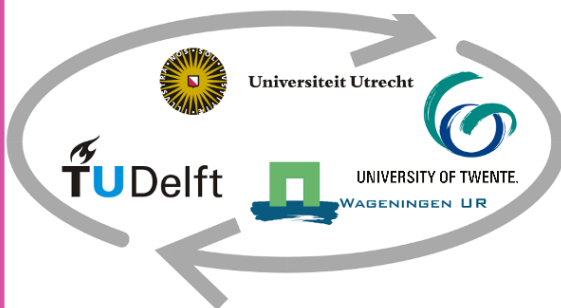# Involving third parties in the development of the "Digitaal Stelsel Omgevingswet"

MSc. Thesis – Final thesis report

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SUMMARY

The implementation of the "Omgevingswet" and its belonging "Digitaal Stelsel Omgevingswet" (DSO) is a major transformation of the current legal system of the Netherlands as well as a transformation of the current digital infrastructure of the government. The contents and functions of the DSO are expected to influence the business activities of all companies whose services and (software) products will be connected to the system. The term for these companies is third parties: those parties that build functions and applications with which they support any of the primary users.

These parties expect that their products and services will have to change, for example, due to new data structures and information models required by the DSO. Additionally, it might be necessary for these parties to create new applications or software to support their customers. These uncertainties could potentially be problematic for these companies and organizations, as it is thus not possible to properly plan for the upcoming years. This uncertainty may be caused by a lack of involvement in the implementation and development of the system, which is a well-known risk for IT projects.

The current involvement of third parties and the question of how this involvement can be improved is the main research topic of this thesis. Firstly, a literature study is carried out to construct a framework on which the current level of involvement can be identified. As a basis for this framework, the Ladder of Citizen Participation of Sherry Arnstein is used. The newly constructed framework uses literature on eGovernment and stakeholder perspectives, to create a new ladder: the ladder of third party participation.

An extensive study of DSO documentation and two in-depth interviews with DSO representatives are held to assess the applied strategy for the involvement of third parties. Consequently, this intended strategy is compared to the perceived strategy, which is assessed through in-depth interviews with five third parties. The comparison revealed that the perceived strategy of the third parties did not differ from the applied strategy of the DSO organization.

Even though the applied strategy of DSO matched the perceived strategy of third parties, third parties would like to see a change in the applied strategy. Consequently, to improve the involvement, the DSO organization could consider trying to achieve a higher level on the ladder of third party participation. However, this should be decided in cooperation with the third parties, as their desire to be involved might have a limit due to their other business activities. Furthermore, the question what the ideal degree of involvement for both sides would be may differ for every third party as their products and services interact with and connect to the DSO in different ways.

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1. INTRODUCTION

In the Netherlands, the co-existence of the multiple, different laws for the built environment leads to confusion and complex planning processes, as these laws overlap and sometimes contradict each other (Ministerie van Infrastructuur en Milieu et al., 2016a). To replace and merge the existing laws for the built environment, the Dutch Environment and Planning Act [Omgevingswet] is expected to come into force in 2021 (Rijksoverheid, n.d.). The "Omgevingswet" will be supported by a digital system, as defined in the GOAL program (Gegevensvoorziening Omgevingswet voor Activiteiten in de Leefomgeving) (Ministerie van Infrastructuur en Milieu, 2014). This system is called the "Digitaal Stelsel Omgevingswet" (DSO) (Aan de slag met de Omgevingswet, n.d. a). This system will be implemented following three official scenarios, as planned by the program DSO. The first scenario represents the minimal implementation that is lawfully required for the "Omgevingswet". In other words, it is the minimum scenario that needs to be realized to enable implementation of the Planning Act.

Scenario 2 complements the first scenario with the integration of the current services: "Ruimtelijkeplannen.nl", "Activiteitenbesluit Internet Module" (AIM), and the "Omgevingsloket Online" (OLO). The third scenario represents the desired final situation, which should be realized in 2024 (Ministerie van Infrastructuur en Milieu et al., 2016a). In 2024, all digital information related to the environment available can be found within this digital infrastructure. Furthermore, it facilitates governmental organizations, stakeholders and other parties in determining what is possible in the physical environment, for example regarding the construction of new buildings (Ministerie van Infrastructuur en Milieu et al., 2016a). In other words, anybody concerned with the physical environment could be a user of the DSO. The users access the system through a website, which is connected to a 'node' called the "Stelselknooppunt". The "Stelselknooppunt DSO" is the infrastructure that connects data providers, functionalities, Informatiehuizen, key registries et cetera through machine-to-machine interfaces (Ministerie van Infrastructuur en Milieu et al., 2016b). This system, or node, is responsible for the automatic exchange of data between information systems (Ministerie van Infrastructuur en Milieu et al., 2016c).

1.1 Problem statement

Four groups of primary users are identified within the *Visie Digitaal Stelsel Omgevingswet* (Ministerie van Infrastructuur en Milieu et al., 2016a):

- Any individual person: that is interested in relevant policies and permits for a certain location
- Initiators: citizens, companies or governments that want to initiate something in the physical environment

- Interested parties: citizens, companies or governments that feel influenced by the initiatives of another party
- 'Bevoegde gezagen': authorized supervision of the implementation of the DSO: The Dutch government, municipalities, provinces and water boards

Additionally, the category 'third parties' is mentioned. Within this category fall those parties that build functions and applications with which they support any of the primary users (Ministerie van Infrastructuur en Milieu et al., 2016a).

It is expected that these functions and applications will be influenced by the implementation of the DSO. For example, it can be expected that their data models will change when the DSO is implemented, as new data standards and architectures are introduced. Additionally, it might be necessary for these parties to create new applications or software to support their customers. These uncertainties can be problematic for these companies and organizations, as it is thus not possible to properly plan for the upcoming years.

This uncertainty may have its origin in a lack of involvement of these parties in the implementation of the DSO, which could be a missed opportunity for both parties. Lack of involvement is a known risk for IT projects and has been researched extensively over the past decades (Wallace, Keil & Rai, 2004; Nakatsu & Iacovou, 2009). Nakatsu and Iacovou (2009) state that when the user community is not involved during, and following an implementation, the result will not be accepted or used adequately. Wallace et al. (2004) recognize inadequate user involvement as important for the success of a project such as the DSO. Furthermore, the lack of (user) involvement could lead to a delay in the implementation of the DSO, as a result of miscommunication (Aven & Renn, 2010). In other words, an improved involvement strategy could lead to a further improvement of the implementation of the DSO. This is relevant due to the fact that the implementation of the DSO is already delayed and further possible problems are not desirable (Hendriksma, 2017).

Vancauwenberghe, Valeckaite, van Loenen and Welle Donker (2018) recognize the involvement of non-government actors, such as the software developers in the third party category, as one of the indicators for the openness of Spatial Data Infrastructures (SDI) (Vancauwenberghe et al., 2018). SDIs are data infrastructures that implement a framework containing geographic data, metadata, users, and tools that are interactively connected (Rajabifard & Williamson, 2001). The DSO can be seen as a spatial data infrastructure in itself while being a component of the Dutch national SDI: the *Nationale Geo-Informatie Infrastructuur* (NGII). The involvement of third parties, as external actors, can thus contribute to the openness and usability of the DSO.

The main objective of this research is to assess the current involvement of third parties in the implementation of the DSO and to gain insight into the possibilities of improving this involvement. This research goal is expressed through the following central research question:

How could the involvement of third parties in the implementation of the Dutch "Digitaal Stelsel Omgevingswet" be improved?

1.2 Research objectives

In order to achieve the main research goal and to give an answer to the central research question, several objectives are formulated. As indicated in the problem statement, a possible lack of involvement of the third party category might be a missed opportunity for the DSO.

- Objective 1: To design a framework to identify steps of involvement of third parties in digital government projects. In order to do so, a literature study will be conducted to explore what research has already been performed on involving external parties in such projects. The literature study results in the construction of a new theoretical framework that can be applied to this research. Additionally, a review of DSO documentation written by its organizing parties will be included.

- Objective 2: To assess the current strategy for third party involvement. The current involvement strategy is based on the input of the documentation review plus input gained from interviews held with DSO representatives.

- Objective 3: To assess the experience of third parties of the involvement strategy. The level of involvement that is previously identified is compared to the input gained from interviews with third parties. In other words, their perception of their involvement is compared to that of the DSO representatives.

Ultimately, it is assessed whether the constructed framework fits digital government projects similar to the development and implementation of the DSO. This approach will lead to an answer to the question if the framework can be applied to reality. The thesis will conclude with a discussion including a recommendation for future involvement of the third parties in the implementation of the DSO.

Figure 1.1 provides an overview of all objectives and sub-objectives that are used to achieve these research goals.

Objective 1	Objective 2	Objective 3
Design a framework to identify the stages of involvement	Assess the intended strategy for third party involvement	Assess the experience of third parties of the involvement strategy
Literature study on third party involvement	Interviews with DSO organisation	Interviews with third parties
Review of Arnstein's Ladder of citizen participation	Framework application to the results of the documentation study	Framework application to the results of the third partie interviews
Construction of new framework	DSO documentation study	Assess the fit of the constructed framework

Figure 1.1: Research design

The general research approach for this thesis uses a qualitative research method. Conducting qualitative research is a suitable method for research that focuses on the nature, value or characteristics of a topic (Hesse-Biber & Leavy, 2006). In other words, qualitative research is suitable for this thesis as it is an exploratory study. Furthermore, qualitative research is suitable for research that focusses on developments in the future that can still be influenced by unknown factors (Boeije, 't Hart & Hox, 2009), which is the case for the implementation of the DSO. Another clear reason to use qualitative research methods for this thesis is that the central research question has a qualitative nature, and thus it is answered by using qualitative data. Several tools and methods exist to acquire this data (Boeije et al., 2009), of which some will be applied in this thesis.

1.3 Research limitations

This research is the final thesis for the master's program Geographic Information Management and Applications. The time that is scheduled for this research is six months, which limits the scope of the thesis. Therefore, some decisions have been made regarding what is included and what is not.

Firstly, the scope of this thesis is limited to the involvement of third parties in the implementation of the DSO. These third parties are, as defined previously, companies or organizations that build functions and applications with which they support any of the primary users of the DSO. These parties work in the field of geospatial technology, which is defined in the context of this thesis as 'the range of modern tools contributing to the geographic mapping and analysis of the Earth and human societies' (American Association for the Advancement of Science, 2018). According to this term, all companies and organizations that use tools for geographic mapping and analysis would be included in the geospatial technology sector. However, the focus within this thesis lies on those companies and organization support the primary users of the DSO, which are mainly software development companies and engineering companies.

Secondly, this research is conducted in the second half of 2018 and will be finished at the beginning of 2019. Meanwhile, the DSO is still being developed and will not be implemented until at least the

year 2024 (Ministerie van Infrastructuur en Milieu et al., 2016a). The DSO is, therefore, a system of which the contents and functions can still be changed over the coming years, which leads to the question whether the same research would produce the same results if it is conducted again in five years. The results of this research are, therefore, not generalizable and not (completely) replicable.

1.4 Relevance

The implementation of the "Omgevingswet" is a major transformation of the current legal system of the Netherlands. The implementation is made more complex because the corresponding DSO also leads to a major transformation, namely of the current digital infrastructure of the government (Ministerie van Infrastructuur en Milieu et al., 2014). As this thesis focuses on the involvement of one specific group of users of the DSO, the third parties, it is relevant to perform a literature review on stakeholder involvement in this type of digital infrastructure transformation. Vice versa, the complexity and depth of this topic provide an interesting angle for the existing theoretical framework. Therefore, from an academic perspective, this thesis contributes to the theoretical context that can be used for research that focuses on stakeholder involvement in digital infrastructure transformation that takes place in a governmental context.

This thesis aims to provide guidance to improve the cooperation between the organizing parties of the DSO and third parties, which is the main societal contribution of this research. Additionally, the detailed overview of the contents and provided services of the DSO will contribute to the clarity of the impact of the DSO on the business activities of these third parties.

1.4.1 Audience

As stated in Paragraph 1.3, this thesis is written in the context of the master's program GIMA. Therefore, it is expected that the supervisor and reviewers of the thesis are the primary audiences. Secondly, it is expected that scholars within the field of geographic information who are interested in governmental reforms are the secondary audience. Firstly, the thesis may be a relevant read for any party involved in the development and implementation of the DSO, especially those that belong to the third party category.

1.5 Reading guide

The research of this topic contains many Dutch terms and names, of which some are not directly translatable. Therefore, the thesis will not translate all terms and names into English within the text, but remain with the Dutch version after introducing the English term the first time. All translations can be found in Appendix A.

This research report is structured in nine chapters with this introduction chapter as the first. The first chapter is followed by a documentation study that gives a first introduction of the DSO. Chapter 3

reviews research that has been conducted in the field of external participation in digital government processes, which results in a theoretical framework that is used for the identification of the current involvement strategy. The fourth chapter discusses the methodology including the research procedure and operationalization. This chapter outlines which methods are used to achieve the research objectives. The results of this thesis are divided into two chapters. In the first result chapter, the theoretical framework of Chapter 2 is compared to input from interviews and the documentation study. This chapter provides a conclusion of what the current involvement strategy is according to literature and the DSO representatives themselves. The second results chapter compares the conclusion of the previous chapter to the input received from interviews with third parties, which results in a conclusion of how the third parties perceive their involvement. The results chapters are followed by the conclusion of this thesis (Chapter 7) and a discussion of the complete research in Chapter 8. Chapter 9 discusses the research limitations and offers recommendations for future research.

2. INTRODUCTION TO THE DSO

The Ministry of the Interior is legally responsible for the organization and monitoring of the "Omgevingswet" and the "Digitaal Stelsel Omgevingswet" (Ministerie van Infrastructuur en Milieu et al., 2016c). The DSO will become a part of the *Nationale Geo-Informatie Infrastructuur* (NGII), the generic digital infrastructure of the Netherlands, which consists of several eGovernmental components, such as "DigiD" and "Mijnoverheid.nl" (Ministerie van Infrastructuur en Milieu et al., 2016a). These components will provide data and documents to the DSO, but will remain functional on their own (Ministerie van Infrastructuur en Milieu et al., 2016c).

Furthermore, the DSO will merge three existing services into one: "Ruimtelijkeplannen.nl", AIM and the OLO. "Ruimtelijkeplannen.nl" is an online portal where policies and laws can be consulted digitally. The portal allows users to search and view documents that are linked to a specific location in the Netherlands (Ruimtelijkeplannen.nl, n.d.). The "Activiteitenbesluit Internet Module" (AIM) is an online module which allows users to check whether a permit or notification is required, gain insight in environmental rules and measures and submit a notification "Activiteitenbesluit" (Ministerie van Infrastructuur en Waterstaat, n.d.). The "Omgevingsloket online" (OLO) is an online platform where companies or private individuals can check permit and notification duties, handle submissions online and follow the status of that submission (Omgevingsloket online, n.d.). The functionalities of the OLO, "Ruimtelijkeplannen.nl", and AIM will be merged into the new "Omgevingsloket", which forms the central information point of the DSO (Ministerie van Infrastructuur en Milieu et al., 2016a).

