KU LEUVEN

FACULTEIT SOCIALE WETENSCHAPPEN

A governance framework facilitating a digital transformation of the public administration

Maxim CHANTILLON

Proefschrift aangeboden tot het verkrijgen van de graad van Doctor in de Sociale Wetenschappen

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International Hellenic University, Thessaloniki, GR

Onderzoekseenheid: Instituut voor de Overheid (IO)

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Tu trouves dans la mesure où tu cherches,
tu reçois dans la mesure où tu demandes;
Et finalement, ce qui devient tien, c'est ce que tu as voulu atteindre
Angelus Silesius, 1677

Voorwoord / Foreword

Haasrode / Leuven / Bierbeek

Mei 2021

Al het andere in dit document is neergeschreven in een taal die niet de mijne is. Maar zoals u weet, mijn beste lezer, drukt emotie zich nog steeds het beste uit in de eigen taal. “We hebben hier misschien nog wel iets liggen voor u” – zo begon het in 2016, op een vroege ochtend in het kantoor van prof. dr. Annie Hondeghem. Even wat stilte, en hop een doorverwijzing naar prof. dr. ir. Joep Crompvoets. Nu, vijf jaar en verschillende projecten later, ligt het er. Het doctoraat waar – eerlijk is eerlijk – toch wel naar uitgekeken is. Niet alleen door mij.

Vijf jaar heb ik mogen doorbrengen op het Instituut voor de Overheid. Het was een prachtige tijd. Deze jaren hebben me geholpen mezelf beter te leren kennen en vooral niet te werken aan een doctoraat op de manier zoals de meesten het zich inbeelden. Alleen het doctoraat en niets dan het doctoraat. Nee, zo ging het niet. Het was een tijd met verschillende onderzoeksprojecten, het schrijven van onderzoeksvoorstellen, het organiseren van workshops en conferenties, het doorlopen van een werkperiode bij de Europese Commissie, het bijwonen van conferenties en symposia, het begeleiden van thesissen, en ga zo maar door. Maar dat was goed, en nodig. Het was soms veel, en af en toe te veel, maar het was ook oh zo leerrijk. Het zorgde voor afwisseling, voor het versterken en uitbreiden van mijn professioneel netwerk, voor het beproeven en verder uitdiepen van mijn kwaliteiten. En hoewel dus wat zwaar van tijd tot tijd, was het Instituut bovenal een uitstekende leerschool voor wat hierna komt. Het was de basis, mijn beste lezer, want het Instituut bereid je voor op de toekomst. Het is de kweekschool van zij die werken aan ’s lands toekomstige administratie en bestuur. Dank daarvoor, aan u allen.

In de eerste plaats wil ik mijn promotor, prof. dr. ir. Joep Crompvoets – kortweg Joep – bedanken. Je hebt me de mogelijkheid gegeven om onderzoek te voeren en projecten op dagelijkse basis te leiden en te ondersteunen. Bedankt om me de kans te hebben gegeven dit onderzoek uit te voeren, voor de steun tijdens de afgelopen jaren en om me tijdens dit ganse proces te begeleiden. Het was geen makkelijke weg, maar het is gelukt! Het vertrouwen dat je in me gesteld hebt, in het kader van dit onderzoek en de verschillende nevenactiviteiten is enorm, en heeft me de kans geboden om mijn capaciteiten verder te ontwikkelen. Laat het

duidelijk wezen, een onderzoeker is slechts onderzoeker wanneer hij/zij het thema beheerst én alle nevenactiviteiten voor zijn/haar rekening kan nemen. En Joep, jij beheerst dit – als geen ander.

Eveneens wil ik mijn co-promotor, dr. Vassilios Peristeras, alsook de andere juryleden, zijnde prof. dr. Trui Steen, prof. dr. Monique Snoeck, dr. Georges Lobo en prof. dr. ir. Arnold Bregt, bedanken voor de waardevolle begeleiding en inhoudelijk commentaar. Kunnen bouwen op de kennis van jullie allen, beschouw ik als één van de waardevolste fundamenten van deze thesis.

Een derde fundament, op een meer indirecte manier, maar even cruciaal als het inhoudelijke, was het financiële aspect. Graag wil ik het Belgisch federaal wetenschapsbeleid, kortweg BELSPO, bedanken voor de financiële ondersteuning van mijn doctoraatsonderzoek. In het bijzonder dank ik mevr. Emmanuèle Bourgeois en de heer Aziz Naji voor de aangename samenwerking door de jaren heen. Zowel het BELSPO BRAIN-be FLEXPUB onderzoeksproject als het BELSPO BRAIN-be DIGI4FED onderzoeksproject, gaven me de mogelijkheid onderzoek te doen naar enerzijds een prangende vraag die de overheidsadministratie had en anderzijds om mijn doctoraatsonderzoek ten uitvoer te brengen. Eveneens, en hieraan gerelateerd, wil ik mijn projectcollega's van de UNamur en het Nationaal Geografisch Instituut, zijnde de heer Rink Kruk, dr. Anthony Simonofski en de heer Thomas Tombal, bedanken voor de uitermate aangename tijd die we samen mochten beleven. Ook wil ik mevr. Ingrid Vanden Berghe, administrateur-generaal van het Nationaal Geografisch Instituut bedanken voor de aangename samenwerking. Het was me een genoegen met jullie onderzoek te mogen voeren.

Een ander fundament is de omgeving waarin deze thesis tot stand kwam. Hierboven werd reeds verwezen naar het belang van het Instituut voor de Overheid, als onderzoeks- en onderwijsinstelling. Het Instituut is echter meer. Het is een groep actieve, hardwerkende, intelligente en bovenal aangename mensen. Bedankt Annie, om er steeds te zijn wanneer het moest. Bedankt Anneke, Inge, Tatjana en Maaike – zonder jullie zou het Instituut stuurloos rondwalen in het landschap van administratieve processen. Bedankt aan de collega's, zowel huidige als voorgaande, om het Instituut tot zo'n aangename werkplek te maken. Het laatste jaar was het wat moeilijk, maar vergeet niet wat voor moois we meemaakten tijdens lunches, caféavonden, collegaweekends, uitstapjes, huwelijksfeesten en jaarlijkse festiviteiten. Sommigen van jullie zijn meer geworden dan enkel collega's. Zij die dat moeten weten, weten dat ook.

Goed, een vijfde fundament van deze thesis dan: Al m'n vrienden in en rond Leuven – zo u het nog niet wist, mijn beste lezer, Leuven is én blijft het centrum van de wereld. Steeds stonden

jullie paraat, in goede en kwade dagen. Het was altijd een plezier om met jullie over iets anders dan het doctoraatsonderzoek te spreken of om jullie gewoon om raad te vragen over net dat doctoraat. Jullie geduld, inzicht en vertrouwen is een bron van rust en het is een waar plezier om met jullie te mogen omgaan en jullie als vrienden te mogen beschouwen.

Tot slot, als laatste fundament, mijn ouders, broer, grootmoeder en schoonzus. Het hoeft geen betoog hoe belangrijk jullie zijn. Jullie zijn er altijd geweest, zullen er altijd zijn en hebben er steeds naar gestreefd het beste in mij naar boven te halen.

Dank, aan u allen.

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Chapter 1 Introduction

1.1 Research Setting

For many years now, public administrations have been working on a digitalisation of their internal functioning and their service delivery (EU Ministers in charge of eGovernment Policy and Coordination, 2020; Organ, 2003; Torfs et al., 2021; Troshani et al., 2018). Public administrations – be it at the international, national, regional or local level – have embraced the possibilities offered by new digital technologies in order to redesign how they function and what services they offer to their users. They do not just launch digitalisation efforts on a voluntary basis but are rather required to take action based on a number of changing factors. While many different factors can potentially influence the decision of public administrations to start digitalisation efforts, three principal factors are considered here (Chantillon, Simonofski, et al., 2017; Mergel et al., 2019).

A first factor is the ongoing technological evolution. Although technology is constantly changing, the introduction of the internet in the mid-1990's caused a major evolution in the developments and possibilities offered by technology. This in turn started to influence the way in which public administrations function and offer services to users (Chantillon, Simonofski, et al., 2017; Chen, 2002; Van Veenstra, 2012; Wimmer, 2002). In that respect, the start of what is often called e-government can be considered to have commenced when public administrations started to use the technological possibilities offered by the internet (Van Veenstra, 2012).

A second factor entails the changing expectations from those interacting with public administration, i.e. users. Not only public administrations are confronted with technological evolutions, the users are too. Those users have as such changing expectations – and sometimes rivalling expectations – on the services delivered to them as well as on the way that the services are delivered to them (Simonofski, Snoeck, et al., 2019a; Simonofski, Vanderose, et al., 2017). Although expectations and demands among (groups of) users can vary widely, it can be argued that there is the expectation that a public administration takes actions to improve its internal functioning and service delivery, thereby aligning with common societal expectations and technological evolutions (Chantillon, Simonofski, et al., 2017; De Grauwe, 2020; Troshani et al., 2018).

