has been a myth that “ordinary citizens” can use the ECI or open data. In order to attract a more varied participant base data publishers need to provide incentives to make open data interesting, relevant, and promising to individuals and organizations. To encourage conversations about datasets social media can be effectively used for outreach to a wide audience. As Study 4 concluded, it is a rare occasion when a publishing organization has a specific social media strategy in relation to open data. Open data is a new opportunity for government organizations to connect with its citizens, in a way it is a democratic resource to take this relationship to a new level.

This meta-challenge is related to the issues previously discussed in the literature, namely that governments have to cope with a large and diverse range of prospective participants with different motivations (Almirall et al., 2014; Macintosh, 2007) in both e-participation and open innovation projects. This challenge can be comprehended and addressed differently from the point of view of e-participation, open government, or open innovation theories and perspectives. As far as e-democracy theory and the ensuing e-participation are concerned, different democracy models argue for different approaches towards who participates in a democratic process and how. Representative, deliberative, participatory, or direct democracy models paint a different picture of participation. Stephen Coleman in his book Making the E-citizen (2012) outlines three different types of citizenship in the digital age: an “info-lite” citizenship, “push-button” citizenship, and “actualizing” citizenship. Open government as a discourse in-
tends to promote the last type where citizens play an active role of partners and collaborators in government business. It is, however, important to realize that all types of citizenship coexist in reality and not everyone is able or willing to participate in a meaningful way. Farina et al. (2013) discuss the need to balance inclusion with the so-called “enlightened understanding” and to trade more participation for better participation in implementing e-participation tools. A similar approach follows from the open government philosophy which proposes the idea of “egalitarian self-selection” (Noveck, 2009), i.e. users select by themselves in which open government activities to engage based on their interests and competencies. The issue of competences and skills takes on special significance in the open government context since participating in open data, open decisions, or open service processes may require a completely new set of skills. For example, using open data requires skills in statistics, data analytics, visualizations etc. To obtain such skills open data excellence centres around the world offer training to interested parties. A similar situation happened in relation to e-government when, compared to manual public services, e-services required a change of skills for citizens to efficiently use them (Grönlund, Hatakka, & Ask, 2007). Apart from skills, the issue of motivation and needs comes into spotlight when discussing who the participants in open government are. User innovation theory (von Hippel, 2005) offers a useful concept in this respect in its “lead user” approach. It postulates that it is users with advanced needs who are at the foreground of innovation, those who can anticipate what the general population will need soon. “Innovation intermediaries” is another concept from the open innovation theory which highlights who is in position to play an active role in an open government process. A study of open innovation projects in several European cities by Bakici et al. (2013) found that innovation intermediaries act as key enablers of open innovation in the public sector by building networks, sustaining collaboration, and providing necessary resources.

In sum, coping with new divides and attracting wider audiences into open data, open decision, and open services processes is an unresolved and pressing challenge for open government.

5.1.3 Supply and demand
Another prominent meta-challenge (comprising of challenges A3, B1, C1, C2 in Figure 5) is matching the supply with demand in the implementation of participation in the open government perspective. This challenge can
refer to a number of issues, such as providing the content, the infrastructure, the design, the quality of service that is in demand among the target users. The issue of meeting demand can be understood at different levels but in essence it means serving user needs and meeting their expectations in terms of service. Both studies of the ECI and open data in this thesis (Studies 3-5) highlighted the problems related to the fact that public organizations had not accounted to the needs and requirements of prospective users. The signature collection system for the ECI, in addition to being problematic to setup at first, did not have the commonly expected these days integration with social media. To sign an ECI the users had to fill in a form and provide their personal information (which presumably deters a portion of participants), this is a far less intuitive and easy way to express one’s support than a “like”. In the case of open data, as found by Study 5, the open data published is not always interesting, useful, or of sufficient quality for developers; a more reliable and sustainable data supply and maintenance is needed in order for the entrepreneurs to transform data to services. In sum, the studies in this thesis showed that the needs and expectations of prospective users in terms of content, functionalities, infrastructures for participation were not sufficiently fulfilled; that in turn resulted in the relatively low level of current users’ satisfaction with the participation tools (signature collection system and open data infrastructures). The reasons governments fail to grasp crucial user demands can be several: in particular the fact that such demands may be diverse and many due to the large heterogeneous audience of prospective users; or the fact that governments do not do a good job in gathering, evaluating, and translating these demands into functionalities or content of participation initiatives.