Figure 2.1 displays the general structure of the "Digitaal Stelsel Omgevingswet" (Ministerie van Infrastructuur en Milieu et al., 2016c).
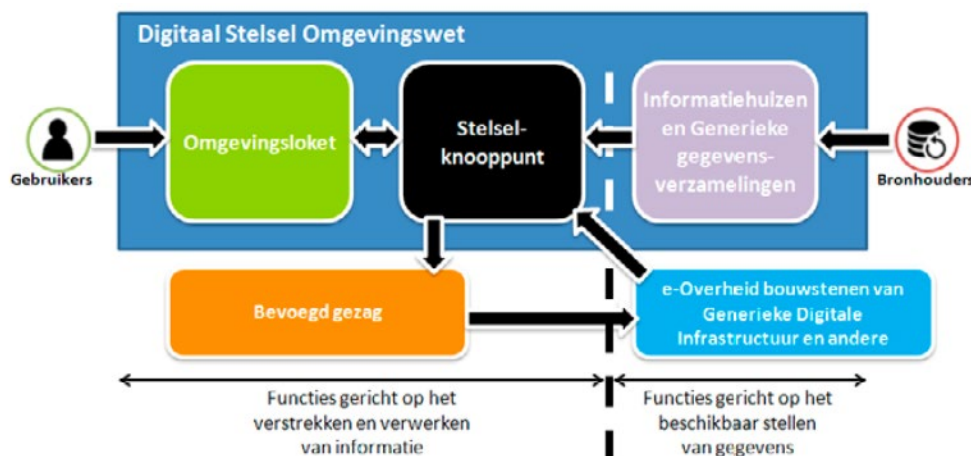

Figure 2.1: Structure of the "Digitaal Stelsel Omgevingswet" (Ministerie van Infrastructuur en Milieu et al., 2016c)

Figure 2.1 represents the flow of information from the "bronhouders" to the users [gebruikers]. On the right side of the figure, the "bronhouder" side, the source data that is implemented in the DSO is displayed. Within the DSO, the source data is transformed into information and made available by information products, which are displayed in the "Omgevingsloket" on the left side of the figure.

A "bronhouder" [data provider] is the responsible party or organization that collects and maintains the data that belong to a specific dataset or key registry. Consequently, the "bronhouder" is responsible for securing the quality of this data (Ministerie van Infrastructuur en Milieu et al., 2016c). The Dutch municipalities are the "bronhouders" for the key registries, which are the main sources of data for the DSO. Kadaster is legally tasked with the maintenance of several key registries as well as the information products that provide and publish this data: the "landelijke voorzieningen" (Kadaster, n.d.).

A total of nine "informatiehuizen" will be created within Scenario 3, one for the domains of Air, Water, Soil & Subsoil, Nature, External Security, Sound, Cultural Heritage, Space, Construction & Waste and Natural Resources. Each "informatiehuis" is responsible for the flow of information from its source to the relevant information product(s). Additionally, an "informatiehuis" is responsible for the maintenance of the information product, for the application of standards and the availability of the data as open data or open interfaces [koppelvlakken] (Ministerie van Infrastructuur en Milieu et al., 2016c). In addition to the key registries, generic datasets [generieke gegevensverzamelingen] are offered by the DSO. These datasets are used by multiple "informatiehuizen" (Ministerie van Infrastructuur en Milieu et al., 2016a).

The "Stelselknooppunt DSO" is the infrastructure that connects data providers, functionalities, "Informatiehuizen", key registries etc. through machine-to-machine interfaces (Ministerie van Infrastructuur en Milieu et al., 2016b). This system or 'node' is responsible for the automatic exchange of data between information systems (Ministerie van Infrastructuur en Milieu et al., 2016c).

The "bevoegd gezag" is a representative authority of the implementation of the DSO, which are in this case the municipalities, waterboards, provinces and ministries (Ministerie van Infrastructuur en Milieu et al., 2016c). Within the "bevoegde gezagen", a division can be made between two categories: policymakers and enforcers/supervisors of these policies (Ministerie van Infrastructuur en Milieu et al., 2016a).

2.1 Governance

The "Omgevingswet" itself requires not only a digital transition of the current services into a new infrastructural system but also a legal transition. Each "bevoegd gezag" is responsible to set up either one "Omgevingsvisie" and one "Omgevingsverordening', one "Waterschapsverordening" or

one "Omgevingsplan" for their area (Ministerie van Infrastructuur en Milieu et al., 2016a). These "Omgevingsdocumenten" are collected in the "Register Omgevingsdocumenten" (ROD) and provided to the DSO as information sources (Ministerie van Infrastructuur en Milieu et al., 2016c).

The governance of the DSO is the legal responsibility of the program organization: the ministries, "Interprovinciaal Overleg" (IPO), the association for Dutch municipalities (VNG) and the union of waterboards (UvW) (Ministerie van Infrastructuur en Milieu et al., 2016a). Rijkswaterstaat was tasked by the Ministry of Infrastructure and Environment with the management of the transition and the implementation of the digital services that come with the Omgevingswet (Ministerie van Infrastructuur en Milieu et al., 2015). The "Omgevingswet" is since the 26th of October 2017 the responsibility of the Ministry of the Interior [Ministerie van Binnenlandse Zaken en Koninkrijksrelaties] (VNG, 2018a).

2.1.1 The program "Aan de slag met de Omgevingswet"

The program "Aan de slag met de Omgevingswet" is created by the Ministry of the Interior to support the implementation of the "Omgevingswet" and the DSO. It is a partnership between the Dutch municipalities, provinces, waterboards and the government. The program focuses on the user-centric perspective of the DSO and e.g. offers users the possibility to contribute to the development and implementation by organizing strategy sessions, called "Slagsessies", which users from governments, companies, and civil society can join (Aan de slag met de Omgevingswet, n.d. b).

2.1.2 "Samen Organiseren"

The Dutch municipalities are responsible for the collective development of functionalities that connect their systems and services with those of the DSO. The VNG and "VNG Realisatie", a supporting component of the organization, want to realize an increase and improvement of this trend of collective development by reviewing the municipal architecture (GEMMA), processes, standards, and adjustments of IT systems. These activities belong to the movement "Samen Organiseren" [organizing together] (VNG, 2017a). The municipal services [voorzieningen] are developed using the Common Ground principles. Common Ground is a structural change to the existing infrastructure through a bottom-up development process that is planned to modernize the municipal infrastructure (VNG, 2017b).

2.1.3 The agile software development method

On the 1st of January 2017, the program DSO started using the agile method instead of the waterfall method for planning the development and implementation (Aan de slag met de Omgevingswet, 2017). The agile method divides the planning into short cycles, where the end of each cycle, or iteration, is used to present intermediate results. This way, the results can be checked frequently

with the requirements to make sure the development will reach the preferred targets. In other words, iterative methods allow for formal re-planning of a project during execution (Cohen, Lindvall & Costa, 2004). Another reason why the program DSO has chosen to use the agile method is that it focuses on the needs of the user (Aan de slag met de Omgevingswet, 2017).

2.2 DSO stakeholders

The stakeholders of the DSO are divided into two categories: users and suppliers. The category users can be divided into end users and third parties (Ministerie van Infrastructuur en Milieu et al., 2016c). The expected 'end users' are divided into four groups:

- Any individual person: that is interested in relevant policies for a certain location
- Initiators: citizens, companies or levels of government that want to initiate something in the physical environment
- Interested parties: citizens, companies or levels of government that feel influenced by the initiatives of another party
- "Bevoegd gezag": the government, provinces, waterboards and municipalities

The following suppliers for the DSO are identified:

- "Bronhouders"
- Key registry administrators
- Administrators generic data sets
- "Informatiehuizen"
- Caretakers [zorgdragers]

Caretakers are the administrative bodies that are legally tasked with monitoring the archives (Ministerie van Infrastructuur en Milieu et al., 2016c). All data that are included in the DSO are obliged to comply with the "Archiefplicht" [archive duty], which dictates that information should be sustainably available. In other words, the data provided by the DSO should be kept available for future use. The second requirement of all data is that it must be location-oriented, dynamic and it must support three-dimensional properties (Ministerie van Infrastructuur en Milieu et al., 2016a).

In addition to the "informatiehuizen", generic datasets, key registries, and the "Omgevingsdocumenten", two more important information sources exist that contribute to the contents of the DSO: the applicable rules [toepasbare regels] and the permit and notification services. The applicable rules are used for the question trees that are implemented in the DSO. The applicable rules are supplied by either the program "Aan de slag met de Omgevingswet" or by a bevoegd gezag. The provinces, waterboards, and municipalities are obliged to translate local rules into applicable rules for the DSO. The program "Aan de slag met de Omgevingswet" transforms the

national rules to applicable rules. Other parties that want to connect their system to the question trees of the DSO can use the so-called "koppelvlakken" [interfaces]. The permit requests that are submitted through the DSO are saved temporarily in the service "gegevensvoorziening omgevingsvergunningsaanvragen en meldingen". After submission, the request is offered to the relevant "bevoegd gezag". This "bevoegd gezag' is responsible for handling the request itself and providing the required service and data (Ministerie van Infrastructuur en Milieu et al., 2016a).

2.3 DSO services and functionalities

The core of the DSO is formed by the "landelijke voorzieningen": the DSO-LV. The DSO-LV will consist of the following components: the new "Omgevingsloket", the Register for "Omgevingsdocumenten" (ROD) and the system of applicable rules. Additionally, the DSO-LV is supported by two catalogs: a data catalog that informs the user of the data that is available through the DSO and a catalog that provides an overview of the services that are offered by the DSO, the service catalog. Together, these two catalogs form the "Stelselcatalogus Omgevingswet" (SOW) [system catalogue], which is the metadata source of the DSO (Ministerie van Infrastructuur en Milieu et al., 2016b).

On a functional level, the DSO can be divided into three categories: user applications (Omgevingsloket), data exchange (Stelselknooppunt) and data supply (Ministerie van Infrastructuur en Milieu et al., 2016c). Figure 2.2 displays the schematic overview of these categories and their corresponding services (in Dutch).

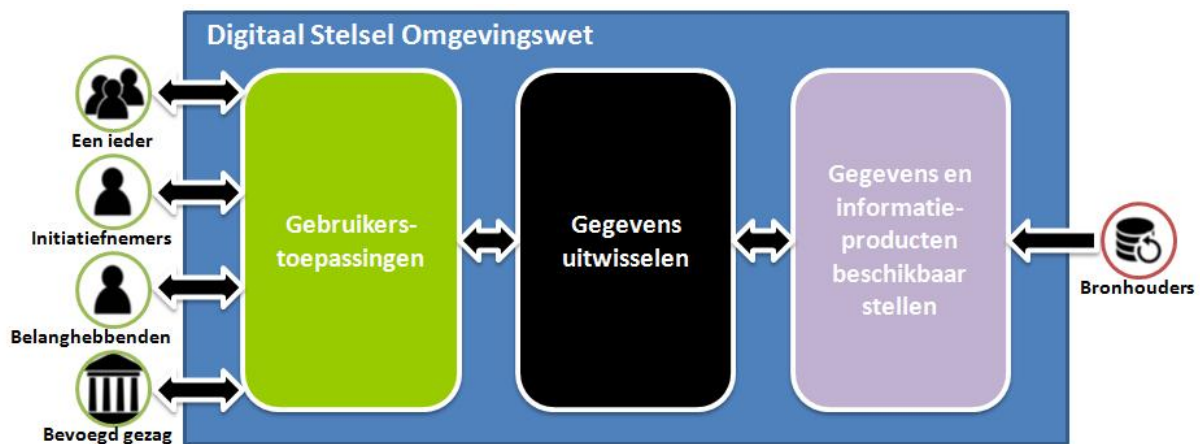*Figure 2.2: DSO components and corresponding services (Ministerie van Infrastructuur en Milieu et al., 2016c)*

Functionalities that already exist in one of the other eGovernment components, such as "DigiD" or "Mijnoverheid.nl", are not developed as separate functionalities for the DSO. Instead, a connection to these components is offered by the DSO (Ministerie van Infrastructuur en Milieu et al., 2016b).

Furthermore, third parties or other stakeholders will be able to develop more advanced functionalities and connect to the DSO through the so-called "open stelsel" [open system] (Ministerie van Infrastructuur en Milieu et al., 2016a).

The new functionalities of the user applications offered by the "Omgevingsloket" can be divided into three categories: orientation, submission and decision-making preparation (Ministerie van Infrastructuur en Milieu et al., 2016c). The orientation functionality enables users to consult the "Omgevingsdocumenten" and other information supplied by the 'bronhouders", to gain knowledge about possibilities regarding the physical environment of a certain location (Ministerie van Infrastructuur en Milieu et al., 2016c). In order to support this functionality, the correct "Omgevingsdocument" should be supplied to answer a request and the right conditions that are required for the execution of the request should be offered. The service "informatie op maat" [customized information] supports this process, by providing the right information that answers the following question: "What is allowed where"? The service provides this information adjusted to the request of the user, which should be presented in a clear overview (Ministerie van Infrastructuur en Milieu et al., 2016a). Furthermore, this information should be storable and sharable (Ministerie van Infrastructuur en Milieu et al., 2016c).

The process of orientation is supported by a second functionality, the "Regelhulp" [aid for monitoring and control] (Ministerie van Infrastructuur en Milieu et al., 2016c). This service helps the user with finding out if a certain permit is required for an activity. Furthermore, the service will offer help with the requirements for submission for these licenses (Ministerie van Infrastructuur en Milieu et al., 2016a). The "Regelhulp" uses the question trees, that are based on the applicable rules, to indicate which conditions are to be applied to a certain activity and which not (Ministerie van Infrastructuur en Milieu et al., 2016c). The third function of this process is the "Onderzoekshulp" [research aid], which provides user-friendly tools for indicating if an initiative is realizable or if further research is required prior to the realization. The function is designed to prevent unnecessary extra research and unnecessary submission conditions. Furthermore, it connects users to assessment tools that are provided by the informatiehuizen (Ministerie van Infrastructuur en Milieu et al., 2016a).

The submission process consists of the following steps: composing a request, submission of requests and notifications and sharing the submission. All information that is readily available should be filled in on the forehand, for which the inboxes of the NGII will be used (Ministerie van Infrastructuur en Milieu et al., 2016c). The information of the submission should be sharable as this provides access to other interested parties, such as "bevoegd gezagen", contractors or neighbors (Ministerie van Infrastructuur en Milieu et al., 2016c). Interested parties can object to decisions and a function will be offered to do this through the DSO. Currently, this function has not been thought

out yet and still needs to be developed in future phases (Ministerie van Infrastructuur en Milieu et al., 2016b).