A final, and third factor, is not related to technological evolution or changing demands and expectations from users. It is focused on the budgetary difficulties faced by public administrations resulting from (global) crises situations, leading to a request for more efficiency from public administration actors. An example is the global financial crisis of 2007-2008 which left public administrations with a high level of debt, leading to austerity measures installed upon

public administrations by political decision makers (Klievink et al., 2016)[1]. A similar situation could result from the 2020-2021 COVID-19 pandemic as it is leading to high level of debt for public administrations (De Grauwe, 2020). It remains to be seen how political decision makers will deal with this debt, and what consequences it will have for the functioning of the public administration.

Those three factors require public administrations to rethink their functioning and service delivery towards users. After all, it could be argued that public administrations could have easily left the possibilities of new digital technologies aside – or could have denied the reality of these factors altogether. The answer is yet complex and simple at the same time: There is the necessity for the creation of public value. As public administrations aim for public value creation, new technologies provide intriguing possibilities to that end (Moore, 1995, 2013). As such, there simply proves a need to transform in order to keep up with the transformed expectations – about the public value a public administration has to create – caused by a (rapidly) changing context influenced by information and communication technologies.

The inclusion of technology, in whatever shape or format, is, however, not something new: It is an ongoing process that has always influenced public administrations. Albeit that the introduction of the internet led to another kind of evolution within public administrations as it created the possibility for public administrations to develop an e-government / e-governance policy and related e-services (Van Veenstra, 2012). Recently, at the end of the 2nd decade and the beginning of the 3rd decade of the 21st century, more attention is devoted to what is called digital transformation rather than the earlier *digitalisation*. Both academics and practitioners have conceptualised this notion. This growing attention for digital transformation, in comparison to the decline of the earlier digitalisation, can be explained by the realisation, by both academics and practitioners that the digitalisation known until now has only led to incremental changes instead of an actual transformation impacting the public value by public administrations (Pignatelli & Ulrich, 2021). A recent example wherein the concept of a digital transformation plays a key role is the 2020 European Union (EU) Ministerial Berlin Declaration on Digital Society and Value-Based Digital Government. The Declaration speaks of a digital transformation, not only in the public administration but of society as a whole, that is being guided by public values and that aims to create public value (EU Ministers in charge of eGovernment Policy and Coordination, 2020). This Declaration follows on the 2017 EU

[1] Although there is discussion in the academic literature on the necessity for austerity measures, politics has decided to install austerity measures on public administrations, leading to a decreased budget for public administration functioning.

Ministerial Tallinn Declaration on eGovernment. A declaration that also – and already – included several references to the concept of digital transformation. In the latter, it is stated that the digital transformation "of the public administration is [a] collective endeavour at national, regional and local levels within [the EU Member States] as well as by the [EU] institutions" (Ministers in charge of eGovernment policy and coordination from 32 countries of the European Union and the European Free Trade Area 2017, p. 2).

From a democratic point of view, the election of politicians by citizens will lead to an overall view on what is valued by those citizens. The public administration, together with the elected politicians, will have to strive towards the delivery of public value (Cordella & Bonina, 2012). Creating this public value will lead to "an appraisal 'on behalf of the public' of the outcome of public service delivery" (Moore, 1995; Rodriguez Müller & Steen, 2019, p. 341). The collective view of the electorate on what is valued, will provide guidance to the public administration in the creation of public value via government activities (Cordella & Bonina, 2012; Moore, 1995). The creation of this public value, by the public administration, requires as such action from the public administration. As indicated at the beginning of this chapter, the birth of the internet has strongly impacted on technological developments and the possibilities offered concerning service delivery over the internet. Both Cordella and Paletti (2018) and Sundberg (2016) therefore contend that the public value that is delivered to society, will change because of the impact that the use of digital technology has on both society and the public administration (Cordella & Paletti, 2018). The delivery of this public value, via a creation process, can as such be seen as the result of a service delivery process by the public administration.

Various authors, such as Cordella and Bonina (2012), Sundberg (2016), Luna-Reyes et al. (2016) and Cordella and Paletti (2018) argue that a digital transformation will impact the creation of public value. It is however necessary to understand how such a digital transformation – leading to the creation of public value – can be facilitated (Karunasena et al., 2011; Luna-Reyes et al., 2016; Moore, 2013; Savoldelli et al., 2013). Like any other policy, a policy concerning a digital transformation requires governance, defined here as "processes and structures for steering and managing parts of societies" entailing "the networks of actors, institutional frameworks and processes that take place within these networks and frameworks" (Nabatchi, 2018; Pollitt & Bouckaert, 2017; Rijke et al., 2012, p. 75; Wouters et al., 2020). This need for governance has also been underlined by Luna-Reyes et al. (2016) who argue in this respect that this will lead to the creation of public value. Governance will help a public administration to achieve its objective(s). Whereas digital transformation will be considered as a study object in this thesis, it needs to be

recognised that a digital transformation of a public administration only constitutes an intermediary tool or process to public value creation.

The problems for current public administrations are that (1) too little is known on what kind of governance can facilitate a digital transformation, and (2) which factors influence this governance (Barcevičius et al., 2019; Kruk et al., 2019; Mergel et al., 2019; Wouters et al., 2020, 2021). Many factors have been identified as having a potential impact on a digital transformation of the public administration, but it remains a challenge for pubic administrations.[2] As will be further explained below, a digital transformation requires a fundamental revision of the administration, its internal relations and the relations with external actors. This compels public administration to make use of governance. This suitable governance for a digital transformation however remains unknown, and is therefore worth to be investigated in this thesis. The overall aim of this thesis is therefore to contribute to an improved understanding of these two gaps currently existing in the academic literature. A final and conclusive answer as to what this governance and related factors then may be will not be provided in this thesis. Not only because of research limitations, but also because of the highly complex and constantly evolving nature of such a digital transformation.

Before delving deeper into this central objective, it is necessary to gain an understanding of what is denoted with *digital transformation*. While there is little doubt that the ongoing technological developments can have an important impact on the functioning of a public administration and their services on offer, it remains unclear what both political and public administration actors exactly denote when referring to the concept of digital transformation (Mergel et al., 2019). An examination of the academic literature on the concept of digital transformation learns that this lack of conceptual clarity is paralleled among scholars (Jonathan, 2020; Mergel et al., 2019; Scupola, 2018a, 2018b). A thorough understanding of this concept is nonetheless primordial to understand, on the one hand, the added value of a digital transformation for public administrations and service users, and to relate it to how a digital transformation can be reached on the other hand. Next to conceptual clarity, it is necessary to acquire an understanding of the factors influencing a digital transformation of public administration.

[2] Even though public administrations have developed several e-services, a profound rethinking and restructuring of public administrations did, however, not materialise (Affisco & Soliman, 2006). Bannister and Connolly (2012) even argue that "while technology has certainly facilitated some of these changes, there is no evidence that any changes in structure were technology-driven or that until relatively recently at least, technology per se enabled structures to be created that would not otherwise have been possible" (Bannister and Connolly 2012, p. 12).

In what follows, the concept of digital transformation will be presented and analysed on the basis of the academic literature. First, attention is devoted to the concept itself and the relation to public value creation. Afterwards, the relation to the concepts of e-government and e-governance is clarified. Those concepts can be seen as predecessors of the concept of a digital transformation (Dunleavy et al., 2008; Meijer et al., 2018). Thereafter, an analysis of factors influencing a digital transformation of the public administration follows. Finally, the main research question of this thesis is introduced as well as its sub-questions and the overall research context. A link is thereby made to the overall structure of the thesis.

1.2 Digital Transformation and Public Value

Whereas various authors have underlined the importance of a digital transformation and focused on digital transformation in their research, the number of authors devoting attention to a meaningful conceptualization of digital transformation is much more limited (Barcevičius et al., 2019; Datta et al., 2020; Horlacher et al., 2016; Jonathan, 2020; Scupola, 2018a, 2018b; Shaughnessy, 2018; Troshani et al., 2018). As signified by Curtis (2019), there "is little consistency in defining what digital transformation means for the public sector" (Curtis, 2019, p. 322) from an academic point of view, albeit that the author at the same time fails to provide a convincing view on the concept. Even more scarce are studies focusing solely on gaining a deeper and more profound understanding of the concept. And, as Mergel, Edelmann, and Haug (2019) argue concerning the view of practitioners, "there is little systematic empirical evidence about the way that public administrations are currently defining digital transformation in their day-to-day practices" (Mergel, Edelmann, and Haug 2019, p. 1).