Like in previous sections, the way e-participation and open innovation literature perceive this issue differs. The user-centric approach takes a prominent spot in e-government research (of which e-participation is a part), namely in aspects related to service design and evaluations. Proponents of user-centric design argue that repeated consultancy of the prospective users from an early stage in the system design process onwards will ensure the development of high quality services that comply with the needs and wishes of citizens (van Velsen, van der Geest, ter Hedde, & Derks, 2009). Development of services is however only one aspect; a study by Bertot et al. (2008) put forth a number of strategies to handle the users’ demand in citizen-centred e-government: assessing users’ information needs; understanding users’ preference, expertise, and availability in terms of ICT; engaging users; evaluating services for continuous improvement;
forming community-based partnerships. Building on the e-participation evaluation model of Macintosh & Whyte (2008), satisfying demand can refer to users’ needs and expectations in terms of usefulness of content and tools, their usability, and social acceptability (relevance to users’ purpose). Besides, user-friendliness and usability of e-participation tools was found to be one of the most frequent and important success factors (Panopoulou, Tambouris, & Tarabanis, 2010). Interestingly, a recent study of a sample of arguably the most ambitious EU-funded e-participation projects (Prosser, Koussouris, Charalabidis, & Askounis, 2011) showed that accessibility was a major issue with which few projects could cope.

From the point of reference of open innovation literature, matching supply with demand in terms of content and functionalities for participation refers to designing open innovation platforms which would ignite users’ interest and enable them to participate (share ideas, collaborate, build networks) in an efficient manner. The participation of users on open innovation platforms consists of four “experiences” (inferring from the literature on customer involvement in the private sector (Nambisan & Nambisan, 2008)): pragmatic, sociability-related, usability-related, and hedonic. In other words, users have expectations and needs in terms of, respectively, task accomplishment, interaction with others, ease-of-use, and appeal of participation tools. Few studies focus on the design of open innovation platforms in the public sector; one of the exceptions, an action research by Koch et al. (2011), proposes principles that can help develop open government (crowdsourcing) platforms according to user needs. These principles cover such design aspects as requirements in terms of tasks, tools, interaction, process intensity, incentives, to name a few. My observation therefrom is that the open innovation perspective highlights satisfying user needs by providing functionalities maximizing their productivity and performance, whereas the e-participation perspective tends to focus on satisfying user needs by providing relevant and user-friendly tools.

In sum, meeting the needs of citizens and other users in terms of various design aspects of participation initiatives is a complex yet frequently overlooked meta-challenge that open government practitioners face.

5.1.4 High-impact results

Last but not least, I will discuss the challenge of achieving high-impact results when implementing participation (comprising of challenges A4 and C3 in Figure 5). The results of my studies (Study 4) showed that for public
organizations it is a challenge to ensure that the open data process is aligned with real life societal problems and is actually delivering on its promise. Similarly it is difficult to get prototypes built on open data off the ground, scale them up, and achieve any sizeable transformation in public service delivery (Study 5). So far the evidence and examples of situations where open data or open services have made a difference are a handful. The ECI case as well shows little confidence in producing any significant policy impact. A number of controversial, though highly topical, initiatives were denied registration; besides the ECI is not the instrument to use when an urgent problem arises that needs fast mobilization of supporters. One should not forget that participation is most meaningful when the stakes are high.

The literature on this issue is divided between proponents of high potential and benefits of open government and the sceptics highlighting the lack of evidence and the inconsistencies in the discourse. In terms of the intended impact of participation in open government projects e-participation and open innovation theories provide very different ideals. The goal of e-participation, in simple terms, is achieving more democracy; e.g. one of the most widely used e-participation evaluation models (Millard et al., 2009) views the “ultimate impact” of e-participation initiatives as expressed in societal objectives and public values to which successful e-participation should contribute. In practice however achieving such objectives is difficult. They are difficult to measure or articulate; e.g. a review of EU e-participation projects (Tambouris et al., 2012) found that it was difficult for project owners to provide tangible, measureable benefits of e-participation. Furthermore, the use of e-participation has so far been restrictive more often than not (ibid) and not too ambitious in terms of societal goals. For instance, the European E-participation Report (Millard et al., 2009), the study of 255 e-participation initiatives in Europe, found that the most common benefit of these initiatives was better information provision and information exchange between stakeholders followed by greater transparency and accountability. In the view of e-participation stage models, information provision and two-way interaction correspond to most basic levels.