2.4 "Stelselinfrastructuur"

The "Stelselinfrastructuur" includes the digital infrastructure of the DSO itself as well as structures that support the chains in which the flow of information takes place. The "Stelselinfrastructuur" enables the main infrastructural components of the DSO: the catalogs, the question trees of applicable rules, the machine-to-machine interfaces and the user applications (Ministerie van Infrastructuur en Milieu et al., 2016a).

2.4.1 Reference structures

The architectural infrastructure is based on the Dutch reference infrastructure of the government: NORA (Nederlandse Overheid Referentie Architectuur). From this governmental architecture stem the so-called NORA 'daughters': "Gemeentelijke model architectuur" (GEMMA), "Waterschaps informatie en logisch model architectuur" (WILMA), "Provinciale enterprise referentie architectuur" (PETRA) and the "enterprise architectuur Rijksdienst" (EAR). These architectures are used for respectively the municipalities, waterboards, provinces and governmental institutes. The NORA contains 10 basic principles [uitgangspunten] and 40 sub-principles (Ministerie van Infrastructuur en Milieu et al., 2016c).

2.4.2 Data standards

All levels of government are obliged to use open standards for the development of digital services that are included on a list of 'de facto' standards. Furthermore, the "bronhouders" are obliged to supply their data to the DSO conform with the official standards (Ministerie van Infrastructuur en Milieu et al., 2016a). A standard consists of documented agreements by potential users. De facto standards are standards that are widely accepted but not officially certified by an institute for standards (Bregt, n.d).

The development of standards for geo-information within the Netherlands is done by Geonovum, which is a governmental foundation (Geonovum, n.d. a). One of the reasons to use proper standards is that they increase the connectivity of data, which makes the sharing and combining of data easier. Within the DSO, several types of standards should be available, such as semantic standards. Semantic standards are used for describing the meaning or interpretation of data (Bregt, n.d.).

The team "Werkgroep Standaarden" has been tasked to develop the semantic standards that are needed for the DSO. Other types of standards that will be developed are information models for the form and coherence of data and its visualization, process standards for the sequence of activities, technical standards for indicating the way systems handle data, measuring models for measuring

and calculating, and organizational standards for example for the conditions for connecting to Informatiehuizen (Ministerie van Infrastructuur en Milieu et al., 2016b).

Two of the developed standards are the standard for official publications (STOP) and its component the "Toepassingsprofiel Omgevingsdocument" (TPOD) [application profile "Omgevingsdocument"], which are used for creating (STOP), exchanging and enabling "Omgevingsdocumenten" (STOP-TPOD) (VNG Realisatie, n.d.). TOPD describes which attributes should be connected to which textual elements, in this case, which "Omgevingsdocument". Both of these standards work accordingly to the principles of linked data: a method of publishing structured data (Aan de slag met de Omgevingswet, 2017b).

The standard for requests and notifications (STAM) describes the interface that supports the process of submitting a license request or notification. The standard belongs to the information model for requests and notifications (IMAM). The purpose of this information model and the corresponding standard is to describe the specifications of the interface enables the interaction between the user applications of the DSO and other DSO components (Aan de slag met de Omgevingswet, n.d. c)

A third important standard is the standard for applicable rules (STTR) and its information model (IMTR). All applicable rules should conform with this standard to be used in the question trees of the DSO user applications. The information model describes the definitions of the concepts and the relationships between these concepts (Aan de slag met de Omgevingswet, n.d. d).

The last important standard worth mentioning within the scope of this research is the standard uitwisselingsformat (StUF), which is used for the traffic of messages between back offices of governments. The format is based on GEMMA, the municipal reference architecture. The "Omgevingsloket Online" supports three versions of the StUF standard for the landelijke voorzieningen (LV): StUF LVO 3.05, StUF-LVO 3.11 and StUF-LVO 3.12. These versions are updated every time the "Omgevingsloket Online" is updated and therefore a new version is required for the upcoming "Omgevingsloket" that will be integrated into the DSO (Rijkswaterstaat, n.d.).

2.5 Participating in the DSO

The DSO program and the program "Aan de slag met de Omgevingswet" provide several options for interested parties to learn about the progress of the development and implementation of the DSO, which include:

- The website of the program "Aan de slag met de Omgevingswet"
- The newsletters of the program "Aan de slag met de Omgevingswet"
- The Quarterly demonstrations after each sprint
- The official documentation

Other independent parties provide information through their own newsletters, such as Geonovum or the website "Omgevingsweb". "Omgevingsweb" is an independent platform where professionals can exchange knowledge and experience concerning the physical environment (Omgevingsweb, n.d.). One of the regular topics of the website is the "Omgevingswet" and its DSO.

In addition to these examples, there are several ways in which interested parties such as (semi-) governmental organizations and companies can participate in the development or the implementation process. Table 2.1 shows different forms of meetings and pilots that are relevant for third parties.

Type of participation	Organizing party	Frequency
Geoforum	PDOK and OSGeo	Always
Developers portal "Omgevingswet"	Program "Aan de slag met de Omgevingswet"	Always
Sessions for standards	Geonovum	After the presentation of a standard
Quarterly demonstrations	Program "Aan de slag met de Omgevingswet"	Quarterly
Practical tests	VNG and a "bevoegd gezag"	Regularly
Knowledge days for IT suppliers	Program "Aan de slag met de Omgevingswet"	Regularly
Strategic Advisory Group Digitization Environmental Planning Act	Program 'Aan de slag met de Omgevingswet"	Regularly
Festival for practical tests	Program "Aan de slag met de Omgevingswet"	Yearly
ICT Market exams	Nederland ICT	Carried out when required

Table 2.1 Participation possibilities for third parties (Aan de slag met de Omgevingswet n.d., Geonovum, n.d.)

The program "Aan de slag met de Omgevingswet" also invites third parties to start experimenting with the connection between their software and the DSO by using the Developers portal "Omgevingswet" [Ontwikkelaarsportaal] (Aan de slag met de Omgevingswet, n.d. e).

3. THEORETICAL FRAMEWORK ON EXTERNAL STAKEHOLDER INVOLVEMENT

The literature that is reviewed in this chapter is used to establish a theoretical framework on the involvement of external parties in digital government processes. The Ladder of Citizen Participation constructed by Sherry Arnstein (1969) provides a basis for the framework. Additionally, literature on involvement of third parties in digital government projects will be discussed to support the adjustment of the ladder accordingly to the topic of this thesis.

3.1 Arnstein's Ladder of Citizen Participation

The concept of citizen participation was extensively researched by Sherry Arnstein in 1969. Arnstein states that citizen participation is another term for citizen power, which can be achieved by rising on the so-called "ladder of citizen participation" (Arnstein, 1969). The ladder, presented in Figure 3.1, is thus used as a metaphor for increasing access to decision-making power. It consists of three main levels: citizen power, degrees of tokenism and nonparticipation.
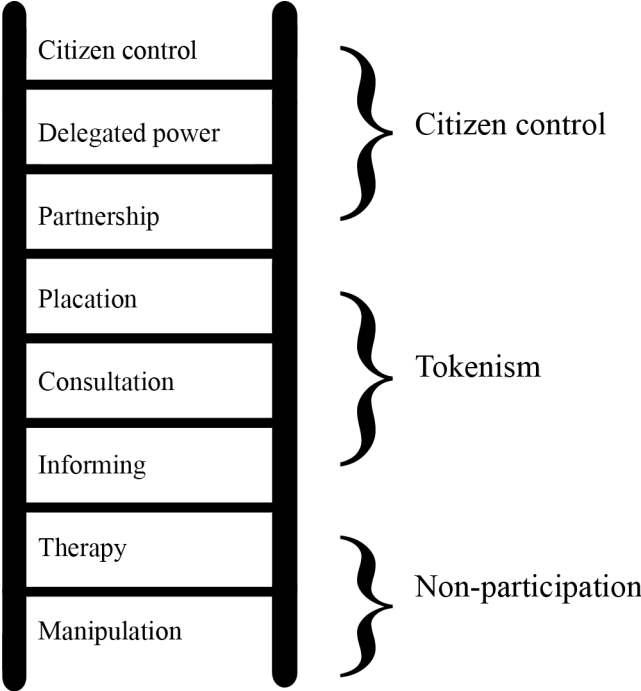
Figure 3.1: Arnstein's ladder of citizen participation (Arnstein, 1969)

The category nonparticipation consists of two sub-levels: *manipulation* and *therapy*. It represents situations where people are not enabled to participate but are 'educated' by power holders (Arnstein, 1969). In other words, citizens are not able to influence decision-making processes. An example of manipulation that Arnstein gives is when power holders ask for input on a certain

project without giving all details of the initiative. Therefore, citizens were given the idea their input was used when in fact all of the decisions had been already made (Arnstein, 1969).

Within tokenism, people are superficially or symbolically included in order to give the appearance of equality (Carpentier, 2016). This category has been divided by Arnstein into three levels: informing, consultation and placation, where the degree of communication is the main difference between these levels. The *informing* level represents, according to Arnstein, still a one-way form of communication. Examples that she mentions are publications within news or media, pamphlets, posters, and responses to inquiries. Within the *consultation* level, citizens are welcome to express their opinions on decision-making, for example through attitude surveys, neighborhood meetings, and public hearings (Arnstein, 1969). However, Arnstein warns that consultation might turn out to be only a false pretense by decision-makers to suggest influence (Arnstein, 1969). The question of whether the consultation level of participation is 'real' defines the difference between involvement and influence, as involvement indicates the inclusion of the citizen's opinions in the decision-making process and influence does not (Carpentier, 2016). Arnstein herself expresses this concern even harsher by stating that if citizens are not involved within the consultation level, they only "participate in participation". Arnstein's examples of *placation* include advisory and planning committees, where citizens can express some degree of influence but the power holders still control the decision-making process (Arnstein, 1969).

The category citizen power is again divided into three levels: partnership, delegated power, and citizen control. In the case of *partnership*, citizens share the responsibilities with the power holders through, for example, policy boards and committees where citizens are able to negotiate on their needs or wishes. Within the *delegated power* level, citizens are given the power to influence decision-making processes. This form of participation requires the power holders to bargain with the citizens. Lastly, the *citizen control* level fully empowers the position of citizens, by for example giving the citizens control of the budget (Arnstein, 1969).

Arnstein concludes that by moving up this ladder, a redistribution of power will involve citizens in government processes and will allow them to affect its outcomes. The concept of participation indicates a transition of governmental power to citizen power, which is according to Arnstein an important indicator for democracy (Arnstein, 1969).

3.1.1 Reviewing Arnstein's ladder of citizen participation

Arnstein created her ladder in 1969, since then it has often been adjusted and applied to different situations (Carpentier, 2016). Several drawbacks of the ladder have been pointed out by authors, of which the scale is the most common one. The ladder describes the type of influence that citizens have on a government process, not the degree of influence. In other words, when moving up the

ladder it does not state how much influence is gained. This is the case because the ladder has an ordinal scale, therefore, no degrees or percentages of influence can be indicated (Cornwall, 2008). Within this research, the scale will remain an ordinal scale and will not be adjusted to an interval or ratio scale to remain comparable to the ladder of Arnstein. The goal of the ladder remains the same: to identify the current level of participation or involvement and indicate which level should ideally be reached. Therefore no adjustments in the scale of the ladder are required.

A second notion that can be made about Arnstein's ladder is that it proposes a redistribution of power in favor of the citizen, which directly means that the redistribution decreases the power of the government. In other words, it proposes just one of the possible perspectives that can be imagined when managing a project. Other possible perspectives are a company perspective, a government perspective or a perspective of non-profit organizations. These are all perspectives to which the ladder of Arnstein may apply.

3.2 The stakeholder approach

The model of Arnstein focuses on citizen participation in government projects and processes, but can also inspire the participation of other groups in government projects and processes. Therefore, this paragraph introduces a stakeholders approach to broaden the scope of the ladder of Arnstein from citizens to stakeholders.

Freeman and Reed (1983) define stakeholders as 'any identifiable group or individual who can affect the achievement of an organization's objectives or who is affected by the achievement of an organization's objectives' (Freeman & Reed, 1983). In other words, the stakeholder approach divides society into groups of people that have similar interests when looking at the objectives of one specific organization. According to Arnstein, citizens represent one of these groups that have the same interest in the outcomes of a government process. In reality, citizens form clusters of groups with the same interests and are therefore the basis of different stakeholder groups rather than being one group altogether. In other words, citizens are present in each possible group of stakeholders, for example as the CEO of a company or a researcher at a university (Crane et al., 2004; Rowley, 2011). These people are citizens but also maintain different roles in society, which means that Arnstein's ladder is not individually applicable. Therefore, it is important to reframe the ladder to make it applicable to single stakeholder groups instead of all citizens together, which can give a more precise indication of stakeholder involvement in government processes.

Stakeholder involvement is recognized as one of the key principles of good governance (European Commission, 2001). Schmeer (1999) and Aven and Renn (2010) recognize that an ineffective stakeholder involvement strategy can lead to conflicts and/or delays. This may occur due to miscommunication between (too many) stakeholders, however, more often it is a result of an

ambiguous division of responsibilities. Ambiguity arises when differences exist in how individual stakeholders value input or outcomes of decision-making, thus the more stakeholders, the more differences exist (Aven & Renn, 2010; Schmeer, 1999).

The first step to achieve an effective stakeholder involvement is to conduct a stakeholder analysis to find out which stakeholder groups could have an interest in a certain government process (Ackermann & Eden, 2011). Bryson (2004) states that stakeholder analyses become more and more important for governmental reforms due to the current emphasis on participation, flexibility, and deregulation. Furthermore, Ackermann and Eden (2011) recognize that a stakeholder analysis should be carried out in relation to the goals of the organization or project as this approach would contribute the most to the strategic future of a development or project (Ackermann & Eden, 2011). In conclusion, the goal of a stakeholder analysis should be to find out how to involve these stakeholders in the best suitable way that leads to a successful outcome that is useable in practice.

3.3 Differences between eGovernment and traditional government processes

The model of Arnstein was designed for and applied to traditional, non-electronic, government processes. According to the Oxford Dictionary (n.d.), a government process is "the process of the formulation and administration of public policy usually by interaction between social groups and political institutions or between political leadership and public opinion" (Oxford Dictionary, n.d.). eGovernment is defined by Heeks (2008) as "the use of information and communication technologies (ICTs) to improve the activities of public sector organizations" (Heeks, 2008). Turban, King, Lee, and Warkentin (2002) define eGovernment similarly, but emphasize that the technologies should provide "more convenient access to government information and services" (Turban et al., 2002).

Digital government processes, or eGovernment, differ from traditional government processes. The unique characteristics of eGovernment introduced by Warkentin, Gefen, Pavlou & Rose (2002) include (a) the extensive use of communication technology, (b) the impersonal nature of the online environment, (c) the ease by which information can be collected, processed (data-mined), and used by multiple parties, and (d) the implicit uncertainty of using an open technological infrastructure for transactions (Warkentin et al., 2002).

A unique characteristic of eGovernment, in comparison to other online services, is that governments have the power to decide on the rules and regulations and thus to create a legal obligation. However, Gefen (2002) and Pavlou (2001) stress that it would be important to facilitate citizens to take advantage of these online activities, while the lack of control over government's actions would probably cause frustration (Gefen, 2000; Pavlou, 2001).