Two studies were found that conduct a comprehensive conceptualisation of digital transformation. Mergel, Edelmann, and Haug (2019) study the concept of digital transformation on the basis of expert interviews, whilst Vial (2019) conducted a "rigorously reviewing literature" study (Vial 2019, p. 119). Besides the difference in research methodology, both articles are also grounded in different research lines. The work of Mergel, Edelmann, and Haug (2019) is strongly related to the public administration e-government / e-governance literature, whereas the study of Vial (2019) is grounded in the information systems literature. Combining both traditions has the strength of creating a thorough understanding of digital transformation as a concept.

Although Mergel, Edelmann, and Haug (2019) do not provide a definition of what the concept of digital transformation exactly refers to, they do provide a number of characteristics of the concept. On the basis of those characteristics a digital transformation pertains to:

> *a comprehensive process/approach that is heavily influenced by external drivers*[3]*, such as the use of new technologies by stakeholders of public administrations, which does not have an end status and needs frequent adjustments of its processes, services and products based on the changing external needs, thereby likely resulting in improved relationships between public administrations and its stakeholders, increased citizen satisfaction, and, most importantly, a change in bureaucratic and organizational culture* (based on Mergel, Edelmann, and Haug (2019)).

The description includes a number of highly relevant elements. In the first place, the sources influencing the process and/or approach. The focus lies on the external drivers, while internal drivers, that are inherent to the public administration, seem to be underplayed. A second aspect is the fact that there is no end status – as such, digital transformation is a continuous process, that can entail various other processes, services and products. As will be explained in the next section of this introductory chapter, a digital transformation can as such be built-up of different e-government activities of a public administration. A third aspect is the end result. It is focused on the relationship between the public administration and its users on the one hand, and the internal culture of public administration on the other. The end result also – clearly – reflects a normative position given its focus on an 'improved relationship' and 'increased citizen satisfaction'.

Vial (2019) provides a definition of the concept of digital transformation, arguing that it is

> *"a process where digital technologies create disruptions triggering strategic responses from organizations that seek to alter their value creation paths while managing the structural changes and organizational barriers that affect the positive and negative outcomes of this process"* (Vial 2019, p. 122)

Three aspects within this definition require detailed attention. In the first place, there is the overall objective: The creation of value is the overall end-goal, for which digital technologies function as the enabler. In the second place, the management of "structural changes and organizational barriers" is only considered a side-objective (Vial 2019, p. 118). This is interesting, and puts the public administration in an enabling position for the creation of public value. Thirdly, it is argued that the digital technologies have a disruptive effect. A disruption is stronger than an evolution or a foreseen / planned change. Indeed, there is a dissolution and interruption

[3] The external drivers can refer to, among others, the use of disruptive technologies by stakeholders of public administrations.

of the continuity, triggering a more fundamental change – which can have both a positive or negative effect (Oxford English Dictionary, 2021a).

Comparing the views provided by Vial (2019) and Mergel, Edelmann, and Haug (2019) reveals that although both argue that digital transformation is a process, there are more differences than similarities between their views. A first difference is related to the enabler of change. Vial (2019) argues that digital technologies take a central position in the process without mentioning any other potentially influencing factors, whereas Mergel, Edelmann, and Haug (2019) take a broader perspective on the influencing factors, arguing that new technologies are only one of many factors. Secondly, and related to the first point, is the scope of the definitions. The definition provided by Mergel, Edelmann, and Haug (2019) is broader as it leaves room for different kinds of interpretation on what processes can be considered to be *digital transformation* processes. A third difference lies in the overall objective of the digital transformation. Both definitions recognise that a digital transformation is a process, being enabled by certain factors, and in turn resulting in certain results. Whereas Vial (2019) takes an abstract and neutral descriptive stance, the other definition is normative via its focus on 'improved relationships' and 'increased citizen satisfaction'. Both do however focus on value creation, yet Mergel, Edelmann, and Haug (2019) take the liberty of already giving meaning to this value. Finally, concerning the process, Mergel, Edelmann, and Haug (2019) underline the non-definitive status of the process, when in fact this is not confirmed by Vial (2019).

Both definitions align on the conceptualization of digital transformation as a *process* (although Mergel, Edelmann, and Haug (2019) argue that it can also be *an approach*, which the authors consider to be broader than a *process*). This contrasts with the work of Van Veenstra (2012) who makes a distinction between transformation as a process and transformation as a product. Transformation as a process is focused on value realization, a change in the assumptions on what the organization is and is supposed to do, and a change in the behaviour of the individuals in the organization, leading to changes that are "discontinuous and radical" (Van Veenstra 2012, p. 9). This is strongly linked to public values and the creation of public value (Klievink et al., 2016). On the contrary, transformation as a product refers to the fact that a public sector reform is taking place – referring to "not just change but a beneficial change – a deliberate move from a less desirable (past) to a more desirable (future) state" (Pollitt and Bouckaert 2017; Van Veenstra 2012, p. 8). Transformation is as such the end goal, and not the enabler, as is the case with transformation as a process. Klievink, Bharosa, and Tan (2016) argue that the position taken by Van Veenstra (2012) on the concept of transformation focuses too much on the public administration trying to improve itself, thereby not necessarily making use of the possibilities

offered by the external environment (e.g. innovations developed by stakeholders available for reuse by the public administration). On the basis of this logic, Klievink, Bharosa, and Tan (2016) argue that the transformation can be based on an inside-in logic as well as an outside-in logic[4], whereby the public administration makes use of external initiatives to transform itself. The reasoning of Mergel, Edelmann, and Haug (2019) and Vial (2019) is as such aligned with Klievink, Bharosa, and Tan (2016). As mentioned, the description of Mergel, Edelmann, and Haug (2019) relies heavily on the external factors, whereas Vial (2019) refers only to 'digital technologies', thereby not differentiating between internal and external factors. Both internal and external factors can as such be considered to influence a digital transformation, whereby the aspect of digital technologies plays a fundamental role.

Concerning the object of a digital transformation (i.e. what is being transformed by a digital transformation), three aspects stand out. It can be focused on the transformation of services, on the transformation of the organisational culture and relationships with citizens, and on the transformation of public values underpinning the activities of the public sector (Bannister & Connolly, 2014; Mergel et al., 2019). On the basis of the above discussed information, a digital transformation can be described as follows:

> *a process where internal and external factors, such as the emergence of digital technologies, create disruptions that trigger responses from public administration organizations, that thereby seek to alter their public value creation, while managing structural and organizational changes that affect the outcomes of this process.*

This description, which considers digital transformation a process, can also be schematically presented through Figure 1.1. The public administration organization, or organizations, are put centrally as for their responsibility in service delivery. Public administration organization(s) are impacted by both external and internal factors. External factors are for example related to pressure from the environment in which public administrations function, such as the emergence of digital technologies. Those digital technologies, or information and communication technologies, can disrupt public administrations. One can therefore speak of disruptive digital technologies. Internal factors are, for example, related to the perceived need to change the approach taken towards physical data files and the management of the organization(s). Thinking for example of data, it can be argued that the increased possibilities and importance of data are

[4] An outside-in transformation logic refers to the idea that "knowledge and technology from beyond the organisational boundaries offer the potential to do something with"(Inauen & Schenker-Wicki, 2011; Klievink et al., 2016, p. 68). The inside-out logic refers to the improvement of internal processes and the reduction of costs, which will lead to effect on the environment of the acting organization (Klievink et al., 2016).

the results of the possibilities created by the disruptive digital technologies. In conclusion, both internal and external factors can trigger a response from the public administration organization(s) as, in essence, they will look for an altered public value creation. At the same time there are also effects related to the management of structural and organisational changes that need to be dealt with: The external and internal factors will lead to a change in the delivery of public services by (a) public administration organisation(s), leading to public value creation but also to possible structural and organisational changes in the organisation(s). Important here is the effect of the digital transformation. As it is a process, both the altered public value creation and the management of structural and organisational changes will possibility lead to an impact on the internal and external factors, leading to re-start of the digital transformation (Bannister & Connolly, 2014).