From the point of reference of open innovation theory, the goal of engaging external sources of knowledge (such as experts, entrepreneurs, or citizens) in an innovation process is to enable more novel and efficient solution of problems. Overall, the intended impact of open innovation in the public sector is to transform value creation and service delivery (Feller
et al., 2011). Hence, the goal of engaging citizens and other non-state actors is aimed at improving public services and adding public value such as increased trust in government. As far as practice is concerned, according to a study providing an outlook on the progress of leading countries (Lee et al., 2012), most governments find themselves at the early stages of adoption of open innovation and are in the process of understanding relevant issues. As already mentioned, the complexity of the situation lies not only in the fact that achieving high-impact results of open public innovation is challenging; but also in the fact that measuring any progress or advancement towards these goals is as difficult. Similar to the levels of e-participation evaluation (Millard et al., 2009), private sector innovation literature distinguishing between “outputs” (quantity and quality of products) and “outcomes” (values) of innovation activities (Davila, Epstein, & Shelton, 2012). A review of studies on citizen participation in the co-creation of public services (Voorberg, Bekkers, & Tummers, 2013) found that there is not much systematic empirically gained data about the outcomes of co-creation. There is a tendency to consider co-creation a virtue in itself (ibid), meaning that just the emergence of citizen participation in public service delivery processes is sufficient to strive for.

In sum, the meta-challenge of achieving high-impact results using participation in open data, open decision, or open service processes is an overarching problem that calls for a debate and long-term action.
6. Conclusions

The overall research question of this thesis was: *What are the challenges to implementation of participation in the open government perspective?* That is, the focus of my research was on the practices of implementation of tools for participation in the context of open government and the challenges on the way faced by public organizations.

The empirical basis of this thesis consists of two participation cases: the European Citizens’ Initiative (ECI) and open data programs in Sweden and the Netherlands. Both cases are examples of participation of citizens and other non-state actors in the innovation of public policies or services. The ECI, as an agenda-setting procedure, represents the open decisions dimension of open government; whereas the open data case refers to the open data and open services dimensions of open government (see Figure 5 in section 5.1). The participation in both cases is mediated by the use of an IT artefact such as a signature collection system or open data repositories. Hence, this research has focused on the process of putting these artefacts to use and the challenges associated with that.

The research was based on five studies, two theoretical and three empirical, which contributed to the overall thesis in a different way. Study 1 (a literature review) outlined the key aspects of e-participation research, the domain most closely associated with the study of participation using ICTs. Study 2 (a conceptual study of the ECI) provided a normative scenario of participation in the first case; whereas Study 3 (an empirical study of the ECI) turned to practice and identified political, technical, and organizational challenges in the implementation of participation using the ECI. Study 4 (a comparative case study of open data) focused on the challenges pertaining to the second case and identified the measures to stimulate the participation of users in the open data process. Study 5 (a survey of open data users) established the driving factors of participation in the open data process and discussed the implications thereof for public managers implementing open data.

The main conclusions from this research are summarized below. The following sections further describe the contributions and limitations of this research and suggested future research directions.

### 6.1 Summary of conclusions

The studies of the two participation cases – the ECI and open data – provided an analysis of the challenges which public organizations face in the
implementation of these projects. The lessons learnt in these studies can be relevant to other participation initiatives in the open government family.

In this thesis I adopted a three-dimensional view of participation in open government: (1) participation in open data; (2) participation in open decisions; and (3) participation in open services (see Figure 5). The studies of the ECI (Study 2 and 3) fall in the second category, the studies of open data (Study 4 and 5) refer to the first and third categories.

Based on the studies of open data in this thesis, the following challenges are incidental to the implementation of participation in open data:

- Lack of insight about who should, is able, and does use open data;
- Coping with “data divide” and promoting inclusion in open data use;
- Connecting supply with demand when publishing open data;
- Incentivizing the use of data for solving real-life problems;
- Integrating data-driven content into government decisions.