The differences to traditional government processes mentioned by Warkentin et al. (2002) support the government to achieve three targets: (1) building external interactions, (2) improving government processes and (3) connecting citizens. Figure 3.2 places these targets in the context of government processes to illustrate the focus groups per target (Heeks, 2008).
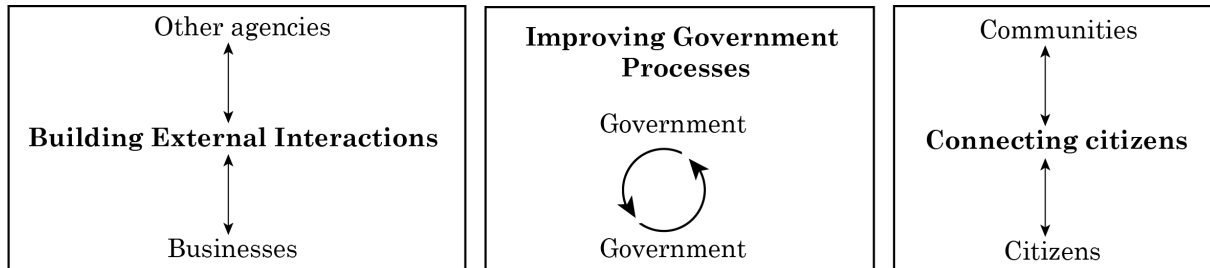

Figure 3.2: The main targets of eGovernment in the governmental context (Heeks, 2008).

The three different targets of Figure 3.2 clearly show the importance of external stakeholders in eGovernment processes, as it focuses on building external interactions with businesses and other agencies as well as on connecting citizens with communities (Heeks, 2008). Allen, Juillet, Paquet, and Roy (2001) confirm the importance of the involvement of external stakeholders in eGovernment processes, by stating that it is important to the success of the process. Furthermore, the type of involvement that leads to the success is not the same for every project, as it depends on the characteristics of the project (Morris & Hugh, 1986; Munns & Bjeirmi, 1996).

To have an indication of which type of involvement works for certain processes, this section will discuss several eGovernment projects and their strategy for involving external stakeholders.

3.3.1 The implementation of the "Basisregistratie Gebouwen en Adressen" (BAG)

The first example of an eGovernment project is the implementation of the so-called key registries; the "Basisregistraties". One of these key registries is the "Basisregistratie Gebouwen en Adressen" (BAG). The implementation of this registry is officially budgeted for 84,4 million euro, which is part of the total budget of 423 million euros (Cramer, 2008; Algemene Rekenkamer, 2014). The implementation of the BAG is generally seen as a success story, for example, because it is yearly queried approximately 5 billion times. Additionally, research conducted in 2015 showed that 87% of its respondents think that the BAG is of importance to its organization (iBestuur Online, 2018).

Coetzee, Odijk, van Loenen, Storm and Stoter (2018) have performed a stakeholder analysis of the governance framework of the BAG. External stakeholders of the BAG are for example private sector representatives such as GeoBusiness Nederland, utility companies and universities, who have, according to Coetzee et al. (2018), been able to express their needs and wishes through committees. The committees representing users and suppliers have regularly held surveys among users and suppliers to gather input. The user's feedback is channeled back to the user's committee to ensure that the input is used for improving the service (Coetzee et al., 2018).

Odijk (2018), business owner of the BAG in name of the Ministry of the Interior, states that the inclusion of external stakeholders has been of crucial importance to the success of the implementation (iBestuur Online, 2018). The use of surveys and the helpdesk to involve stakeholders have proven to be effective ways of stakeholder involvement, at least in the case of the BAG. Surveys and committees are, according to Arnstein, an indication of the consultation level (Arnstein, 1969).

3.3.2 The Electronic Tax Filing system: a pioneering eGovernment initiative in Singapore

A second example of an eGovernment project is the implementation of the Electronic Tax Filing system by the government of Singapore. The e-Filing of taxes is made compulsory by Singapore's government since 2018 for companies with a turnover of more than 10 million YA per year and will become compulsory for all companies in 2020 (Inland Revenue Authority of Singapore (IRAS), n.d.). The first version of the e-filing system was implemented in 1998, for a cost of 1.9 million dollars. The IRAS estimated that these costs are recovered if 30 percent of taxpayers submit their returns via this service over the following five years. The annual growth of online tax returns of 100% in 2005 proves the IRAS right (Tan, Pan & Lim, 2005).

Tan et al. (2005) used the Electronic Tax Filing system as a case study to explore the strategic elements of effective e-governance. The authors recognize the fact that the IRAS maintains a balance between control and collaboration regarding stakeholder involvement as a deciding factor behind the success of the initiative. Additionally, the ability to give real-time responses to questions and problems that is enabled by the internet is mentioned as a contributing factor to effective stakeholder management. 'It empowers stakeholders by being no longer constrained in the means to voice their opinions' (Tan, Pan & Lim, 2005).

3.3.3 Lessons learned from other eGovernment projects

The stakeholder involvement in the implementation of the BAG and in the implementation of the Electronic Tax Filing system proves two things. Firstly, the type of communication is important for the effective involvement of stakeholders. The system is described by Tan et al. (2005) as a two-way communication platform that connects taxpayers to the IRAS, which is according to Arnstein (1969) an indication of the *consultation* level or even higher. Secondly, the use of surveys and committees in the implementation of the BAG to process input is proven to be an effective way of listening to stakeholder's needs and wishes. The surveys and committees are also an indication of the *consultation*. Therefore, these forms of participation are suitable for the stakeholder involvement strategy of the DSO as well because they have proven to be an effective way of involving external stakeholders. In conclusion, these lessons and the eGovernment characteristics provide the theoretical basis to construct a new ladder, namely a ladder of third party participation.

3.4 Arnstein's ladder from a third party perspective

Within this research, two specific stakeholder perspectives are placed on opposite sides from one another: the public administration or government as organizer of the implementation of the DSO on the one hand and companies whose business activities will directly or indirectly be influenced by the implementation of the DSO on the other hand. The organizers of the DSO call these companies the third parties: those parties that build functions and applications with which they support any of the primary users (Ministerie van Infrastructuur en Milieu et al., 2016a).

With this relationship in mind, the ladder of Arnstein can be modified to represent the perspective of a third party. The lowest level of Arnstein's ladder is manipulation, where citizens are manipulated into believing in a government process. The manipulative attitude of the government towards third parties does not seem likely as third parties are perceived as external stakeholders only (Ministerie van Infrastructuur en Milieu et al., 2016a). Therefore, the manipulation level is left out of the ladder.

Instead, the lowest level of the ladder of third party participation is a level of non-participation, called the *confronting* level. This level represents full power of the government where the third parties are not involved. An example of this level would be a government developing legislation or project that companies are confronted with without being able to change any aspect. If the core business of these companies interacts with (the consequences of) the new legislation or project, they are forced to adapt their business activities. Moreover, it will become difficult for these companies to adapt in time if they are not involved before the completion of the project.

The second level of Arnstein's ladder, *therapy*, can be used for the new ladder. Within this level, companies are still forced to either adapt to the government's legislation or project or accept the consequences if they do not adapt. However, the government becomes more open regarding the project, for example by giving information on its scope and content. The government remains not fully transparent as they control which information becomes available, which leaves third parties with the impression they are informed to some extent but certainly not fully informed.

The difference between the therapy level and the next level is the degree of transparency of the government. The *informing* level, which is also the third level on Arnstein's ladder, indicates a fully transparent government, where all aspects of the project are presented. However, at this level, there are still no ways for the companies to offer input on the project.

Arnstein describes the *consultation* level as a form of participation where citizens are welcome to express their opinions on decision-making (Arnstein, 1969). Regarding the third parties, this form of participation can be imagined when the government recognizes that they require the expertise of third parties. One way for the government to gain access to their expertise is by asking them to be a

part of an advisory group or committee. The difference between informing and consultation is the same for both ladders: informing is a form of one-way communication and consultation offers two-way communication (Arnstein, 1969).

The consultation level is followed up by *lobbyism*. Within this level, the third parties advocate their needs and wishes to the government to try to achieve them. Lobbyism is described as the activity of trying to persuade someone in authority, usually an elected member of a government, to support laws or rules that give your organization or industry an advantage (Cambridge Dictionary, n.d.). Consequently, lobbyism can be regarded as an informal way for third parties to exert pressure on the government, which may lead to formal negotiations on equal terms.

The second last level on the ladder of third party participation is *delegated authorities*. A delegated authority is an authority obtained through a division of authority and powers, which are entrusted to a subordinate (Management Study Guide, n.d.). In other words, this form of participation would mean that an external party would be given some authority by the organizing parties as a way of forming a bridge between third parties and the DSO organization. The distance between the government and this external party is large enough for companies to regard the party as non-governmental and, therefore, regarded as a neutral party. One example of an existing delegated authority is Geonovum.

The highest level on the ladder places the third parties or the *market in control*. It is the highest level imaginable within the scope of this research, as it entirely replaces the governmental parties. Not only would the third parties be in control of the planning and management of the development and implementation, they would also have the final say in the functionalities the DSO will get and would be able to decide on the distribution of the budget.

The new ladder of third party participation can thus be designed in the following way, see Figure 3.3. Figure 3.3 displays the new ladder including its characteristics and one or more examples based on either Arnstein's examples or on related literature.

Ladder	Characteristics	Example
Market in control	Third party authority	Market controlled budget, planning and scope
Delegated authorities	Neutral party	Geonovum
Lobbyism	Informal pressure	Anonymous donations, private meetings
Consultation	Use of third party expertise, two-way communication	Surveys, (user) committees, advisory groups
Informing	Full transparancy, one-way form of communication	Inquire responses, newsletters, informative events
Therapy	Limited transparancy	Segmented documentation, incomplete information
Confronting	Non-participation	Forced business legislation/regulation

Figure 3.3: Ladder of third party participation

One noticeable difference between the ladder from a third party perspective and from a citizen perspective is that the third party ladder consists of 7 levels instead of 8 levels as in the citizen's ladder, as can be seen from Figure 3.3 and Figure 3.1 respectively.

When citizens are placed in the citizen control level on Arnstein's Ladder of Citizen Participation, they gain full control over the budget, the planning and the decision-making within the project. Consequently, the government loses control over these aspects. From a third party perspective, the companies would gain control over all aspects regarding the development and implementation of the DSO if they are placed in the market in control level, whereas the DSO organization loses this control. This process is visualized in Figure 3.3.
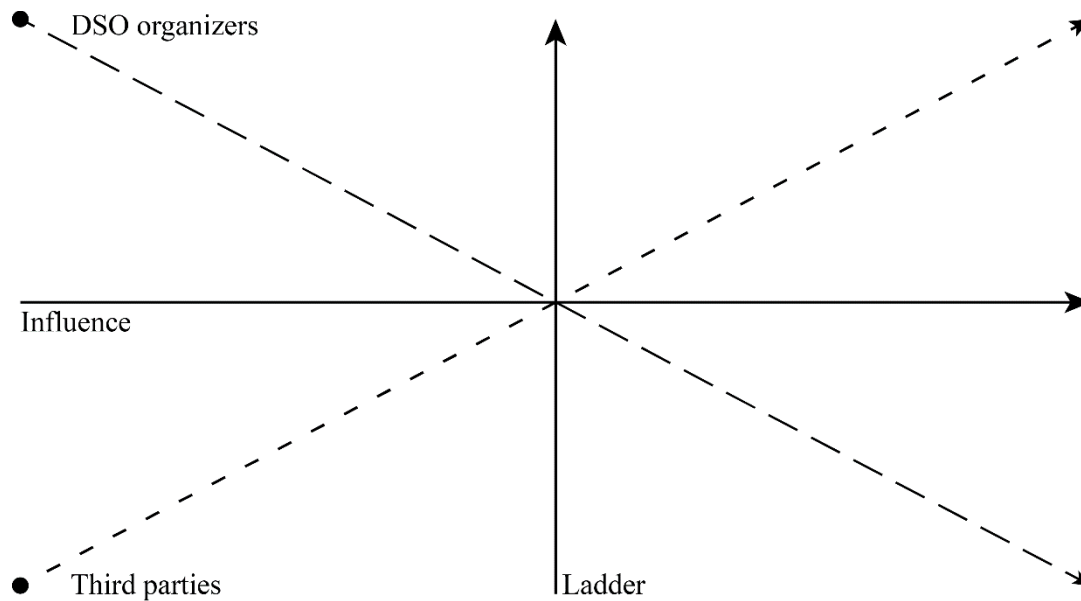
Figure 3.4: Third party power versus DSO organizer power

However, the process that is visualized in Figure 3.4 is presented as a linear relationship, whereas it might not be as linear in reality and should be seen as a simplified representation of the correlation of the steps on the ladder and influence of a third party or DSO organizer. This is due to the fact that this ladder, as well as the original one, is of an ordinal measurement scale and not of a higher scale. Furthermore, based on the figure, the question arises what the ideal degree of influence, or control, for both sides would be. From an eGovernment perspective, it is not logical that companies would gain full control over the budget and planning of a project. Furthermore, it is also not logical that companies would want to have full control, as they would be responsible for every aspect of the eGovernment project in addition to their own activities and projects.

Chapter 5 and 6 elaborate in more depth on the needs and wishes of the government and third parties active in the context of the DSO.

4. METHODOLOGY

The concepts introduced in the theoretical framework are used for the assessment of the current involvement of third parties in the implementation process and for the creation of a new framework for third party participation. This chapter contains a description of the selected research approach and methods that are used to achieve these objectives.

4.1 Literature review

The literature review is used to achieve the first objective. One of the main purposes of a literature review is, according to Randolph (2009), to 'demonstrate an author's knowledge about a particular field of study, including vocabulary, theories, key variables and phenomena, and its methods and history' (Randolph, 2009). The literature review mainly outlines different strategies for involving external parties within digital government projects. These concepts are discussed to gain methodological insights that can be used to create an ideal involvement strategy. Therefore, the literature review helps to explore the relationship between the concept, the ideal involvement strategy, and practice, how to create this strategy and how it can be implemented (Hart, 1998).

4.2 Interviews

In-depth interviews will be conducted to support the second and third objectives: assessing the applied and perceived involvement of third parties in the development and implementation of the DSO. Additionally, they will be used to assess whether the constructed theoretical framework fits digital government projects such as the development and implementation of the DSO.

Generally, interviews collect information from selected individuals to answer a pre-formulated problem statement. Two main types of interviews exist: structured interviews, where all questions are fixed prior to the interview, and open interviews, where the questions are not (all) fixed on the forehand. In this research, it has been chosen to conduct both open and structured interviews, depending on the interview candidate. The open interviews are held with the candidates that work for the organizing parties of the DSO and allow the interviewer to be flexible in dividing the time that is used per question or theme within the interview (Boeije et al., 2009).