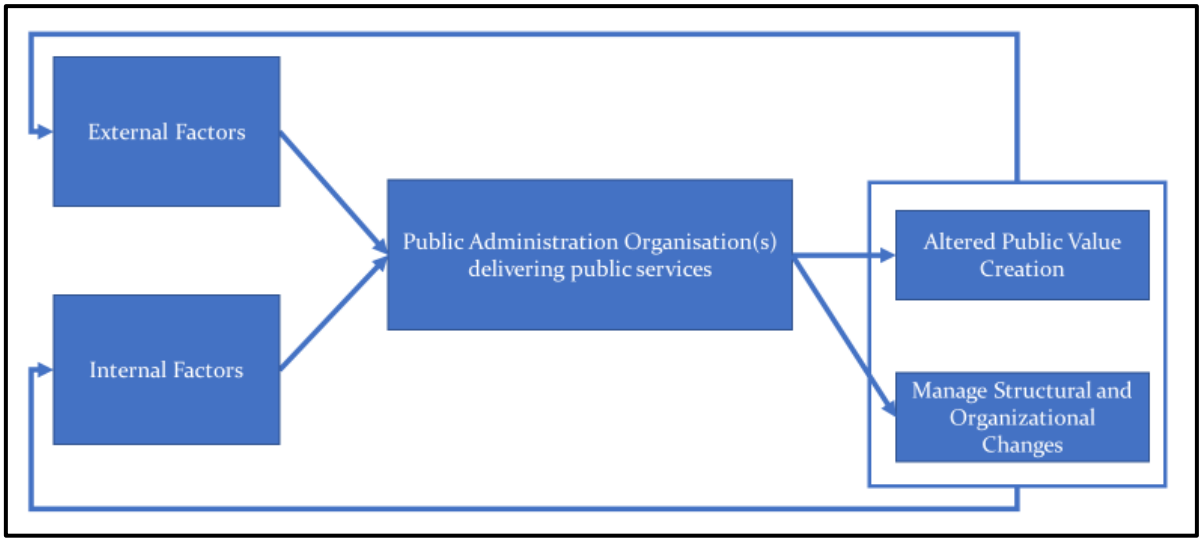

Figure 1.1 – Digital Transformation as a process in a public administration

1.3 Connecting Digital Transformation to e-Government and e-Governance

As already indicated there is a connection between digital transformation, e-government and e-governance, whereby a digital transformation is expected to have a more profound impact on the public administration then an e-governance and e-government process (Balutis, 2001; Baum & DiMaio, 2001; Layne & Lee, 2001; Mergel et al., 2019; Vial, 2019). In order to gain a more profound understanding of the concept of digital transformation, a comparison with the concepts of e-government and e-governance is therefore desirable. Since the emergence of the concept, e-government quickly gained in popularity and, is still widely used to describe:

> *"the use of ICT [information and communication technologies] in order to design new or to redesign existing information processing and communication practices in order to achieve a better government, especially in the field of electronic service delivery to companies and citizens but also for managerial effectiveness, and the promotion of democratic values and mechanisms"* (Meijer and Bekkers 2015, p. 237)

E-government is as such much more narrow than the concept of a digital transformation. It is focused on a specific aspect of the public administration (i.e. the service delivery process) and not on profound reforms, it has a short-middle long term duration, and is mainly focused on increasing efficiency and effectiveness. This last element also demonstrates the connection between e-government and New Public Management (Van Veenstra, 2012). It is, as Dawes (2009) argues, a narrow concept that focuses on the public administration itself, and insufficiently on the existing relationship between the public administration and its users and stakeholders. This also becomes clear when dropping the 'e-' from e-government. Indeed, the focus lies on the government itself, and its functioning, and not on the relation with the other actors. In conclusion, the difference between the concept of digital transformation and the concept of e-government lies in the approach and objectives decided upon. Nevertheless, a digital transformation can indeed entail e-government projects. If this is the case, those e-government projects will be embedded in a broader digital transformation process.

More subtle then the differences between e-government and digital transformation is the difference between e-governance and digital transformation. Dawes (2008) argued that e-governance could be defined as:

> *"the use of information and communication technologies […] to support public services, government administration, democratic process, and relationships among citizens, civil society, the private sector, and the state"* (Dawes, 2008, p. 86)

However, what becomes clear when reading and analysing this definition, is the fact that the definition does not provide detailed information on how the relation between the different actors is structured and what their roles are. This made Bannister & Connolly (2012) criticize it, underlining the too close connection it has to the concept of e-government. The authors defined e-governance as follows:

> *"the use of information and communication technologies […] in government in ways that either:*
>
> - *alter governance structures that are not feasible without ICT [information and communication technologies] and/or*

- *create new governance structures or processes that were heretofore not possible without ICT [information and communication technologies] and/or*
- *reify heretofore theoretical ideas or issues in normative governance"* (Bannister & Connolly, 2012, p. 11)

This definition has a general applicability, without including a prescription on what has to be focused on when working on the inclusion of information and communication technologies into the public administration. On the contrary, an example of a definition that does incorporate a stronger normative undertone is presented by Gil-Garcia, Dawes, and Pardo (2018), whereby the authors – referring and aligning themselves with the UNESCO definition of e-governance – underline a number of specific public values to strive for when working, as a public administration, on e-governance (UNESCO, 2011). The authors make specific reference to citizen participation, accountability, transparency and effectiveness (Gil-Garcia et al., 2018). The inclusion of those objectives – as public values – in the definition of what e-governance is, lead to the incorporation of e-governance into public management thinking, i.e. New Public Governance, in similar way as e-government was incorporated into New Public Management. Other authors, such as Meijer (2015), have a similar line of thought and refer to e-governance as the use of "new information and communication technologies to help government to strengthen the interactions with citizens and societal actors to solve societal problems collectively" (Meijer 2015, p. 199). This leads to a more narrow view on what e-governance is, as it only focuses on making use of technology to build, deploy and strengthen the connection between public administration, citizens and societal actors. e-Governance can however refer, as indicated in the above definition of Dawes (2008) and Bannister & Connolly (2012), to a much broader spectrum then solely being focused on this relationship.

Returning then to the definition of Bannister and Connolly (2012), a second important point is the fact that the definition incorporates three general objectives for e-governance. The first two objectives thereby refer to structural governance whereas the third one to normative governance. While structural governance is focused on how something is done, normative governance is focused on the testing of what is done in relation to the values striven for – *public* values in the context of the public administration. Structural governance may, but not necessarily, help to achieve normative governance. Structural governance refers as such to the overall organization that is applied by the public administration to act, whereas normative governance is focused on the public values that direct the acting of the public administration. The creation of public value, on the basis of the balance of public values, takes thereby a central role (Bannister & Connolly, 2014; Beck Jørgensen & Bozeman, 2007; Moore, 1995).

The question on what the exact difference is between a digital transformation and e-governance, however, remains unanswered. Whereas the differences between digital transformation and e-government as well as between e-government and e-governance are clear, the overlap between the concepts of e-governance and digital transformation is higher. Some authors make reference to the concept of digital transformation, while their focus actually lies on what would be considered to be e-governance (e.g. Troshani et al., 2018; Wouters et al., 2020, 2021). Both concepts underline the use of information and communication technologies in order to fundamentally rethink and reshape the functioning of the public administration, including the services offered and the required processes to offer those services. The use of information and communication technologies thereby impacts the overall functioning of the public administration as well as the reasoning on why the public administration functions in a certain way. A crucial difference between the two concepts is the fact that a digital transformation process is more profound and impacts the public administration and its relations with users and stakeholders in a stronger way, whereas e-governance is focused on the engagement of users and stakeholders (Barcevičius et al., 2019; Janowski, 2015).

As indicated at the beginning of this chapter, there is a willingness from political leaders to start – and ensure – a digital transformation of the public administrations. Declarations are announced and signed, and statements are made by politicians in parliaments and newspapers (De Croo, 2018; EU Ministers in charge of eGovernment Policy and Coordination, 2020; Ministers in charge of eGovernment policy and coordination from 32 countries of the European Union and the European Free Trade Area, 2017). However, the road to a digitally transformed public administration is still long and requires further research and guidance for and by the public administration itself. Discussing the concepts of digital transformation, e-governance and e-government, as well as their interconnection already partially demonstrated the complexity of public administration to make use of disruptive digital technologies.

At this stage of the thesis, an important assumption regarding the relation between e-government, e-governance and digital transformation has to be introduced. Given the fact that there is a lack of digitally transformed public administrations and a lack of academic insights on a digital transformation process, it has been necessary to assume that a digital transformation is influenced by similar factors as those influencing the inclusion of an e-government and/or e-governance perspective in public administration (Barcevičius et al., 2019; Curtis, 2019). However, it does not imply that the role of those factors is the same. Consequently, the material gathered for this thesis comes from public administrations that can only be considered to have implemented an e-government and/or e-governance perspective.

The next section will focus more deeply on the current knowledge concerning the factors influencing a digital transformation of a public administration. Given the (strong) connection between the different concepts, use will thereby be made of the literature on e-governance and e-government implementation factors. Furthermore, given that not a single public administration has managed to achieve what would be labelled as a digital transformation, the research of this thesis has to rely on the current academic knowledge concerning e-government and e-governance projects and research.

1.4 Factors influencing a Digital Transformation of the Public Administration

It could be argued that there is an overall agreement in academic literature that the inclusion of information and communication technologies in the public administration requires an organized approach (Pollitt, 2013). Only by setting-up and implementing such an organized approach, the use of information and communication technologies will be beneficial for public administrations as well as for those interacting with public administrations. As Curtis (2019) argues, "the focus of a digital transformation [...] is not so much about delivering new services, as about creating the environment for change to happen" (Curtis 2019, p. 323). Creating this environment for change to happen implies creating the right governance framework consisting of factors that can facilitate a digital transformation process (Kattel & Mergel, 2019; Sundberg, 2016). This governance framework can consist of a number of factors.