As evidenced by the studies of the European Citizens’ Initiative, the challenges inherent to the implementation of participation in open decisions include:

- Meeting the high expectations of citizens used to the ease and simplicity of social networking;
- Ensuring inclusion and equal “rules of the game” for all interested users;
- Integrating citizens’ input, in an adequate and proportionate manner, into government decisions.

Finally, the following challenges are related to the implementation of participation in open services, as ascertained by the studies of open data:

- Connecting supply with demand when publishing open data;
- Expediting the learning curve and providing reliable high-quality data supply and maintenance;
- Moving beyond one-off experiments with open data into more sustainable partnerships;
- Integrating data-driven services into government operations.
Since similarities can be found between these listed challenges, they have been summarized into four “meta-challenges” which characterize implementation of participation in open government in general:

1. Integration of input (citizens’ input, data-driven content, data-driven services) in government decisions and operations (section 5.1.1);
2. Inclusion and lowering thresholds for active participation (section 5.1.2);
3. Matching supply with demand in the provision of content and services for participation (section 5.1.3);
4. High-impact results of participation by means of solving real life societal problems (section 5.1.4).

In sum, open government as a new perspective on digital government is a complex multifaceted concept; its constituent dimensions originate from different practice and theory streams – transparency, e-democracy, and technology and innovation. The challenges identified in this research reflect this complexity, as none of them applies exclusively to one of these streams. In particular, as the Discussion explains, these challenges pertain to both e-democracy/e-participation and to (open) innovation domains. Thus, it is likely that the solutions to these challenges should stem from both democratic norms (assuming transparency is a democratic norm) and best practices of public sector innovation. In other words, participation should become more innovative and public sector innovation should become more participatory.

It is worth noticing that the identified meta-challenges are all rather well-known to the digital government community; similar problems are consistently being reported in e-participation, social innovation, co-creation projects and the like (as detailed in the Discussion). This knowledge however is new to the open government community, as due to the novelty of the idea few empirically gained insights exist about the challenges ahead. The fact that this research found no brand new challenges prompts to speculate whether open government is just another new buzzword to disguise recurring problems. On a more sober note, these meta-challenges (hence the meta-prefix for higher level of abstraction) are unlikely to ever be overcome completely regardless of the dominating
course or policy. Rather open government, as a new paradigm of digital government, can offer new means to solve these meta-challenges.

6.2 Contributions

This research was dedicated to the problem of participation in open government; it is a topical yet unexplored issue. Few studies are available that specifically focus on participation (or collaboration) in the open government context. It is worth highlighting the work of those who, from different standpoints, have contributed findings and awareness about the role, complexities, risks, and value of participation in open government (Evans & Campos, 2013; Kuhn, 2014; Linders, 2012a; Nam, 2011; Ruesch et al., 2012). Specifically concerning the challenges to implementation of participation, I would like to bring forward the work of Evans & Campos (2013), describing constraints to citizen participation in open government; of Lukensmeyer et al. (2011), evaluating progress in the participation dimension of US open government; and of von Lucke & Große (2014), describing challenges to open government collaboration. In this thesis I add on these examples of prior research by providing an integrated perspective on participation (citizen engagement and collaboration with non-state actors) and the challenges to implementing its different types, thereby uniting previously separate strands of knowledge.

In order to evaluate the contribution of a piece of research two criteria are commonly used in organization studies (Corley & Gioia, 2011) – originality and utility. Originality stands for an advance in our understanding of a phenomenon; whereas utility represents the potential of research to improve current practice of scholars or practitioners (ibid). In terms of the originality criterion, this thesis has advanced our understanding of open government in general and its participation pillar in particular. The issue of participation has received much less attention in open government literature than the issue of transparency achieved through open data (Evans & Campos, 2013; Lukensmeyer et al., 2011; Meijer et al., 2012). Therefore this thesis contributes to narrowing down this research gap.

As concerns the utility criterion, this research provides insights about the challenges associated with the implementation of participation which is an issue of high societal relevance. Prior practice of e-participation and e-government has provided mixed results and a good portion of failures; therefore understanding the challenges and ways forward is essential for making progress and learning from mistakes. Figure 5 in section 5.1 lists the challenges in need of attention of open government practitioners; rec-
ognizing these challenges can contribute to more successful participation projects. The individual studies in this thesis provide more detailed guidance on the potential solutions and recommendations to overcome the challenges based on a particular type of participation in question.