The semi-structured interviews are held with the third parties, for which a topic list will be generated to prepare for the interviews. The topic list is used to ensure that all required topics are discussed and all interviews have the same overall structure. Furthermore, a topic list can be used to prevent (the unease of) moments of silence during the interview (Boeije et al., 2009).

Table 4.2 displays an overview of the interviews that are held during this research.

Name	Organization	Function	Date
David Bakker	Vicrea	Manager R&D and Product manager	29-01-2019
Bas Bijtelaar	Esri	Business manager central government	01-02-2019
Remco Koenders	Roxit	Product owner	21-01-2019
Hans Hainje	MUG	Head of the Geo-ICT & Geo-Info department	24-01-2019
Peter Van Den Pol	Geodan	Senior consultant	28-01-2019
Gijs Van Duijn	Programma "Aan de slag met de Omgevingswet"	"Omgevingsmanager"	31-01-2019
Bert Uffen	Programma "Digitaal Stelsel Omgevingswet"	Programmamanager "Digitaal Stelsel Omgevingswet"	07-02-2019

Table 4.2: Overview of interviews

This research is carried out within a time span of six months, therefore, it is not possible to hold interviews among all third parties that exist. The results of the interviews will be summarized and send to the advocacy organization GeoBusiness Nederland, to check if these results are in line with their experiences.

4.3 Operationalization

Two different topic lists have been constructed, one for the third party interviews and one for the DSO organization interviews. The topic lists contain questions that are based on the literature study in Chapter 3. The lists are used as a guideline to make the interviews comparable for later on in the process. Both topic lists can be found in the appendices.

The interviews are held and transcribed in Dutch. The transcripts are subsequently used to find patterns in the answers of the candidates. The resulting patterns will be interpreted, compared and then reported. This is done for every section of the interview that contains information on company characteristics and for every section that gives additional information about the role and influence of the stakeholder. Afterward, those patterns highlighting the attitudes of the interviewees towards their involvement in the implementation of the DSO are analyzed to reach a deeper understanding of their perspective. Several quotes of the interviewees will be referred to within the results chapters to support the analysis (Corbin & Strauss, 2008; Yin, 2014).

4.4 Research quality

Any research should be reliable and valid. To evaluate the reliability of research, one can review the accuracy of the used research methods and the data collection (Boeije et al., 2009). The reliability of this research is dependent on the interviews and the description of the research approach. As the

interviews are semi-structured, it is possible that if an interview is held again with the same interviewee, the acquired information and results could deviate. This influences the reliability, as well-conducted research should ideally be completely replicable (Boeije et al., 2009). However, all interviews will be recorded and transcribed and can, therefore, be consulted again at all times.

The validity of research is determined by the extent to which reality is measured and how the gathered data is interpreted. When conducting interviews, it is possible that interviewees give so-called desired answers to questions asked by the interviewer, possibly because the question is asked in such a way that it directs the interviewee to a certain answer. The interviewer should be aware of this when analyzing the results. The documentation of the analysis process and its results enhances the validity, as it increases the chance that the interviewer notices the desired answers and allows him or her to adjust the results accordingly (Boeije et al., 2009). Another way the validity of the research is guarded is by allowing each interviewee to review the results of their interview and to verify if these results correctly reflect their opinions.

5. RESULTS: the applied involvement strategy

This chapter is the first of two results chapters. Within the chapter, the current strategy for third party involvement is assessed. The current strategy is based on two types of input that was gathered during this research: the documentation study and the interviews with DSO representatives. The information gathered from the documentation study, particularly the information on governance, is used to determine the current level of involvement as introduced by the framework presented in Chapter 3. The documentation study is not only used for the current involvement as it also provides information on the future involvement of third parties within the implementation of the DSO. The resulting involvement level and involvement strategy are subsequently checked with the information that was gained by two interviews with DSO representatives.

The first paragraphs of this chapter introduce the components that will be used as input for the analysis: the relevant elements of the DSO documentation study and the interviews. The chapter begins by introducing the interview candidates and continues by discussing the information services and participation possibilities that are offered by the program "Aan de slag met de Omgevingswet".

5.1 Descriptive analysis

Both interviewees are government employees who are responsible for the development and implementation of the DSO.

Interviewee	Organization	Position	Since
Gijs van Duijn	Program Aan de slag met de Omgevingswet	Omgevingsmanager	2016
Bert Uffen	Program DSO	Program director	2017

Table 5.1: Overview of interview candidates

The interview candidates and their exact positions are presented in Table 5.1. Both interviews took place in January 2019 at the Ministry of the Interior in Den Haag. The structure of the interviews was open, which allowed the interviewee to take the time for themes that he deemed important.

Figure 5.1 provides an overview of the organizational structure of the program "Aan de slag met de Omgevingswet", in which the positions of Uffen and van Duijn can be placed.
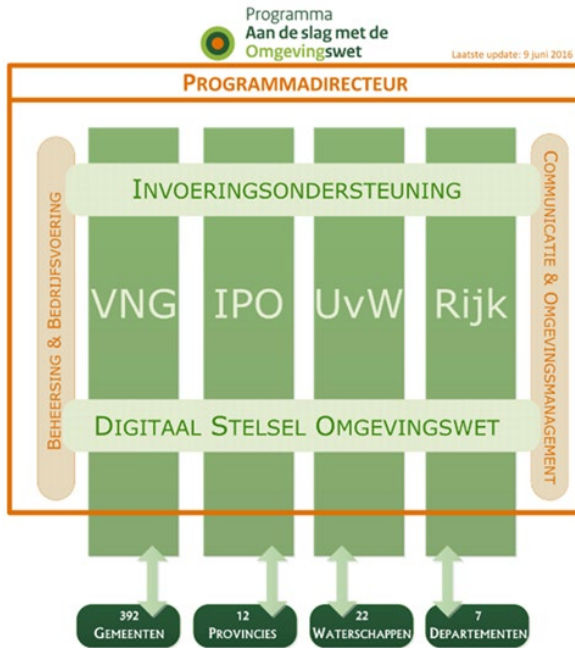
Figure 5.1: Organogram of the program "Aan de slag met de Omgevingswet" (Aan de slag met de Omgevingswet, n.d.)

Bert Uffen, as program director, can be found in the figure under the title "Programmadirecteur". As program director, he is responsible for leading those parties that develop and implement the DSO. Consequently, he and his team are in charge of delivering a system that supports the implementation of the "Omgevingswet' (Uffen, 2019).

The position of van Duijn as "Omgevingsmanager" can be found on the right side of the figure, under the section "Communicatie & Omgevingsmanagement" [Communication & Management of the environment]. Van Duijn is seconded in the program by Rijkswaterstaat, where he is part of the team "Omgevingsloket Online". Van Duijn is responsible for coordinating all activities with the associations [koepels] such as the VNG, IPO, and UvW. Additionally, he is responsible for the activities that the program organizes in the area of supplier management. In other words, van Duijn keeps the overview that all parties are working on and how these activities are related (Van Duijn, 2019).

Both Uffen and van Duijn have not been involved with the development of the DSO from the very beginning, i.e. since the introduction of the "Laan van de Leefomgeving". Uffen joined the project in the beginning of 2017, simultaneously with the start of the new agile project management style. Van Duijn has been seconded by Rijkswaterstaat in the program "Aan de slag met de Omgevingswet" in 2016. Consequently, both interviewees have not been concerned with the involvement of third parties before these periods and, therefore, could not be asked about their experience of the involvement from before their appointment.

5.2 The program "Aan de slag met de Omgevingswet"

The program "Aan de slag met de Omgevingswet" was launched in 2015, consisting of representatives of the Dutch municipalities, provinces, waterboards, and 7 national governmental departments. The goal of the program is to support the implementation of the "Omgevingswet" and the DSO, in an integral and demand-driven manner that focuses on ensuring that the end-users will be able to work well with the law. One of the ways the program attempts to centralize the user is by creating the "Strategische Klankbordgroep Digitalisering Omgevingswet" [Strategic Advisory Group Digitization Environmental Planning Act]. Within this group, users from government, business, and civil society participate (Aan de slag met de Omgevingswet, n.d. f).

5.2.1 Digital services of the program

The main information service of the program is the website aandeslagmetdeomgevingswet.nl. Through the website, the program offers news, information on various themes, an overview of events and possibilities to contact the program (Aan de slag met de Omgevingswet, n.d. a). One of its themes focuses on software developers as providers of the DSO. On this webpage, three features are highlighted: the Developers portal "Omgevingswet" [Ontwikkelaarsportaal], the Geoforum and the Knowledge days for IT suppliers [Kennisdagen voor ICT-leveranciers).

Software suppliers and developers can connect to the DSO through the Developers portal "Omgevingswet" and use its services and data within their own applications. The portal presents the APIs and services that are already developed over time as well as documentation on these APIs, data standards, interfaces and more. Furthermore, it has its own newsletter that offers different content compared to the newsletter of the program "Aan de slag met de Omgevingswet", as it is focused on software developers. Lastly, the website links to a forum where discussions about APIs and the services of the DSO are posted (Ontwikkelaarsportaal Omgevingswet, n.d.).

5.2.2 Events organized by the program

There are several different events that the program organizes in which third parties are able to participate, such as the Knowledge days for IT suppliers, the Festival of practical experiments [Praktijkfestival] and the Quarterly demonstrations [Kwartaaldemonstraties].

The Knowledge days are organized several times a year by the program for IT suppliers. These sessions provide updates on the developments of the subprojects of the DSO. Suppliers of business systems, licensing systems, control systems, and planning systems are invited to these sessions. The program emphasizes that also suppliers that are not yet business partners of the government are allowed to join these days (Aan de slag met de Omgevingswet, n.d. g).

The Festival of practical experiments is an annual event where several projects regarding the "Omgevingswet" are presented and where gained knowledge and experiences can be shared. The

most recent Festival took place in September 2018 in Den Haag, where 600 people from governments, companies and other organizations joined to discuss pilots and other practical experiences (Aan de slag met de Omgevingswet, n.d. h).

After each quarter of a year, the program presents the results of each agile sprint in a quarterly demonstration. It discusses which targets have been met and what has been experienced from practical tests (Aan de slag met de Omgevingswet, n.d. i). These demonstrations are divided into two parts: a functional demonstration that takes place in the morning and a technical demonstration that is offered in the afternoon. The attendees of the functional demonstration in the morning are largely the initiators of the DSO and representatives from the representative authorities [bevoegde gezagen] who will implement the DSO. The technical demonstrations revolve around the developing teams, which are visited by companies, such as the third parties as well. In 2019 it is intended to allow these third parties to present during the quarterly demonstrations as well. The third parties can discuss the results of the practical tests that they have performed together with the "bevoegde gezagen" (Uffen, 2019).

5.3 Other forms of participation and information services

There are several other forms of events and information services that third parties can make use of which are not provided by the program themselves. These include Practical tests [Praktijkproeven], the Geoforum, the ICT Market exams [ICT Markttoetsen] and the Geonovum sessions on standards [Standaardensessies].

The Practical tests offer a way to test if the functions and services that are developed by the developer teams work and function accordingly. IT suppliers of government organizations, third parties, play an important role in this testing phase, as their applications must connect correctly to the landelijke voorzieningen. "Bevoegde gezagen" and a third party can apply for a Practical test at the program Aan de slag met de Omgevingswet (Aan de slag met de Omgevingswet, n.d. j). According to Uffen (2019), the Practical tests are an important way in which the program seeks cooperation with the suppliers. He emphasizes, however, that the initiative of these tests lies with the gezagen and with the suppliers. The program offers technical and substantive support to these tests, but the parties are responsible for working out their cases (Uffen, 2019).

The Geoforum is provided by the Public Services on the Map (*PDOK*) [Publieke Dienst op de Kaart], a platform that offers geodata sets from Dutch governments. The platform is initiated by Kadaster, three ministerial departments, Rijkswaterstaat, and Geonovum (PDOK, n.d.). PDOK has created the Geoforum together with OSGEo.nl, a foundation for open software for geographic information (OSGeo, n.d.; Geoforum, n.d.).

Within the forum, one page centralizes the data and services of the "Omgevingswet". Between February 2018 and January 2019, a total of 22 topics have been opened that are concerned with this theme. These topics generally present a question or a problem, which are answered by 0 to a maximum of 11 people. On average a topic receives 4 answers and is viewed 422 times.

Geonovum develops the standards that are required for the implementation of the DSO. Within Geonovum, the Taskforce Standards [team Werkgroep Standaarden] has been tasked to develop the semantic standards that are needed for the DSO. When a standard has been fully developed, a technical session is organized for software developers followed by a masterclass in which the parties will get started with making XML files. Additionally, Geonovum offers a helpdesk where questions regarding the standards can be asked (Geonovum, n.d. b). The technical session is followed up by a consultation session for every party in the information chain [informatieketen]. The reactions on the consultation are evaluated and the majority is answered in an online document, available to everybody. The last consultation took place in 2018, where 662 individual reactions were received by Geonovum of which approximately 80% is answered in the online document (Geonovum, 2018). Uffen (2019) is satisfied with the way software developers are involved in the development of these standards. Van Duijn (2019) continues by stating that the government is responsible for the standards and will keep its own course in their development. Van Duijn emphasizes that the role of third parties will increase after the standards are stable and delivered, by stating the following:

> 'Of course, the suppliers provide input to the standards, but the choices are made by the involved authorities. At some point, we are moving from developing standards to implementing and then suppliers have a much more important voice because of their expertise'

Interview with Gijs van Duijn, 31-01-2019

Nederland ICT is the advocacy association of the ICT sector of the Netherlands. Nederland ICT has been asked by the program "Aan de slag met de Omgevingswet" to perform IT market tests [Markttoetsen] over the last years (Nederland ICT, n.d.). One of these tests took place in the years 2014, 2017 and 2019. In previous versions, mainly the one in 2017, third parties have expressed criticism regarding the development and implementation of the DSO. According to Uffen (2019), mainly the findability of information and documentation was criticized in 2017, however, these aspects are positively evaluated in the recent market test of 2019 (Uffen, 2019).

5.4 DSO on the ladder of third party involvement

This paragraph attempts to match the listed forms of participation to one of the levels of the ladder of third party involvement. Firstly, the participation possibilities that are organized by the program "Aan de slag met de Omgevingswet" are evaluated.

The use of an advisory group such as the Strategic Advisory Group Digitization Environmental Planning Act is, according to Arnstein, an indication of the placation level on her ladder of citizen participation. Within the ladder of third party participation, the placation level is not included. Therefore, advisory groups are an indication of the *consultation level*, as it is not a typical characteristic of lobbyism.

The Developers portal "Omgevingswet" offered by the program "Aan de slag met de Omgevingswet" is a specific form of participation. Software developers are allowed to work with products that are not developed by themselves and are unable to change these products. The one thing they are able to do is adapt their own products accordingly so that they can comply with the given product. The companies can express their thoughts and experiences based on the portal on the Geoforum, but not through the portal itself. As the portal offers transparency in the developments but does not allow its users to change anything, this form of participation is an indication of the *therapy level*. The government is transparent, however, they are transparent in certain aspects of the developments, i.e. in developments, they are satisfied with. As the government is not fully transparent, the Developers Portal "Omgevingswet" is not an indication of the informing level.