A vast collection of studies has been conducted to gain a better understanding of the factors that influence the use of information and communication technologies in the public administration. Overall, the literature makes a distinction between three types of factors. In order to avoid confusion, those 'types of factors' will hereafter be called 'layers'.

A first set of factors influencing the use of information and communication technologies is related to the **(intra-)organisational and managerial layer**. According to Klievink and Janssen (2009), this includes "the allocation of roles and responsibilities, cooperation between departments and processes and harmonizing processes with other related processes" (Klievink and Janssen 2009, p. 212). Also Luna-Reyes et al. (2016), Jonathan (2020) and Wouters, Crompvoets, and Lember (2021) found similar results on the importance of the organisational and managerial layer. Gil-Garcia and Sayogo (2016) found that in particular the availability of project manager(s) and financial resources is highly important for the (intra-)organisational and

managerial context. This was also confirmed by Chantillon et al. (2020). Chen and Lee (2018) also argue that management is highly important, but also related management to the wider importance of inter-organisational leadership.

This last finding sheds light on a second important layer, which is broader than the (intra-)organisational and managerial layer. It is the inter-organisational layer, to which Wouters, Janssen, and Crompvoets (2020) refer as "how or why organizations collaborate in networks" (Wouters, Janssen, and Crompvoets 2020, p. 225). Other authors take a broader perspective on this layer, and do not only include the inter-organisational aspects, but also the wider political aspects. Highly relevant in this regard is the fact that Klievink and Janssen (2009) referred to a 'network layer', which "includes the political and governance elements of power, trust, agreements, contracts and accountability" – the authors as such connect the inter-organisational aspects to political aspects (Klievink and Janssen 2009, p. 212). Gil-Garcia and Sayogo (2016) take a similar perspective, by referring to the 'political & institutional layer', and so does Troshani et al. (2018) by arguing that not only the national but also the international institutional factor can have an influence (Luna-Reyes et al., 2016; Troshani et al., 2018). Politics is considered to be a distinct factor in this study as well as in the study of Sundberg (2016). Also Jonathan (2020) takes a different perspective on the factor politics, and argues that this factor can be considered to be part of the broader environment or context. This layer will be labelled as the **political and institutional layer**.

A final, and third layer, is the **technology layer**, defined by Klievink and Janssen (2009) as the layer that is focused on "standards, interoperability and information sharing" (Klievink and Janssen 2009, p. 212). Wouters, Janssen, and Crompvoets (2020) state that the overall objective of the technology layer and the related factors is to work on the "integration of separate building blocks into functional services" (Wouters, Janssen, and Crompvoets 2020, p. 225). Also Gil-Garcia and Sayogo (2016) underline the importance of this technology layer, but add to this the importance of information. In particular, a reference is made by the authors to three types of factors: Interoperable standards, technical infrastructure and information security. In a similar vein, a number of other studies executed over the last years underline the importance of both technology and information as influencing factors (Jonathan, 2020; Luna-Reyes et al., 2016; Mergel et al., 2019; Wouters et al., 2020, 2021).

However, and in line with Meijer (2015), the value of implementing information and communication technology by and in the public administration does not lie in the digital transformation process related to it, but in the public value that can be created by this process. The actor interacting with the public administration, be it as a user of services or as a deliverer

of data, is not interested in the information and communication technology that is used by the public administration, but by the public value that is created by the public administration. The public value is in the end what is relevant for the actor interacting with the public administration (Chen & Lee, 2018; Meijer, 2015). When developing a governance for the inclusion of information and communication technologies in the public administration, focus does not only need to be devoted to the organisational coordination and collaboration or legal embeddedness of the information and communication technologies, but also to the establishment of a connection between public values on the one hand and the use of technology on the other. Therefore, devoting attention to public values can be considered a crucial element in the governance that influences a digital transformation process (Bannister & Connolly, 2014; Meijer, 2015).

On the basis of this overview of the academic literature, it could be argued that the governance framework for a digital transformation consists of three layers that, in themselves, include a number of specific factors. The first layer is the (intra-)organisational and managerial layer, the second one is the political and institutional layer, and the third layer is the technology layer. Although the precise conceptualization and meaning of the three layers can be discussed in more detail, the true value of touching upon those three layers lies in the fact that they contribute to an overall meta-understanding of how a digital transformation process is facilitated.

Although these three layers connect the concept of a digital transformation to the required governance framework, they require a more thorough and detailed study to have an academic and practical use. The political and institutional layer for example is highly relevant from a conceptual point of view, but within this layer a wide variation of specific factors can still be found. This thesis will therefore study a set of specific factors within each layer. Those factors have thus far only received limited attention by the scientific community, but can be considered to be highly relevant from a public administration transformation perspective. Finally, it is important to underline that no hierarchy between the three different layers is assumed. Indeed, all three are of equal importance and can furthermore influence each other. Take for example the political and institutional layer. This layer includes the international institutional context as a factor. Within the international institutional context agreements can be made on interoperability standards, which can in turn be considered to be part of the technology layer.

A public administration does not function in isolation. As indicated at the beginning of the introduction, the role of a public administration is to create public value for its users, and its requires also interaction with other public administrations (Brandsen et al., 2018; Hooghe &

Marks, 2001; Simonofski, Melin, et al., 2019; Troshani et al., 2018). This interaction is considered to be part of the context in which a public administration functions. This thesis devotes attention to this context, as it can be an important aspect influencing a digital transformation process in a public administration (César Casiano Flores, 2017).

Although all three layers have an equal importance, the reality of being human lies in the fact that one cannot be specialised in all aspects. Given that the expertise concerning the technology layer of a digital transformation is limited, it was decided not to focus on this third layer. This is a limitation of the research that has to be recognised. Leaving this layer out of the research scope of this thesis impacts the governance framework that will facilitate a digital transformation process (Gil-Garcia & Sayogo, 2016). However, conducting and including research on the technology layer would be a sign of overestimation of the own capacity. Furthermore, and as with all projects, certain choices need to be made in light of time and resource availability. Unfortunately, the research period has not allowed to devote more resources to the deepening of the capacity on the technology layer.

Figure 1.2 provides an overview of the theoretical conceptual model resulting from the currently known theoretical insights of the academic literature. The starting point is that a public administration is expected to create public value, for example by offering required services to users. In order to create such public value, a public administration can invest in a digital transformation process. A very recent example of such a clear motivation to invest in a digital transformation process, and thereby making a close connection to the creation of public value via the selection of certain public values, is the 2020 EU Ministerial Berlin Declaration on Digital Society and Value-Based Digital Government (EU Ministers in charge of eGovernment Policy and Coordination, 2020). A digital transformation will therefore require, as was explained above, a governance framework – or to put it differently, the governance framework can facilitate a digital transformation. It is necessary to draw the attention to the verb *to facilitate* (see also Section 1.5 Research Question and Sub-Research Question), which implies a positive stance towards the role of a governance framework for a digital transformation process. Indeed, the above mentioned factors – related to the three layers – are expected to have a positive impact on the digital transformation process. A lack, or incomplete / incorrect use, of those factors (or a combination of the factors) can however also impede the digital transformation process. For example, and related to the (intra-)organisational and managerial layer, the absence or insufficient availability of financial resources can impede a digital transformation process. Another example is related to the technology layer: The lack of the required technical infrastructure can negatively influence the digital transformation.

The governance framework presented here, grounded in the theoretical insights from the academic literature, consists of three layers that influence a digital transformation: The (intra-)organisational and managerial layer, the political and institutional layer, and the technology layer. Each of these layers, in turn, consists of a number of factors. These factors can be considered to facilitate a digital transformation process (Chantillon, Simonofski, et al., 2020; De Haes et al., 2013; ISACA, 2018)