More specifically concerning the contribution to theory, this thesis aimed at providing an integrated perspective on participation in open government by applying a number of different theories to study participation. E-participation and open innovation theories (as well as open data theory) may be seen as the central building blocks of this research (see Figure 1). The contribution in respect of e-participation and open innovation theories lies in applying these theories in a different setting than the original one and learning something new about them (Whetten, 1989). In general open government is still an evolving field of research (Wirtz & Birkmeyer, 2015); the development of theories specific to this domain is in the nascent state. Therefore applying more established theories from related domains to the study of open government can strengthen the field. E-participation and open innovation present the notion of participation in different ways, and when applied together in the context of open government they yield a more comprehensive perspective on participation. In terms of what was learnt by using these theories, in this thesis and its constituent studies I have contributed to extending the scope of application of these theories. For example, Study 5 uses user innovation theory to analyse open government data adoption; limited research has to date applied the open innovation approach (originating from the private sector) in the analysis of public sector problems and issues. Similarly, e-participation theory has so far been limited to the domain of political decision-making; Study 3 extends the notion of participation to engagement in service design and development and presents it as collaboration. Furthermore, I have applied insights from both e-participation and open innovation theories to the analysis of the challenges which I identified in my studies (see Discussion). As a result, this thesis has paved the way to bridge e-participation theory and open innovation practice; to date few studies (Cleland et al., 2012) have attempted to do so. With respect to open data theory, Studies 4 and 5 contributed to theory building in this domain, as they introduced frameworks for describing and analysing open data adoption and participation (framework of user engagement strategies in Study 4 and model of driving factors of open data adoption in Study 5). Last but not least, this thesis helped improve the conceptual rigor of participation as a notion,
further specified it, and enhanced its potential to be operationalized (for instance, as presented in Figure 5).

6.3 Limitations and future research

The limitations of this research have to do with the scope and choice of method. The main method used in this research was a case study; a single case study of one case and a comparative case study of another. Perhaps the main weakness of this method consists in the difficulties in generalizing research results. The thinking which emerges from case studies should rather be perceived as a “provisional truth” which can be transposed to other contexts and settings until an alternative one emerges (Hodkinson & Hodkinson, 2001).

Thus, Study 3 investigated a European e-participation project, a very large-scale and ambitious initiative to enable more direct engagement in EU policy-making. Hence, lessons from the ECI will be most suitable to other participation initiatives which are large-scale and include high expectations. The limitation as to this case is that the studies were not longitudinal and only allowed a snapshot of implementation challenges at the start of the project. Future research is encouraged to investigate the ECI throughout its lifetime to explore the dynamics of participation, organizational learning experiences, project management decisions, value and adoption of supportive ICTs (like the ECI app). Besides, the study of the ECI in this thesis was conducted as an in-depth single case study; comparing the ECI with other similar initiatives might have yielded other interesting insights.

As concerns the open data studies (multiple case study and a survey), they approached the open data phenomenon from different standpoints; the common ground, however, is that both studies looked at the Swedish and Dutch contexts. Study 4 investigated open data initiatives that are not national, i.e. in organizations that have limited resources or experience when it comes to either data publication (e.g. local governments) or democratic participation (e.g. statistics agencies). This means the findings and recommendations will be most suitable for this type of public organizations. The limitations of this study, however, is that it focused on two countries which are ranked high in data publication but offer limited evidence of data adoption and impacts (compared to the UK or the US). That is, my research identified a number of legitimate challenges but did not seek to systematize the cutting-edge practices from more advanced countries such as the aforementioned in order to address these challenges. One
direction for future research would be to evaluate the effectiveness and transferability of such practices to other country contexts.