The Knowledge days are another indication of the *informing level*, as third parties are invited to learn about new developments and the general progress the government is making. The approach of the Knowledge days indicates this level, as third parties are not able to work on these developments and these days are presented as sessions where third parties can be updated on the progress. The Festival for practical experiments has a similar approach to the Knowledge days. One difference is that the invitations for the Festival go to a broader target group. Secondly, the invited parties are allowed to present results from pilots and other practical experiences. However, as the third parties are not consulted or specifically asked for feedback on this event, the participation form is not an indicator for the consultation level.

The Quarterly demonstrations do not ask third parties for their feedback or advice either, but do focus on the consequences of the developments for these parties, in the afternoon session of the demonstration. The demonstrations are, therefore, not an indication of the consultation level and are another indicator for the *informing level*.

The results of the comparisons that are made are displayed in Figure 5.2, where it can be seen that most forms of participation that are implemented by the program "Aan de slag met de

Omgevingswet" are indicators for the informing level. Only the advisory group indicates a higher level of participation, namely consultation.
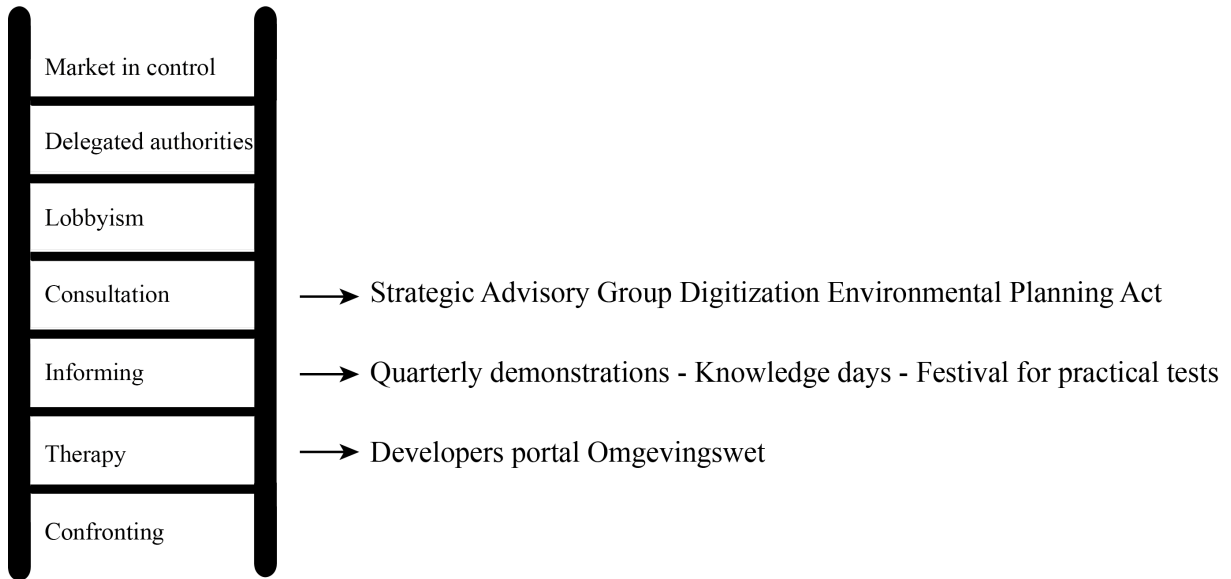

Figure 5.2: Placement of third party involvement strategy components of the program "Aan de slag met de Omgevingswet"

The participation possibilities that are not offered by the program themselves but by other parties can be placed on the ladder as well. Firstly, the Practical tests allow third parties to work with the developed functions and services and test if they are compatible with their own software. The "bevoegde gezagen" that use their software are involved in these tests to be able to make a complete evaluation of the developed features. According to van Duijn (2019) and Uffen (2019), the feedback that is delivered to the program after one of these tests has completed is highly appreciated by the program (Uffen, 2019; van Duijn, 2019). The program values the knowledge of these parties as it is very useful for the program to hear how a certain standard functions in practice; what works and what does not work (van Duijn, 2019). As the program values the feedback they receive from these tests and stimulate the tests to take place, this form of participation can be seen as an indication of the lobbyism level.

The Geoforum is an open platform where anyone is able to post new topics and respond on topics of others. The forum is provided by a government initiative and promoted by the program "Aan de slag met de Omgevingswet". However, the program does not react to the questions or issues that are brought to light on the forum. Consequently, the Geoforum does not represent an actual form of participation offered by the organization side to the third party side, however, the forum can make the third parties feel involved in and updated on the developments surrounding the DSO. Therefore, the Geoforum is placed on the *informing* level of the ladder of third party participation.

The ICT Market exams that are performed by Nederland ICT are an indication of the *consultation* level, as third parties are specifically invited to express their opinions and advice. However, as there is no direct consequence of this advice it cannot be seen as an indication of *lobbyism*. The same counts for the sessions on standards that are organized by Geonovum. Third parties, mainly software developers, are invited to share their opinions on a new standard, but it is not directly indicated that these opinions are used for future development.
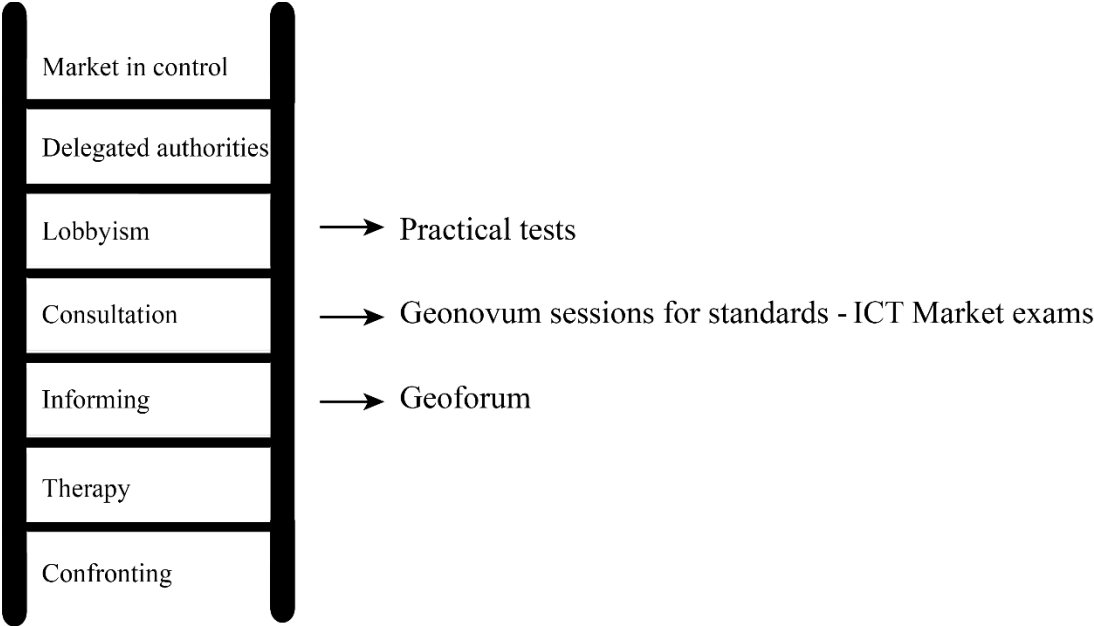
Figure 5.3: Placement of third party involvement possibilities organized by other parties

The placement of the Practical tests, Geonovum sessions and ICT Market exams can be seen in Figure 5.3. They are placed at higher levels than the participation forms in Figure 5.3. When putting these figures next to each other, it is concluded that the participation possibilities that are offered by the program "Aan de slag met de Omgevingswet" are of a lower involvement level than those offered by other parties.

6. RESULTS: the perceived involvement strategy

This chapter is the second results chapter, where the experiences and opinions of third parties of the current involvement strategy are assessed. The level of third party involvement that is identified in Chapter 5 is compared to the input gained from interviews with third parties. In other words, their perception of their involvement is compared to that of the DSO representatives.

The first paragraph of this chapter introduces the interview candidates whose opinions and experiences are used as input for the analysis. This paragraph gives a descriptive analysis of the candidates, followed by a contextual analysis in the second paragraph. The chapter ends by comparing the results of the qualitative analysis of third party involvement with the results of the previous chapter.

6.1 Descriptive analysis

Five interviews in total were held with companies whose business activities are expected to interact in one way or another with the DSO. The structure of the interview was semi-structured, which means that a topic list was used to steer the conversation. This topic list can be found in Appendix B. An overview of the interview candidates of these companies is given in Table 6.1.

Interviewee	Company	Position	Industry	Employees
Bas Bijtelaar	Esri	Business manager central government	Geospatial technology	±150
Peter van den Pol	Geodan	Business manager Slimme Leefomgeving	Geospatial technology	±180
Hans Hainje	MUG	Head of the geo department	Engineering	±120
Remco Koenders	Roxit	Product Owner Ruimte	IT	±160
David Bakker	Vicrea	Manager R&D and Product manager	Geospatial technology	±60

Table 6.1: Overview of interview candidates

Esri is the only company between these five that is not an originally Dutch company, as it originates from the United States. The other four companies are Dutch companies that have one or more establishments in the Netherlands, of which Vicrea is the smallest company in terms of number of employees (±60) and number of establishments (1).

Three of the five companies that are interviewed are part of the geospatial technology sector [geo-ICT]: Esri, Geodan and Vicrea. Roxit identifies itself as an IT company and MUG is described as a broad engineering consultancy.

All interview candidates are, in one way or another, connected to the DSO through their working activities. The connection either is made through the type of client they work with or through the kind of product or service the company delivers. Table 6.2 provides an overview of these two factors.

Company	Main clients	Main business activities
Esri	Vary from GIS professionals to organizations from the private and public sector	Developer of the ArcGIS platform
Geodan	(Semi-) governmental organizations	Offers services where data is collected, combined, visualized and analyzed
MUG	Public and private sector	Offers services within the disciplines of infrastructure, environment, archeology and geo-information and IT
Roxit	Governmental organizations, mainly municipalities	Produces software that supports processes concerning permits and notifications and the making and publishing of spatial plans
Vicrea	Governmental organizations, mainly municipalities	Produces software that facilitates the combination of administrative and geometric data from the key registries

Table 6.2: Overview the main clients and business activities of the third parties

6.2 Contextual analysis

The descriptive questions provide an introduction to the type of companies that were interviewed during this research. However, the companies will not be compared amongst each other because only five interviews were held in total. Instead, the results of these interviews will be compared to the assessment in Chapter 5. Before doing so, several topics that have been discussed within the interviews will be analyzed as they are contextually important for the comparison.

One of the main topics that were discussed within the interviews was the need for the DSO. The companies first heard of the "Laan van de Leefomgeving" in the GOAL report, of which the name was later changed into the "Digitaal Stelsel Omgevingswet". The companies support the vision that was presented in this report as the vision emphasized the importance of integrated thinking, the use of GIS and IT and the idea of 'with one click on the map'.

> 'We thought the vision of the "Laan van de Leefomgeving" was fantastic. Especially that citizens and businesses are given a lot of space to take initiative and that there is a lot of room for coordination. That the government is going to speed up the procedures and wants to make a lot more possible. And that this will all be supported by a lot of information, which can be used by initiators in a very smart way.'

> Interview with Bas Bijtelaar, 01-02-2019

Although the companies support the need for the DSO, it is also recognized that the DSO is only one of the possible answers to the current questions and issues that arise. It is expected that most of the functionalities that the DSO will offer would have been realized in any case but under a different name. Additionally, the fact that different types of data from multiple data sources can already be connected through search engines is seen as a threat to the usefulness of the DSO.

Uffen (2019) describes his relationship with the software suppliers as an indirect relationship, where the representative authorities [bevoegde gezagen] are placed between the central DSO program and the suppliers. Uffen describes his main task as bringing together the 'must, want and can'. His manager indicates what is required (the must), the "bevoegde gezagen" indicate what they want and the development partners of the DSO indicate what is possible. Ideally, the result is coordinated with the market, but Uffen does not see the market as a fourth separate player in this cooperation (Uffen, 2019).

However, the software that is developed by the development partners of the DSO needs to connect accordingly to the software of the "bevoegde gezagen". This software is made by the suppliers, which puts the third parties in an intermediary role between the DSO and its end-users. The intermediary role requires the third parties to invest in their software products and services. Some of the companies have already started making new tools or software products, while others take a more cautious approach. Not every company has a complete picture of e.g. the new information models and standards, but also the lack of clarity of the added value of new investments is mentioned as a reason not to start investing in new developments. The unclear added value of new investments is explained by the fact that some of the customers of these third parties do not have a complete picture of their needs themselves. Therefore, some third parties have decided to postpone their investments until these customers, which are mainly the "bevoegde gezagen", have prepared their business cases. When asked who should take the initiative in helping the "bevoegde gezagen" to prepare their business cases adequately, most frequently the responsibility is placed by the third parties with the Dutch Association of Local Governments (*VNG*).

The two main information services that the DSO program provides are the website of the program (aandeslagmetdeomgevingswet.nl) and its corresponding newsletter. The interviewees state that new information about decisions that are made regarding the content or the (information) structure of the DSO is not always brought out quickly. Companies often gather the new information through their own contacts or at meetings and only read about it later in newsletters or on websites. According to some companies, the newsletter of the program "Aan de slag met de Omgevingswet" is not frequent enough, which implies that it does not bring any 'new' developments to light. The website "Omgevingsweb" is considered an exception, as it is frequently updated. As for other

newsletters, most companies receive the newsletters from Geonovum and believe that the most relevant developments regarding the DSO standards are discussed there.

During the first development years, the third parties were not invited to participate in the DSO developments, to the disappointment of the companies.

> 'We were not allowed to come [to events] in the first years. As suppliers, we were not allowed. And now, for about half a year, a phase began in which the people want to have us there. A phase in which we are invited and that we are not immediately looked away. That what we have to say is interesting.'

Interview with Remco Koenders, 21-01-2019

Since 2018, the companies have noticed an improvement in the cooperation between third parties and the DSO organization. According to van Duijn (2019), this change is easily explained because the role of the market is as important during the developing of the DSO, but rather during the implementation of the system. This is due to the fact that the development is done internally, and only after a few years, the program was able to look externally and involve other parties.

Furthermore, the collaboration with GeoBusiness Netherlands is appreciated by all companies, specifically the relationship that the branch organization has with Bert Uffen.

> 'We have a good relationship with Bert (Uffen) and colleagues. They are always there for us, if we want something.'

Interview with Bas Bijtelaar, 01-02-2019

Some of the companies emphasize that there are plenty of opportunities to participate in the development and implementation of the DSO and that the initiative to take these opportunities lies with the companies themselves as well as with the DSO program.