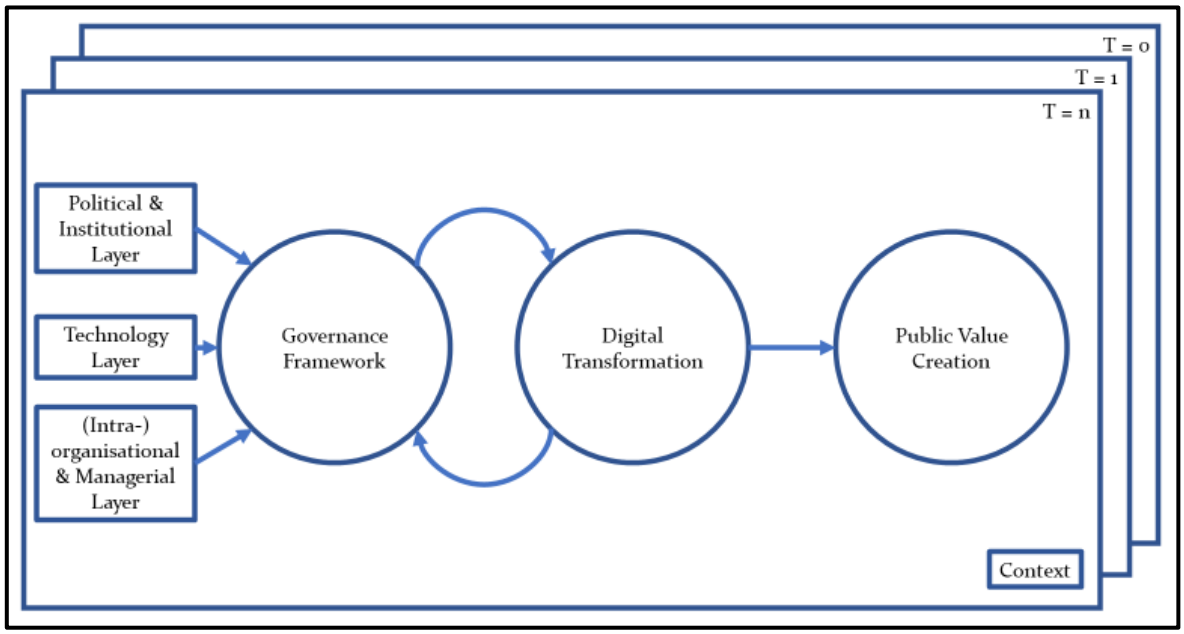

Figure 1.2 – Theoretical conceptual model

1.5 Research Question and Sub-Research Questions

On the basis of the above presented overview, and in particular the theoretical conceptual model (see Figure 1.2), the overarching research question to this thesis is the following:

What governance framework and related factors facilitate a digital transformation of public administration in order to create public value?

Although the connection between governance, the three layers and the concept of digital transformation has already been explained and clarified in the above presented section, this main research question still deserves further clarification on three points in particular.

Firstly, the objective, which does not focus on *the* digital transformation but instead on *a* digital transformation. This has been a deliberate choice as many factors can impact the use of information and communication technologies by the public administration, and as such a digital transformation of the public administration. A digital transformation will therefore not be a

'one-size-fits-all': There will be variation depending on multiple factors and the overall context, leading to different types of digital transformation processes of a public administration (César Casiano Flores, 2017). The use of the word *a* instead of *the*, signifies this underlying variation.

Digital transformation is considered as a process and not as the objective. The public value creation is the overall objective and goal of a digital transformation. Public value is the second key concept. In line with Moore (1995), Hartley et al. (2017) and Jaspers (2021) it has been defined as

> "*added value created through activities of public organizations and officials and is 'sometimes presented in terms of normative aspirations for a 'good society'"* (Hartley et al., 2017, p. 672; Jaspers, 2021, p. 40)[5].

The creation of public value is steered by the decision of public administration actors to focus on a number of public values. This is a crucial aspect of the governance framework, as it does imply that a digital transformation is not only the process, but also that the evaluation is not directly focused on a digital transformation itself. The evaluation of a digital transformation is focused on the outcome of a digital transformation process, and as such on the creation of public value (Moore, 1995; Osborne et al., 2016). A digital transformation is as such expected to lead to public value creation by the public administration. This digital transformation is a such impacting what the public administration does, how it functions, is structured and what it offers.

Secondly, the inclusion of the concept *public administration*. It is self-evident that a digital transformation can also take place within another context – think for example of private sector organisations. This study, however, focuses on public administrations. While this situation makes it highly relevant to study a digital transformation of public administrations, it also leads to a necessary and unavoidable assumption: The fact that there is a lack of digitally transformed public administrations leads to the necessity to gather empirical material from public administrations that can only be considered to have implemented an e-government and/or e-governance perspective and that are currently undergoing a digital transformation process. In order to be able to build a governance framework facilitating a digital transformation based on this material, this thesis builds as such on the assumption that a digital transformation is influenced by similar factors as those influencing the inclusion of an e-government and/or e-governance perspective. However, it does not imply that the role of those factors is the same.

[5] A detailed description and analysis of the concept of public value and the relation between the concept of public value (singular) and public values (plural) can be found in Chapter 3.

A third important aspect in the overarching research question is the verb *to facilitate*. Instead of opting for the verbs *to steer* or *to manage*, it was decided to use the verb *to facilitate*. To facilitate can be referred to as "[making] (an action, process, etc.) easy or easier, to promote, help forward; to assist in bringing about (a particular end or result)" (Oxford English Dictionary, 2021b). This is a crucial component and can be connected to what was referred to by Grindle (2004) and Rijke et al. (2012) as "good enough governance" (Grindle, 2004, p. 526; Rijke et al., 2012, p. 76). Reaching an optimal governance is impossible as it does not recognise uncertainty or the importance of contextual factors (César Casiano Flores, 2017; Pahl-Wostl et al., 2010). Any claims of those building optimal governance frameworks can be considered as overly optimistic. Furthermore, and given the importance of the context, a framework may not have the pretension to claim to provide *the* solution. A framework can only provide a map to understand components and relations between those components. In the end, the users of the governance framework will have to decide what action they undertake on the basis of the governance framework. The governance framework is only there to support their assessment of the situation (César Casiano Flores, 2017; Mondorf & Wimmer, 2017).

This study thusly focuses on a number of factors related to each of the three layers presented in the previous section. For each of the different factors a direct connection will be made to sub-research questions. Those sub-questions guide the research and ensure an answer to the main question of this manuscript. The first layer is **the political and institutional layer.** As explained earlier, the importance of a digital transformation does not lie in the digital transformation *an sich* but in the public value that is created as a consequence by the public administration (Meijer, 2015; Twizeyimana & Andersson, 2019). This requires public values to be selected and pursued by the public administration. The choice of those public values, and as such also the balance of the public values pursued by the public administration, is made within the political and institutional layer. The balance of public values decided upon in the political and institutional layer, as part of the governance that facilitates a digital transformation, can be considered as the input side, whereas the creation of the public value can be considered as the output side of a digital transformation process. Given the connection between the creation of public value and the decision on the balance of public values in a digital transformation process, the recently increased attention devoted to this connection by public policy makers (EU Ministers in charge of eGovernment Policy and Coordination, 2020; Ministers in charge of eGovernment policy and coordination from 32 countries of the European Union and the European Free Trade Area, 2017) and the lack of academic research devoted to the balance of public values in e-government policies (Bannister & Connolly, 2014; Beck Jørgensen & Bozeman,

2007; Beck Jørgensen & Vrangbaek, 2011; Vrangbæk, 2009), it is decided to focus on this factor in this thesis. Furthermore, studying the role of public values in e-government is highly relevant as it expected, on the basis of the literature, that public values can influence transformation processes within a public administration, this is for example indicated by Bannister & Connolly (2014) and by the OECD (2019). The following sub-research question is asked concerning the public values factor:

1. **What public values are prioritized in the e-government policies of public administrations? (Chapter 2)**

Furthermore, a second sub-research question that builds the bridge between public values, as part of the political and institutional layer, and coordination (and related coordination instruments), as part of the (intra-)organisational and managerial layer was included in the thesis:

2. **What is the connection between public values and coordination instruments in the e-governance policy of a public administration? (Chapter 3)**

This second sub-research question was selected as a digital transformation process is expected to have a profound impact on the public administration – more profound then e-government or e-governance. It consequently requires a clear perspective on public values and coordination, as the coordination and the use of related coordination instruments is – besides the public values – also expected to facilitate and to steer the digital transformation process. Furthermore, given the overall aim of creating public value via the digital transformation, it is required to understand what the relation is between public values and coordination. Indeed, the public values, and related coordination, play a crucial role in creating public value (Bozeman, 2002a; Nabatchi, 2018). Therefore the connection between the two concepts was studied (Lucas & Goh, 2009).