The survey study was explorative and consequently offered propositions supported by qualitative analysis of survey data about the adoption of open data by businesses. This study offered a number of interesting insights and was the first of its kind to examine motivation for data-driven innovation specifically. The findings of the survey can be applied to open data initiatives at various levels, however it is particularly focused at service innovation based on open data and hence does not include societal applications of data (like visualizations, journalism, data-driven decision-making etc.). It is worth mentioning that, since open data is a new development, finding large-scale data about open data use is difficult. Future research is encouraged to test the model and the propositions from the study in other empirical situations and on a more diverse and larger group of respondents. It could also be of interest to examine how the model performs in different cultural contexts and whether the driving factors and results of data-driven innovation vary depending on a country.
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Enablers of open data innovation in Sweden and the Netherlands

Dear participant,

The aim of this questionnaire is to establish the necessary prerequisites, or enablers, of OPEN DATA INNOVATIONS. By open data innovations we mean the development of a new or improved product/service/process using OPEN GOVERNMENT DATA for end-users, other businesses, or government organizations. If your company (or you as an entrepreneur) has developed an open data innovation (or tried to do so), we kindly invite you to share your experiences in this questionnaire. This questionnaire is only relevant for Swedish and Dutch COMPANIES/ENTREPRENEURS.

It will take you about 15-20 minutes to fill in the form, it consists of 34 questions. The information provided by you is treated in a confidential way, you can choose to leave your personal details anonymous.

Your input will help us understand what needs to be done in the open government data domain to support businesses and entrepreneurs to implement their innovative ideas. Many thanks in advance for joining in to answer the questions!

* Required

1. What is your name? (optional)

2. What is your current job title? *

3. Which country is your company based in? *

   Mark only one oval.

   ○ Sweden
   ○ Netherlands

A1: Demographics

4. 1. What is the name of your company? *

5. 2. What is the main line of business of your company? *

   ..................................................................................................................
6. 3. How many persons does your company employ on a regular basis? *
   
   Mark only one oval.

   - 1
   - 2-9
   - 10-100
   - 101-250
   - More than 250

7. 4. How many years does your company exist? *
   
   Mark only one oval.

   - Less than 1 year
   - Between 1-3 years
   - Between 3-5 years
   - More than 5 years

8. 5. How long have you been using open government data in your business? *
   
   Mark only one oval.

   - Between 0-6 months
   - Almost 1 year
   - Between 1-3 years
   - More than 3 years

9. 6. How important is open government data for the functioning of your company? *
   
   Mark only one oval.

   - We are fully dependent on it
   - We are partially dependent on it
   - We are not dependent on it at all

A2: Open data innovation
10. (If this applies to you) Which type of new or improved PRODUCT have you developed (or had an intention to) on the basis of open government data? Multiple answers allowed. Check all that apply.

- Single-purpose apps (provide a single function in real-time based on one type of open data)
- Interactive apps (in addition to single function provide end-user with an opportunity to add content)
- Information aggregators (combine different open data sources and process them for subsequent presentation to end-users)
- Comparison models (aggregate open data from different sources for comparing the performance of entities with each other)
- Open data repositories or service platforms (provide functionalities for searching, importing, cleansing, processing and visualizing data)
- Other: ........................................................................................................

11. (If this applies to you) Which type of new or improved SERVICE have you set up (or had an intention to) on the basis of open government data (e.g. business-to-business)? Multiple answers allowed. Check all that apply.

- Extracting and transforming data (search, clean, combine, manipulate)
- Analyzing data (cross-analysis, visualizations)
- Other: ........................................................................................................

12. What is the highest level you have reached in implementing into reality your innovative ideas on the use of open government data? * Multiple answers allowed. Check all that apply.

- Rough idea in mind
- Clear idea in mind
- Documented plan to implement the idea
- Prototype
- Fully implemented service/product

13. Please give an example and a short description of an innovation your company developed using open government data. *

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14. What was the degree of your personal involvement in the development of the open data innovation(s) in your company? *
At least with regards to the one you described in the previous question
Mark only one oval.

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<tbody>
<tr>
<td>Very low</td>
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15. Which source(s) of open government data did you use in developing the open data innovation(s)?
Multiple answers allowed.
Check all that apply.

- Public international/EU portals
- Public national portals
- Public regional and/or municipal portals
- Private (commercial) service platforms
- Direct requests for data
- Other: ........................................................................................................

A3: Enablers of innovation

16. Indicate the order of importance of the following factors for motivating your company to innovate with open government data.
For each factor please choose whether it is your 1st most important, 2nd most important and so on.
Mark only one oval per row.