6.3 Participation possibilities for third parties

This paragraph discusses the opinions of the interview candidates of the possibilities to participate that they are provided with. Firstly, the participation possibilities that are organized by the program Aan de slag met de Omgevingswet are evaluated.

In Chapter 5, the following possibilities of participation for third parties were identified:

1. The Developers portal "Omgevingswet"
2. Knowledge days for IT suppliers
3. The Strategic Advisory Group Digitization Environmental Planning Act
4. The Quarterly demonstrations

5. The Festival of practical experiments
6. The Practical tests
7. The ICT Market exams
8. The Geonovum sessions on standards
9. The Geoforum

This paragraph will explore the extent to which third parties took advantage of these possibilities and how they were appreciated.

1. The Developers portal "Omgevingswet"

Some of the companies have started working with the developed services and function that are provided through the Developers portal. The APIs, in particular, are used, for example by Esri, to connect the DSO to their own software platform: the ArcGIS platform. In general, the companies emphasize the importance of the generic change in which more and more DSO services are made accessible through APIs. Therefore, the use of the Developers portal "Omgevingswet" is appreciated by all third parties that were interviewed.

2. The Knowledge days for IT suppliers

The Knowledge days for IT suppliers, who supply software to the bevoegde gezagen, are visited by all of the companies, mainly to keep track of new developments. As these days are organized only a few times per year, the companies do not feel as if these are the main moments for them to hear new information on these developments. The Knowledge days generally consist of a one-way flow of communication, from the DSO representatives to the IT suppliers.

3. The Strategic Advisory Group Digitization Environmental Planning Act

The members of the Strategic Advisory Group Digitization Environmental Planning Act are not employees of one of the companies that have been interviewed and, therefore, could not have been asked about their experience of this type of participation.

4. The Quarterly demonstrations

The Quarterly demonstrations of DSO are among the participation possibilities for third parties that were frequently mentioned in the interviews. The agile way of working is praised by the companies, also the fact that they may be present at the quarterly demonstrations is appreciated. A number of companies indicate that they would like it if they could also participate in the period between the demonstrations.

5. The Festival for practical experiments

The Festival is seen by the program "Aan de slag met de Omgevingswet" as an event where gained knowledge and experiences of DSO can be shared. According to the program, this event is visited by different types of government but also by companies. However, the interview candidates have not mentioned the Festival when asked about their possibilities to participate. Therefore, the relevance of the event for third parties might be questionable.

6. The Practical tests

According to the companies, the Practical tests are a good way to test whether the functionalities and services of the DSO function correctly. The tests offer more room for discussion and the participants feel as if their input makes a positive contribution. Furthermore, the tests are seen as a constructive way for companies to prepare for the implementation of the DSO. In conclusion, the Practical tests are highly appreciated by the companies, however, some companies express the wish for more regular practical experiments.

7. ICT Market exams

All companies that have been interviewed during this research have contributed to one or more of the ICT Market exams that were held by Nederland ICT. The DSO is being developed as an 'open system' [open stelsel], which means that the market is able to develop their own, supplementary software for governments, citizens and companies. The government and the market benefit from a good connection and that the open system invites the market to renew (Nederland ICT, n.d.). The Market exams are seen as a useful way of giving input to DSO. However, not all companies agree with the degree to which is listened to this input, which is again explained by the fact that some of the input may have been too complex or too specific for the organizing parties to understand.

8. The Geonovum sessions on standards

The sessions that are organized by Geonovum to discuss the development of the standards are seen as the main possibility for companies to express their opinions on these newly developed standards. Most companies feel that they are listened to when they provide feedback.

9. The Geoforum

The Geoforum has not been discussed with the third parties within the interviews. Furthermore, the interviewees have not joined the discussion within the topics regarding the DSO and the "Omgevingswet", as can be seen on the forum.

6.4 Comparison

This paragraph attempts to compare the opinions and experiences of the third parties to the (intentions of) the current involvement strategy of the DSO. Ultimately, this comparison leads to the

conclusion if the strategy is perceived differently compared to the way it is applied. Table 6.3 presents an overview of the involvement opportunities that have and have not been used by the third parties that were interviewed.

Involvement possibility	Organizing party	Used by interviewees
Geoforum	PDOK and OSGeo	No
Geonovum sessions for standards	Geonovum	Yes
The Developers portal "Omgevingswet"	Program "Aan de slag met de Omgevingswet"	Yes
Quarterly demonstrations	Program "Aan de slag met de Omgevingswet"	Yes
Strategic Advisory Group Digitization Environmental Planning Act	Program "Aan de slag met de Omgevingswet"	No
Practical tests	VNG and a "bevoegd gezag"	Yes
Knowledge days for IT suppliers	Program "Aan de slag met de Omgevingswet"	Yes
Festival for practical tests	Program "Aan de slag met de Omgevingswet"	No
ICT Market exams	Nederland ICT	Yes

Table 6.3: Use of the involvement possibilities by interviewees

One notion has to be made before starting with the comparison. Some forms of participation that are presented in Chapter 5 could not be discussed with the third party interviewees, namely the Geoforum, the Festival for practical tests and the Strategic Advisory Group Digitization Environmental Planning Act. Therefore, the placement of these participation possibilities is adopted from the placement in Chapter 5. This leaves the advisory group at the *consultation* level and the Geoforum and the Festival for practical tests both at the *informing* level.

In Chapter 5, the Developers portal "Omgevingswet" has been identified as an indication of the *therapy* level, as it offers transparency regarding new developments, but does not allow its users to change anything. The portal is valued by the companies, as they appreciate the possibility for them to experiment with the APIs and other services. This means that they do not feel as if they receive only the information that the DSO organization wants them to receive. From the third party perspective, the Developers portal is an indication of the *informing* level, one level higher than the therapy level.

The Practical tests are appreciated by the third parties as a form of participation, as they are able to express their opinions and give advice for future developments. The third parties see these tests as an ideal opportunity to express their needs and wishes for the developed standards, information models or services. Therefore, the Practical tests are indications of the *lobbyism* level.

The companies experience the type of communication that is presented at the Knowledge days for IT suppliers as a one-way flow of communication, which is, according to Arnstein (1969) a clear indication of the *informing* level. In addition to the type of communication, the frequency with which the event is organized is an indicator for the informing level, as the low frequency is negatively perceived by the companies.

The ICT Market exams that have been performed by ICT Nederland are perceived as a form of *consultation*, as the companies are actively invited and asked for their opinion and advice regarding the involvement of third parties and new developments regarding the DSO. The same counts for the Geonovum sessions for standards. Most companies express that they feel as if their feedback is listened to and actively used for the improvement of services and standards.

The third parties are invited to the Quarterly demonstrations but do not get the opportunity to deliver input or advice. The demonstrations are, therefore, another indication of the *informing* level. Uffen (2019) and van Duijn (2019) stated that third parties will be asked to present practical experiences in upcoming demonstrations in 2019, which would result in more participation of the third parties. The placement of these participation forms is displayed in Figure 6.1.
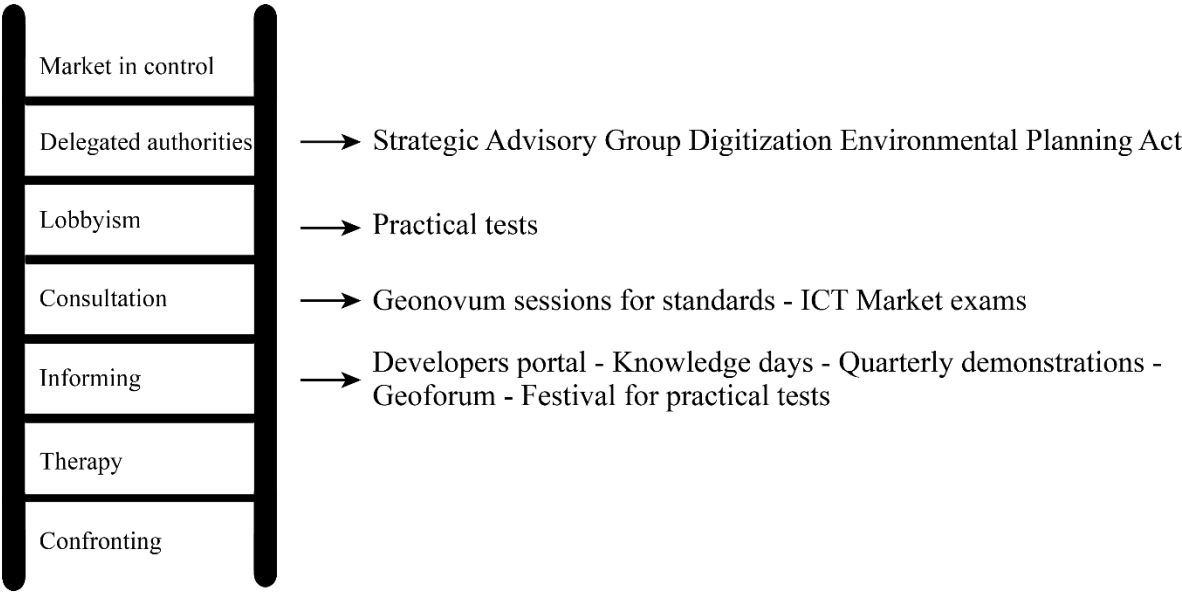
Figure 6.1: Placement of involvement possibilities by interviewees

There are two noticeable differences between the perception of third parties of their involvement and the intended involvement as presented by the DSO representatives. Firstly, some of the participation forms that are implemented by the program "Aan de slag met de Omgevingswet", are not actively used by the interviewed companies, such as the Festival for practical tests, which is why that has not been used in Figure 6.1. The only participation form that is placed on a different involvement level is the Developers portal "Omgevingswet".

7. DISCUSSION

This thesis has researched the involvement of third parties in the development and implementation of the DSO. Third parties are those parties that build functions and applications with which they support any of the primary users of the DSO. The Ladder of Citizen Participation of Sherry Arnstein (1969) is used as a theoretic basis for the assessment of third party involvement (Arnstein, 1969). This ladder was adjusted to fit the research topic and used by two DSO representatives to indicate the applied strategy of third party involvement. The indication was based on the placement of nine participation possibilities, of which the overall level could be placed between the *informing* and *consultation* level. In-depth interviewed were held with five third parties, who evaluated their perception of their involvement, which turned out to be the same as the intended level.

Several authors have criticized Arnstein's ladder, mainly on its measurement scale and scope (Carpentier, 2016; Cornwall, 2008). Arnstein introduced eight separate steps of her ladder that indicate a certain type of involvement. However, the type of involvement is not an indication for the degree of involvement, which means that it does not state how much influence is 'gained' or 'lost' between the different steps.

The context in which Arnstein's ladder was constructed differs from the context of this research, which is why several adjustments had to be made to create a new ladder. Firstly, the perspective of the ladder had to be changed as Arnstein's ladder was constructed from a citizen's perspective and the focus of this research lies with the third party perspective. Secondly, the processes in which the involvement of citizens of Arnstein's ladder is evaluated are traditional government processes, whereas the DSO is an eGovernment process. Therefore, literature on eGovernment and (external) stakeholder perspective was used to create the new ladder: the ladder of third party participation.

Looking back, it is clear that the ladder of third party participation needs more adjustments before it is suitable for the assessment of the participation level of third parties. Firstly, the upper step of the ladder presents an extreme that is not desired by the third parties. The upper level, *market in control*, would indicate that third parties are in control of the planning and budget of the development and implementation of the DSO and have the final say in its functionalities. In other words, the third parties would have these responsibilities in addition to their other business activities, which is why this level is not desirable for them.

The level below market in control, the *delegated authorities* level is also not entirely suitable for the third party participation. Within this level, a third party would be given some authority by the organizing parties as a way of forming a bridge between third parties and the DSO organization. The result of this way of delegating authority would be valuable for third parties. However, this would mean that the chosen third party is no longer considered as part of the third party category as

the role of the party changes. Consequently, this step does not belong to the ladder but it can be considered an important aspect in the cooperation between third parties and the DSO organization.

Within the *lobbyism* level, the third parties advocate their needs and wishes to the government to try to achieve them. Consequently, lobbyism is an informal way for third parties to exert pressure on the government. As the other levels of the ladder represent formal ways of participation, the lobbyism level does not belong within this ladder of participation. The lobbyism level could be replaced with a new level, called the *experimenting* level, as this form of participation seemed to be missing from the ladder. Several participation possibilities that are offered by the DSO programs include ways for third parties to actually work with the developments and experiment how these developments affect their software products and services. Examples of these possibilities are the Developers portal Omgevingswet [Ontwikkelaarsportaal] and the Practical tests [Praktijkproef].

The lobbyism level could be present on a separate ladder, one that identifies informal levels of participation. This ladder would include possibilities for third parties to actively seek opportunities to participate in the developments of the project. For example, one level could represent networking opportunities, which third parties can use to come in contact with other third parties and in this way be able to gather new information on the developments.

Other levels that could be included on such a ladder could, for example, be moral pressure, (anonymous) donating and activism. An example of activism is given by OpenStreetMap: a project that was founded out of dissatisfaction with the high costs that mapping agencies ask for their products. As these agencies were not willing to change, the founders decided to compete with them by launching the project. The result is a very well-known, successful project that is globally used.

A concept version of a ladder of informal third party presentation is presented in Figure 7.1.

Figure 7.1: Ladder of informal third party participation

In conclusion, the ladder of third party participation fits other digital government projects to some degree. The lower levels of the ladder are identical to those of Arnstein's ladder and seem to fit the assessment of third party involvement well. The higher levels need some adjustments, however, in combination with the ladder of informal third party participation, it could be an ideal framework of third party participation.

8. CONCLUSION

In the Netherlands, the implementation of the Dutch Environmental Planning Act [Omgevingswet] in 2021 will be supported by a digital system called the "Digitaal Stelsel Omgevingswet" (DSO). The DSO should support the availability of all digital information related to the environment. Furthermore, it facilitates governmental organizations, stakeholders and other parties in determining what is possible in the physical environment, for example regarding the construction of new buildings.

The contents and functions of the DSO are expected to influence the business activities of all companies whose services and (software) products will be connected to the system. The term for these companies is third parties: those parties that build functions and applications with which they support any of the primary users. The main objective of this research was to assess the current involvement of third parties in the development of the DSO and to gain insight into the possibilities of improving this involvement. Several research objectives were identified in order to achieve the main research objective:

1. To design a framework to identify steps of involvement of third parties in digital government projects.

To support the identification, a theoretical framework was created based on the Ladder of Citizen Participation of Sherry Arnstein. To fit the context of the research topic, the ladder was adjusted on the basis of literature on eGovernment and stakeholder perspectives. The result of this literature study was a new ladder: the ladder of third party participation. The new ladder ranges from the *confronting* level to *market in control*.