Concerning **the (intra-)organisational and managerial layer**, i.e. the second layer, research was undertaken on the impact of the organisational structure and the use of coordination mechanisms between the public administration organizations offering e-services. Coordination between organizations is a crucial factor as e-services have often been developed by organizations on a (more) individual basis (Affisco & Soliman, 2006; Latre et al., 2013). This research was conducted in the domain of geospatial e-services and data. The domain of geospatial e-services and data is attracting more and more attention but has at the same time the disadvantage of being complex and difficult to understand for policy makers (Masser et al.,

2008; Masser & Crompvoets, 2015). It is however a domain that takes a central position in the field of a digital transformation and functions as a crucial factor to enable a digital transformation (Barbero et al., 2019). The geospatial data can be considered as a key component in the services provided by public administrations. Indeed, most of the public services offered by public administrations require geospatial data (European Commission, n.d.; Sjoukema et al., 2020).[6] Concerning the (intra-)organisational and managerial layer, this thesis has focused on the following sub-research question:

3. **What factors impact the governance structure of geospatial e-services? (Chapter 4)**

Besides those two layers, this thesis devotes attention to the wider **context** – as indicated in Figure 1.2. In line with the two layers, two additional context factors were studied in detail, namely the impact that public administrations have on each other and the role of public values on the decision of civil servants to organize a user-participation process. Concerning the first factor, and as indicated by Troshani et al. (2018) there is not only the national institutional context that matters for a public administration, but potentially also the international one. This thesis has focused on the role of multi-level governance, whereby it was decided to study two sub-policies of an e-government policy – i.e. open data and inter-organisational information sharing. Understanding the impact of public administrations on each other proves to be important in an e-government process, and is expected to be relevant as well in a digital transformation process (Luna-Reyes et al., 2016; Troshani et al., 2018). Consequently, this research question makes a connection between the context and the two other layers studied in this thesis. Concerning this first factor, the following sub-research question was asked:

4. **What is the impact of multi-level governance on the e-government policies of a public administration? (Chapter 5)**

The second context factor is focused on the relation between user participation methods and the public values striven for by decision makers. Several factors impact the decision on whether or not to include users in the development of e-services, and if so, on how the users can be included (Gascó, 2017; Lember et al., 2019; Rodriguez Müller & Steen, 2019; Simonofski, Melin, et al., 2019; Simonofski, Vanderose, et al., 2017). Given the growing importance of user participation in the development of (e-)services, it is deemed relevant and necessary to devote attention to this topic in relation to a digital transformation (Rodriguez Müller et al., 2021; Steen

[6] This focus on geospatial e-services and data is at the same time also a limitation, as is indicated in Chapter 8 – Section 8.2 Limitation: Reflections on the study design and research approach.

et al., 2016). Indeed, it is assumed in the literature that the involvement of users and the selection of user participation methods can facilitate a digital transformation process, as their involvement can steer the transformation in the direction desired by the service users (OPSI - Observatory of Public Sector Innovation, n.d.) However, instead of studying the topic of user participation and the selection of methods from a user perspective, it is decided to focus on the more neglected topic of civil servants making a choice on user participation methods. In particular the role of public values in making a selection of user participation methods is studied. Consequently, a connection is made to the political and institutional layer. Concerning this second factor, the following sub-research question is asked:

5. **How do public values impact civil servants in their selection of user participation methods for the development of e-government services? (Chapter 6)**

The overarching research question guiding this research will be answered in Chapter 7 of the thesis. A detailed overview of the thesis structure is provided in the next section of this introductory chapter.

1.6 Structure and Composition of the Thesis

This thesis is structured in three Sections and eight Chapters (as presented in Table 1.1). The introductory chapter is covered in Section I, and provides the reader with a conceptual and theoretical overview of the manuscript. Section II is focused on the different sub-research questions and studied factors. In Chapter 2 research on the relation between public values, public value creation and the e-governance of public administrations is presented. Chapter 3 complements the research of Chapter 2 and presents research on the relation between public values, the applied coordination instruments and e-governance. Chapter 4 is focused on the organisational structures and use of coordination instruments in the geospatial domain. Chapter 5 presents research on the role of multi-level governance in the e-governance of public administrations. Chapter 6 completes the research on the different factors by looking at the relation between public values and user participation methods.

Table 1.1 – Structure and Composition of the Thesis

Section I – Introduction
Chapter I – Introduction
Section II – In-depth studies
Chapter 2 – Prioritizing public values in e-government policies: A document analysis
Chapter 3 – Unravelling the relation between Public Values and Coordination Instruments – A Case Study of e-Governance
Chapter 4 – The Governance Landscape of Geospatial E-Services: The Belgian Case
Chapter 5 – Analysing e-government through the Multi-Level Governance lens: An exploratory study in Belgium
Chapter 6 – The Influence of Public Values on User Participation in e-Government: An Exploratory Study
Section III – Framework & Conclusion
Chapter 7 – A Governance Framework for a Digital Transformation
Chapter 8 – Conclusion

Section III includes Chapter 7 and Chapter 8. An answer to the main research question of this thesis is given in Chapter 7, where the conceptual framework is presented. Finally, the conclusions of this thesis are presented in Chapter 8. Figure 1.3 provides a visualised overview of the thesis, thereby making the connection to Figure 1.2.

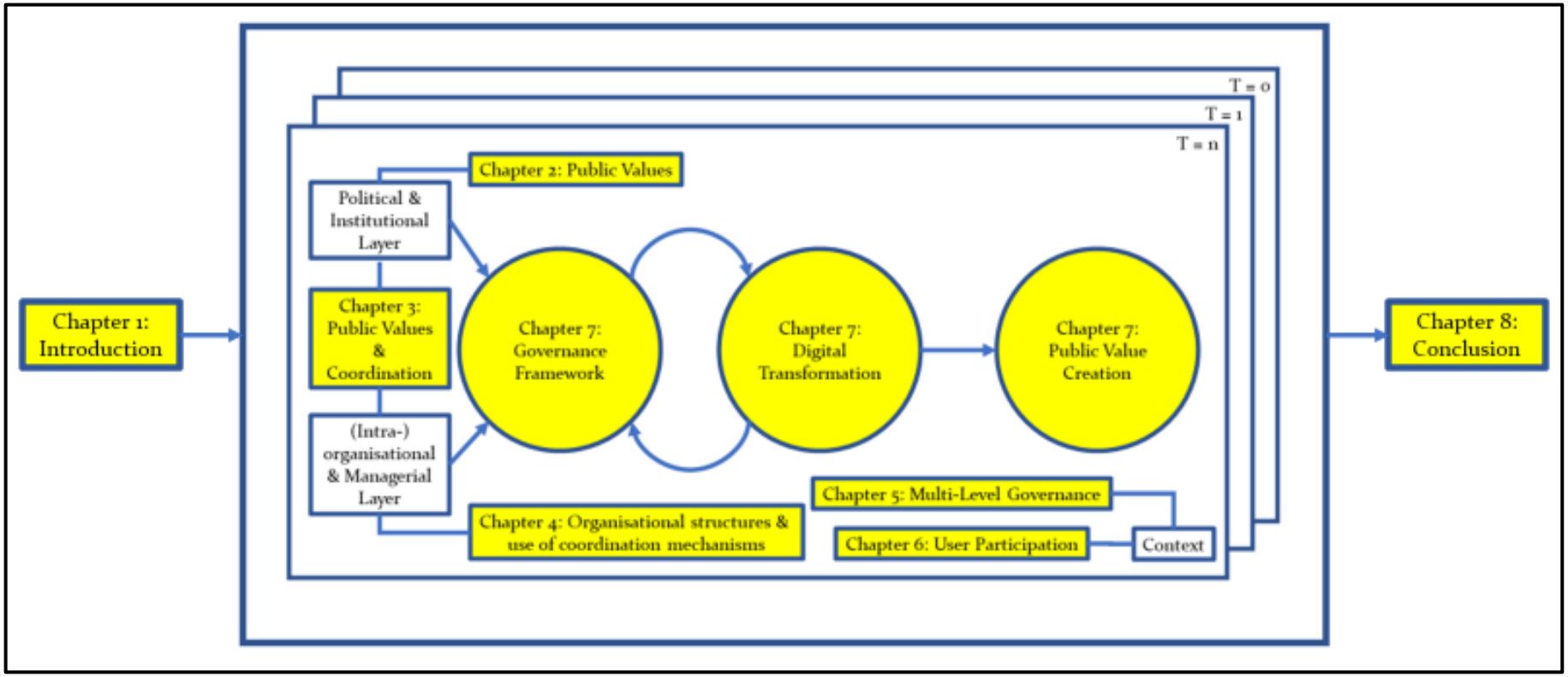

Figure 1.3 – Theoretical conceptual model connected to thesis structure

1.7 Ontological and Epistemological Reflections

Besides this chapter, Chapter 7 and Chapter 8, this thesis consists of different chapters that have been published elsewhere or that are currently under review.[7] Therefore, this thesis does not include a separate methodological chapter. Consequently, the individual chapters include detailed information on the methodological approach that was followed to answer the research questions and to achieve empirically sound data and results. It was nevertheless deemed relevant to include in this introduction a brief overview of the methodological approach taken in the different chapters, and as such in and for this thesis.[8] This approach will be explained by applying the Research Onion model developed by Saunders, Lewis, and Thornhill (2019). The model is presented in

Figure 1.4 and consists of six layers: (1) the Philosophy, (2) the Approach to theory development, (3) the Methodological choice, (4) the Strategy(ies), (5) the Time horizon and (6) the Techniques and procedures. This last layer will not be explained here, but is dealt with in each chapter individually.