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<tr>
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<tr>
<td>Prospect of benefits and returns</td>
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<tr>
<td>Reasonable amount of effort it takes</td>
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<tr>
<td>Personal curiosity and interest</td>
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<tr>
<td>Influence of your community</td>
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<tr>
<td>Existence of reliable infrastructure</td>
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17. Indicate the extent to which innovating with open government data adds economic value to your business. *
Mark only one oval.

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<tbody>
<tr>
<td>To no extent</td>
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</table>
18. **15. Indicate the extent to which innovating with open government data adds to the knowledge assets of your company.** *
Knowledge assets refer to the intellectual resources of a company, such as information, learning, technical skills, capabilities etc.

*Mark only one oval.*

1 2 3 4 5

To no extent ☐ ☐ ☐ ☐ ☐ To a great extent

19. **16. Indicate the extent to which innovating with open government data leverages the social capital of your company.** *
Social capital of a company refers to the degree of influence it has through its networks.

*Mark only one oval.*

1 2 3 4 5

To no extent ☐ ☐ ☐ ☐ ☐ To a great extent

20. **17. Indicate the amount of effort it takes your company to develop an open data innovation.** *

*Mark only one oval.*

1 2 3 4 5

Very little ☐ ☐ ☐ ☐ ☐ Very much

21. **18. Indicate the amount of expert knowledge and technical skills that your company requires to be able to innovate with open data.** *

*Mark only one oval.*

1 2 3 4 5

Very little ☐ ☐ ☐ ☐ ☐ Very much

22. **19. Indicate your agreement with the following statement: "My company has the resources and knowledge to develop new products and services on the basis of open government data"** *

Check all that apply.

☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree
23. **20. Indicate how time-consuming it is for your company to innovate with open government data.** *
   *Mark only one oval.*

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<tr>
<td>Not at all time-consuming</td>
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<td></td>
<td></td>
<td>Very time-consuming</td>
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24. **21. Indicate how costly it is for your company to develop new products or services based on open government data.** *
   *Mark only one oval.*

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<tr>
<td>Not at all costly</td>
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<td>Very costly</td>
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25. **22. Indicate the extent to which the business community that your company is in supports your open data innovation.** *
   *Mark only one oval.*

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<tr>
<td>To no extent</td>
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<td>To a great extent</td>
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26. **23. Indicate to which extent developing an open data innovation is a status symbol in your business community and makes your company look more competent than others.** *
   *Mark only one oval.*

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<tr>
<td>To no extent</td>
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<td>To a great extent</td>
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27. **24. Indicate the extent to which people in your social circles encourage you to develop open data innovations.** *
   *Mark only one oval.*

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<tr>
<td>To no extent</td>
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<td>To a great extent</td>
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28. **25. Indicate your agreement with the following statement: “In general in our company we look for ways to try and test new products and technologies when we hear about them”.** *
   *Check all that apply.*

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
29. **26. Indicate your agreement with the following statement: "In general in our company we are willing to accept new products and technologies even if there are no stable versions and there exist drawbacks". * 

*Check all that apply.*

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

30. **27. Indicate your agreement with the following statement: "The provider(s) of open government data set up adequate support mechanisms and provided me with the necessary resources to enable my innovation". * 

*Check all that apply.*

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

31. **28. How satisfied were you with your interaction with the data provider(s)?**

*(If you did not interact with the data provider(s), skip this question)*

*Mark only one oval.*

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<tr>
<td>Very unsatisfied</td>
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32. **29. How satisfied were you with the quality of the technical infrastructure which you used to develop your open data innovation?**

*Technical infrastructure refers to the source of datasets you used*

*Mark only one oval.*

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<tbody>
<tr>
<td>Very unsatisfied</td>
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**A4: Recommendations**

33. **30. What challenges did your company encounter during your innovation process with open government data? *  

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34. What technical improvements could the providers of open government data make to support innovators like you better?

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35. What organizational measures could the providers of open government data take to support innovators like you better?

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36. Overall did your company meet its objectives when using open government data? How and why?

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37. List two other businesses or entrepreneurs who also use open government data in an innovative way, if you know of any.

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Thank you!

We highly appreciate that you took the time to fill in this questionnaire. Please submit your responses by clicking on SUBMIT below.
38. If you wish to be notified of the results of this survey, you can leave your contact e-mail address below. Feel free to distribute the link to this questionnaire in your network!
Publications in the series Örebro Studies in Informatics