2. To assess the current strategy for third party involvement.

The assessment of the current involvement strategy was based on the input of a documentation study and on input from interviews held with DSO representatives. In total, eight possibilities for third parties to participate in the development or implementation of the DSO were identified within a documentation study. These possibilities were placed on the ladder with the support of input that was gathered from two interviews: one with the director of the program DSO and one with an employee of the program "Aan de slag met de Omgevingswet". The placement of these possibilities on the ladder matches the type of participation that was intended by the DSO organization. The placement of the nine possibilities is spread over four levels, namely *therapy*, *informing*, *consultation* and *lobbyism.* As most of the participation possibilities were placed by the DSO representatives on the consultation level and on the informing level, the applied strategy for the involvement of third parties lies between the *informing* and *consultation* level.

3. To assess the experience of third parties of the involvement strategy.

The identified possibilities were discussed through interviews with five third parties: Esri, Geodan, MUG, Roxit, and Vicrea. However, some opportunities either were not used by these companies or were not discussed within the interviews, namely the Geoforum, the Strategic Advisory Group Digitization Environmental Planning Act and the Festival for Practical tests. Therefore, the placement of these possibilities was adopted from their placement by the DSO representatives. The Developers portal "Omgevingswet", the Knowledge days for IT suppliers, the ITC Market exams, the Practical tests, the Quarterly demonstrations and the Geonovum sessions for standards are the participation possibilities that have been used by one or more of the interviewed parties. These possibilities were placed on the *informing, consultation* and *lobbyism* levels on the ladder of third party participation.

Consequently, a comparison could be made between the placement of these possibilities by the DSO representatives and by the third parties. In addition to leaving out three of the participation possibilities, only one opportunity was placed on a different level: the Developers portal "Omgevingswet". The intention of the Developers portal is placed by the DSO representatives on the *therapy* level. However, the third parties perceive the portal not as a form of therapy, but as a form of *informing* as it is valued by the companies. The third parties appreciate the possibility for them to experiment with the developed APIs and other services and this positive attitude towards the portal has led to the conclusion that the portal is not an indication of the therapy level.

The placement of these nine possibilities is spread over four levels, between the *informing* level and the *delegated authorities* level. Therefore, the perceived strategy for the involvement of third parties is indicated between the informing and consultation level.

The main research objective was expressed through the following central research question:

How could the involvement of third parties in the implementation of the Dutch "Digitaal Stelsel Omgevingswet" be improved?

The current third party involvement strategy as applied by the organizing parties of the DSO, the program DSO and the program "Aan de slag met de Omgevingswet", was based on the newly constructed ladder of third party participation. The perception of the applied strategy was brought to light by five third parties, of which the overall level as perceived by these parties did not differ from the level as intended by the DSO organization. In other words, the third parties experience their involvement as the DSO organization wants them to.

Even though the applied strategy of DSO matched the perceived strategy of third parties, third parties would like to see a change in the applied strategy. Consequently, the answer to the central

research question is as follows: to improve the involvement, the DSO organization should consider trying to achieve a higher level on the ladder of third party participation. However, this should be decided in cooperation with the third parties as their desire to be involved might have a limit due to their other business activities. Furthermore, the question what the ideal degree of involvement for both sides would be, probably differs for every third party.

9. RECOMMENDATIONS

This research is conducted between the second half of 2018 and the beginning of 2019 when in the meantime the DSO is still being developed until at least the year 2024. The contents and functions of the DSO can still change over the coming years, which implies that the needs of the third parties, with their critical role in the implementation of DSO, should be identified and satisfied: third party involvement in DSO continues to be highly relevant for the success of the DSO.

Although the involvement strategy presented by the DSO organization is perceived as it is intended, some of the third parties indicated that they would prefer more involvement, especially in between of the Quarterly demonstrations. Another wish that has been expressed through the interviews was clearer communication from the program DSO on decision-making. When a decision regarding the contents or planning of the implementation is made, it is appreciated when this is communicated to the third parties shortly afterwards.

The DSO representatives that were interviewed stated that it intends to focus more on the role of the third parties now that the implementation phase of DSO is begun. Additionally, they will involve third parties more intensively in the future, by creating more opportunities such as the option for third parties to present practical experiences during a Quarterly demonstration. It is recommended that the DSO organization continues to evaluate the involvement strategy and listen to the advice that was given by the third parties within this research.

To the third parties themselves, it is recommended to actively take control in their involvement. For example, by taking initiative to organize a Practical tests with a "bevoegd gezag" or by attending the Quarterly demonstrations.

For future research, it is advised to interview more parties to be able to bring opposing opinions to the table. In addition to interviewing more parties, it is advised to interview a more varied group of parties. For example by involving urban development agencies, project developers and non-governmental organization. The specific products and services that these different types of parties deliver require different types of information and communication from the DSO organization. The inclusion of such parties in future research could lead to a more complete analysis and, therefore, to a more complete advice.

The last recommendation regarding future research, is to expand the informal ladder of third party participation, which was introduced in the discussion in Chapter 7. The combination of a formal and an informal ladder would create a complete picture of all possible ways that third parties are and can be involved as well as all ways that they can influence the implementation of the DSO.

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APPENDIX A: List of translations

Dutch	English
Activiteitenbesluit Internet Module (AIM)	Internet Module for Activity decisions
Basisregistraties	Key registries
Basisregistratie Adressen en Gebouwen	Key registry for buildings and addresses
Bevoegd gezag	Representative authority
Bronhouder	Data provider
Consultatiesessie standaarden	Session for standards
Digitaal Stelsel Omgevingswet (DSO)	Digital system Environmental Planning Act
Generieke Data Infrastructuur (GDI)	Generic Data Infrastructure
Geo-ICT	Geospatial technology
ICT Markttoets	ICT Market exam
Informatiehuis	House of information
Informatieketen	Chain of information
Interprovinciaal Overleg (IPO)	Interprovincial consultation
Kennisdag voor ICT-leveranciers	Knowledge days for IT suppliers
Koppelvlak	Open interface
Kwartaaldemonstraties	Quarterly demonstrations
Laan van de Leefomgeving	Avenue of the Living Environment
Landelijke voorzieningen	National services
Ministerie van Binnenlandse Zaken	Ministry of the Interior
Nationale Geo-Informatie Infrastructuur (NGII)	Dutch National Spatial Data Infrastructure (SDI)
Omgevingsdocument	Environmental Planning document
Omgevingsmanager	Manager of the Environment
Omgevingswet	Dutch Environmental Planning Act
Omgevingsloket Online	Online booth for the Environmental Planning Act
Ontwikkelaarsportaal Omgevingswet	Developers portal Environmental Planning Act
Praktijkfestival	Festival for practical tests
Praktijkproef	Practical tests
Publieke Dienst op de Kaart (PDOK)	Public Services on the Map
Ruimtelijkeplannen.nl	Website for Dutch spatial plans
Stelselcatalogus	System catalogue
Stelselknooppunt	System-node
Strategische Klankbordgroep Digitalisering Omgevingswet	Strategic Advisory Group Digitization Environmental Planning Act

Toepasbare regels	Applicable rules
Unie van Waterschappen (UvW)	Union of Waterboards
Vereniging van Nederlandse Gemeenten (VNG)	Dutch Association of Local Governments
Werkgroep Standaarden	Taskforce Standards
Zorgdragers	Caretakers

APPENDIX B: Topic list for the third party interviews

Thema	Vraag	Tijd (Min)
Intro	- Voorstellen - Aanleiding scriptie toelichten - Doel, hoofdvraag + deelvragen toelichten: het beoordelen van de huidige betrokkenheid van de geo-ICT sector bij de ontwikkeling van het DSO en inzicht krijgen in de mogelijkheden om deze betrokkenheid te verbeteren. - Toestemming formulier laten ondertekenen - Gebruik interview toelichten	**5 (5)**
A	*Ten eerste zal ik een aantal beschrijvende vragen stellen over uw bedrijf, om een context te creëren.* Ten eerste zou ik u graag willen vragen om u voor te stellen en kort toe te lichten wat uw functie binnen het bedrijf is? Binnen welke markt valt uw bedrijf? Hoeveel mensen werken er binnen het bedrijf? Wat zijn de voornaamste werkzaamheden van uw bedrijf? Hoe ziet uw portfolio eruit? Kunt u kort toelichten op welke wijze uw bedrijf betrokken is bij de ontwikkeling van het DSO?	**5 (10)**
B	*Vervolgens zou ik graag kort de doelen en de opzet van het DSO bespreken.* Wanneer heeft uw bedrijf voor het eerst gehoord over de komst van de Omgevingswet en het bijbehorende DSO? Kunt u me iets over de context vertellen van dit nieuws? Bent u het er mee eens dat het nodig is dat er een DSO komt? Zo ja, waarom? Ik ga er vanuit dat u op de hoogte bent van de officiële doelen van het DSO, wat is volgens u de belangrijkste? Wat waren uw eerste verwachtingen? Verschillen uw huidige verwachtingen van deze eerste verwachtingen? Hoe bereid uw bedrijf zich voor op de komst van het DSO/de Omgevingswet? Zijn jullie bijvoorbeeld betrokken bij een van de pilots? Werd er iets van uw bedrijf verwacht in de vorm van een bijdrage? Zo ja, wat voor bijdrage? Hoe werd hier mee omgegaan? Heeft u het idee dat de huidige en toekomstige werkzaamheden van uw bedrijf zullen veranderen door de komst van het DSO? Verwacht u bijvoorbeeld nieuwe producten op de markt te moeten brengen?	**15 (25)**
C	*Nu zou ik graag iets dieper op de betrekking van uw bedrijf bij de ontwikkeling/implementatie van het DSO ingaan.* Laat ik beginnen met een makkelijke vraag, voelt u of uw bedrijf zich betrokken? Bent u tevreden met de wijze waarop uw bedrijf tot op het heden is betrokken bij de	**15 (40)**

ontwikkeling en/of de implementatie van het DSO? Wat had u liever gezien? Zou uw bedrijf, naar uw mening, ervan profiteren als het intensiever betrokken zou worden?

Wat zou het voor gevolgen hebben als bedrijven in uw sector niet of niet genoeg betrokken worden?

Denkt u dat er voldoende feedback mogelijkheden zijn gecreëerd om input te leveren voor de ontwikkeling van het DSO? Kunt u toelichten of u 'op tijd' bekend was met deze mogelijkheden?

Heeft u het idee dat er geluisterd werd naar deze feedback? Hebt u dit ergens terug kunnen zien?

Heeft u kunnen onderhandelen over een bepaald onderdeel of structuur?

Is uw bedrijf uitgenodigd voor een commissie o.i.d.?

Is uw mening over de opzet, de doelen of de invloed van het DSO veranderd door een van deze feedbackmogelijkheden?

D	*Tot slot wil ik graag ingaan op verschillende vormen van betrekken van stakeholders, om een vergelijking met andere interview kandidaten te kunnen maken.*	**15 (50)**

Leest uw bedrijf de updates op bijvoorbeeld de website van het programma Aan de slag met de Omgevingswet? Of ontvangen jullie de nieuwsbrief?

Zo ja, wat vindt u van de website/de nieuwsbrief? Staat er de informatie in die u verwacht? Heeft u nog andere opmerkingen of suggesties hierover?

Heeft u een of meerdere enquêtes ingevuld die verstuurd zijn vanuit een van de organiserende partijen? Wat vindt u van deze manier van communiceren?

Bent u, of een andere college van uw bedrijf naar een van de evenementen geweest? Zoals die vanuit Geonovum? Wat vindt u hiervan?

Tot slot is er ruimte voor andere ideeën of suggesties over hoe u graag meer of effectiever betrokken zou willen zijn bij het DSO.

Outro	**- Bedankt voor uw tijd.** **- Herhaling van de afspraken** **- Aanbieden om eindresultaat op te sturen**	**5 (55)**

APPENDIX C: Topic list for the DSO representatives interviews

Thema	Vraag	Tijd (Min)
Intro	- **Voorstellen** - **Aanleiding scriptie toelichten** - **Doel, hoofdvraag + deelvragen toelichten: het beoordelen van de huidige betrokkenheid van de geo-ICT sector bij de ontwikkeling van het DSO en inzicht krijgen in de mogelijkheden om deze betrokkenheid te verbeteren.** -**Toestemming formulier laten ondertekenen** - **Gebruik interview toelichten**	**5 (5)**
A	*Ten eerste zal ik een aantal beschrijvende vragen stellen over uw rol binnen het programma Aan de slag met de Omgevingswet.* Ten eerste zou ik u graag willen vragen om u voor te stellen en kort toe te lichten wat uw functie binnen het programma is? Hoeveel mensen werken er binnen uw programma/ team? Wat zijn de voornaamste taken van het programma DSO?	**5 (10)**
B	*Vervolgens zou ik graag kort de doelen en de opzet van het DSO bespreken.* Wat is het doel van het DSO? Wat is volgens u de belangrijkste bijdrage/impact van het DSO? Kunt u de governance van het DSO beschrijven? Welke partijen zijn bij de ontwikkeling van het DSO betrokken?	**10 (20)**
C	*Nu zou ik graag iets dieper op de betrekking van de geo-ICT bij de ontwikkeling/implementatie van het DSO ingaan. Hiermee bedoel ik met name de verspreiding van informatie vanuit de DSO kant.* Wat is volgens u de rol van de derde partijen bij de ontwikkeling van het DSO? Wat verwacht u concreet van deze derde partijen? Wat is volgens u het belang van de geo-ICT sector bij het DSO? Zit er hierbij volgens u een verschil in het type geo-ICT bedrijf? Hiermee bedoel ik bijvoorbeeld software ontwikkelaars, stedenbouwkundige bureaus, landmeters etc. Wat is volgens u de huidige strategie m.b.t. het betrekken van de geo-ICT sector? Hoe is deze strategie tot stand gekomen? Is deze strategie in de afgelopen jaren aangepast? Zijn er plannen om nog veranderingen door te brengen in de komende jaren?	**15 (35)**

Kunt u concrete voorbeelden geven van de manier van betrekken? Denk hierbij aan uitnodigen voor consultatierondes, nieuwsbrief, enquêtes, zitting in de DSO programmacommissie? Hoe vaak gebeurt dit?

Welke van deze manieren heeft uw voorkeur?

Heeft u het idee dat de geo-ICT sector zelf tevreden is met deze strategie?

Zou het programma (of het DSO zelf), naar uw mening, ervan profiteren als de private sector intensiever betrokken zou worden?

D	*Tot slot wil ik graag ingaan op de manier waarop de sector feedback kan geven op inhoud, doelen of structuur van het DSO.*	10 (45)

Hoe kunnen partijen feedback geven op het DSO?

Denkt u dat er voldoende feedback mogelijkheden zijn gecreëerd om input te leveren voor de ontwikkeling van het DSO? Kunt u toelichten of deze mogelijkheden naar uw mening 'op tijd' bekend waren?

Op welke manier wordt er met input en/of feedback omgegaan? Is er bijvoorbeeld een algemene e-mail inbox? Worden er FAQ gepubliceerd op een centrale website/ nieuwsbrief?

Is deze manier gewijzigd na uitingen vanuit de sector?

Outro	- Bedankt voor uw tijd	5 (55)
	- Herhaling van de afspraken	
	- Aanbieden om eindresultaat op te sturen	