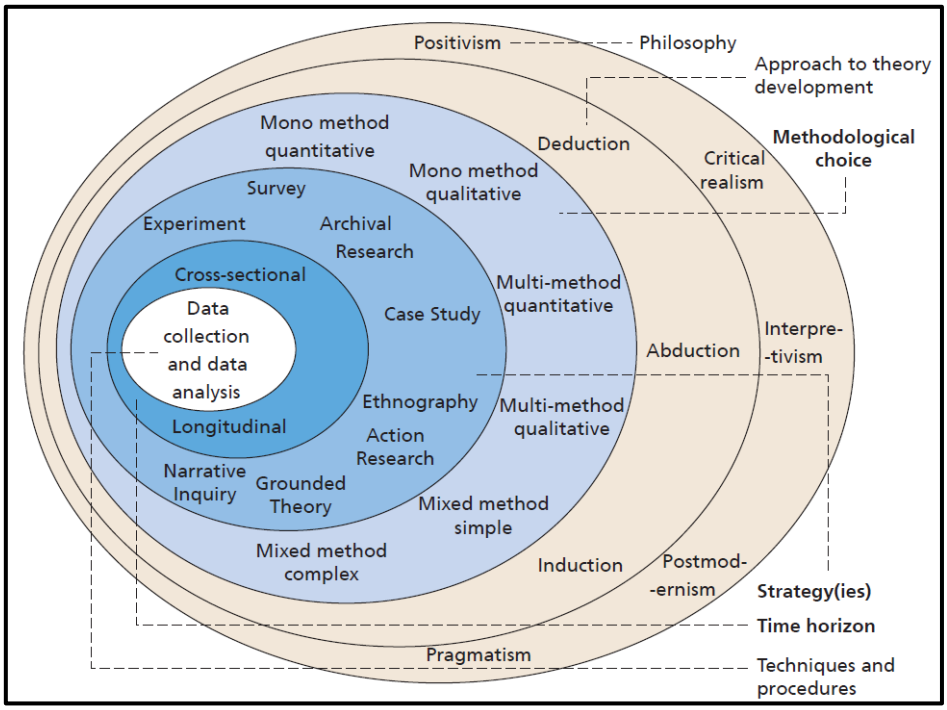

Figure 1.4 – The research onion (Saunders et al., 2019, p. 130)

[7] The chapters 2, 3, 4, 5 and 6 are all published or under review elsewhere. Chapter 5 has been further developed for this thesis. All chapters include a reference to the original publication. Whenever necessary corrections have been made to the original published documents (e.g. grammatical corrections).

[8] As Chapter 8 is focused on the conclusions of this research, no specific methodological information is provided for this chapter.

Considering the first layer, i.e. the research philosophy, this thesis takes a critical realist / pragmatist position. Critical realism starts from the need to explain what can be observed and experienced on the basis of underlying reasons. There is as such a willingness from the researcher to explain events via causes and mechanisms that are identified via specific methodological choices. The researcher adheres as such to the belief that an event, or a situation or problem, that is being studied is influenced by an underlying reason or reasons, which can then be identified (Bryman, 2016; Saunders et al., 2019).

Pragmatism, the second research philosophy influencing this work, starts from the need to solve a specific problem that society is confronted with. It is as such an open minded approach, not guided by specific philosophical needs, but by specific practical difficulties. This philosophy takes a step back from the philosophical debate on research approaches, and is more focused on finding explanations (and if possible solutions) to existing problems by making use of any type of methodological approach that can be useful for finding such a solution (Bryman, 2016; Saunders et al., 2019). Pragmatism has been followed throughout this thesis as a research philosophy as a result of the research being funded by public administrations who faced a specific problem, and required a solution to their problem. This led to a more pragmatic and less philosophical approach. The methods that are used in light of this research philosophy are expected to lead to a solution, regardless of the researcher's personal views and opinions. Furthermore, pragmatism requires an open perspective and methodology to investigate and understand the complex reality (Goldkuhl, 2012).

From an epistemological point of view, the critical realist position is among others reflected in the case study and longitudinal approach that is taken in various chapters of this thesis. Both a case study and longitudinal approach allow for an in-depth research approach, which makes it possible to identify underlying reasons that influence a situation or problem. The reality that is observed is as such part of a larger context that requires to be taken into account. Pragmatism, from an epistemological point of view, is oriented towards the solving of problems, the contribution to practice, and the identification of the practical meaning of knowledge.[9]

A second layer of the research onion considers the approach taken towards theory development. From this point of view, the research follows mostly a deductive approach. This overall deductive approach is however influenced by induction. The deductive approach is observable in each of the different chapters of this thesis. Every chapter start from an academic literature

[9] The different chapters of this thesis are research publications published in light of practice oriented research projects, and in particular BELSPO BRAIN-be FLEXPUB (2016-2020).

analysis of what is known on the identified problem. Furthermore, the conducted research is always influenced by theoretical knowledge via the theoretical framework. A similar logic is applied to the research results and analysis. In this way, the research is strongly embedded in the existing theoretical insights, to which the results of the research then contribute. However, the conducted research also has a flavour of induction. As will be made clear in the different chapters of this thesis, there was in some cases only limited theoretical knowledge available, forcing the researcher to take a more inductive approach. This deductive – inductive balance is also enshrined in the overall approach taken for this thesis: The main research question is embedded in the theoretical knowledge, but it has to be recognised that the theoretical knowledge on the studied topic remains limited and requires further development. The research thus starts from theory, but takes an open mind and supplements in turn the theoretical knowledge.

The different chapters of this thesis all follow the same logic concerning the research philosophy and the approach taken towards theory development. Concerning the three following layers, a more detailed account will be given for the different chapters. Those three layers are therefore also discussed together – i.e. the methodological choice, the strategy(ies) and the time horizon.

Chapter 2 follows a mixed methods approach, and more specifically a fully integrated mixed methods research approach. This approach combines qualitative and quantitative methods in the research (Saunders et al., 2019). The research takes a longitudinal focus, and was executed via archival research combined with a multi case study approach.

Chapter 3, in line with Chapter 2, also follows a mixed methods approach. The specific approach is however different: A concurrent mixed methods research approach is applied, referring to the use of both quantitative and qualitative research methods in the data collection and analysis within a single phase (Saunders et al., 2019). Furthermore, this research can be considered to take a partially integrated mixed methods research approach as both qualitative and quantitative methods are combined in one stage of the research (Saunders et al., 2019). From a practical point of view, the research takes a single longitudinal case study approach, combined with archival research.

Concerning the methodological approach, Chapter 4 is similar to Chapter 3, with the main difference being the use of a fully integrated mixed methods research approach. Indeed, all stages of the research combine both qualitative and quantitative methods. A single cross-sectional case study approach is applied, combined with a survey and archival research.

Chapter 5 is the only research that was not executed via a mixed methods approach, but solely via a qualitative approach. The research applies a multi-method qualitative study, whereby "more than one qualitative technique and corresponding analytical procedure" is used (Saunders et al., 2019, p. 179). Also, this chapter takes a single case study approach in combination with archival research. Also here a longitudinal focus is taken.

Chapter 6 takes again a mixed methods approach and more specifically speaking an embedded mixed methods research approach as the qualitative aspect can be considered to dominate the quantitative aspect of the research. The quantitative aspect has a more supportive role in relation to the qualitative approach. The research is executed via a cross-sectional multi case study approach.

Chapter 7 provides an answer to the main research question by presenting a *Governance Framework facilitating a Digital Transformation of the Public Administration*. As mentioned at the start of this section, this thesis follows mostly a deductive approach that is supplemented with a flavour of induction. The development of the governance framework fits within the methodological approach that is applied for developing conceptual frameworks. Chapter 7 builds on several sources: Results of the studied factors and their relations presented in the Chapters 2 to 6 and visualised in the theoretical conceptual model of Figure 1.2, existing theoretical and exploratory research insights available in the academic literature, a validation round with experts and the expertise built-up as a researcher. As a results, the development of this Chapter is aligned with what is generally speaking considered to be a valid approach to develop conceptual frameworks (Collins & Stockton, 2018; Jabareen, 2009; Maxwell, 2013).

1.8 Research Scope: The Belgian Federal Administration, embedded in Belgium and the European Union

As explained when introducing the main research question of this thesis, a digital transformation is highly dependent on a number of different factors and the context in which it takes place. Therefore, following Casiano Flores (2017) it is decided to conduct the research on the different studied factors in a similar context. In that way, the contextual environment can – to a certain extent – be controlled for and understood. The research is executed in the Belgian-European context. For all conducted research, the starting point is the Belgian federal administration, and more specifically the policy concerning the inclusion of information and communication technologies in the administration and in the relation towards its users. The

relation to other Belgian public administrations and the EU institutions can be considered to be an important part of the contextual environment (Alen & Muylle, 2012; Hooghe, 2012). As Hooghe (2012) argues, the Belgian federal government can be considered to be embedded in a multi-level governance context (Hooghe, 2012). The position of the Belgian federal administration in relation to other Belgian public administrations, EU Institutions and other EU Member States is presented – in a simplified way – in Figure 1.5.

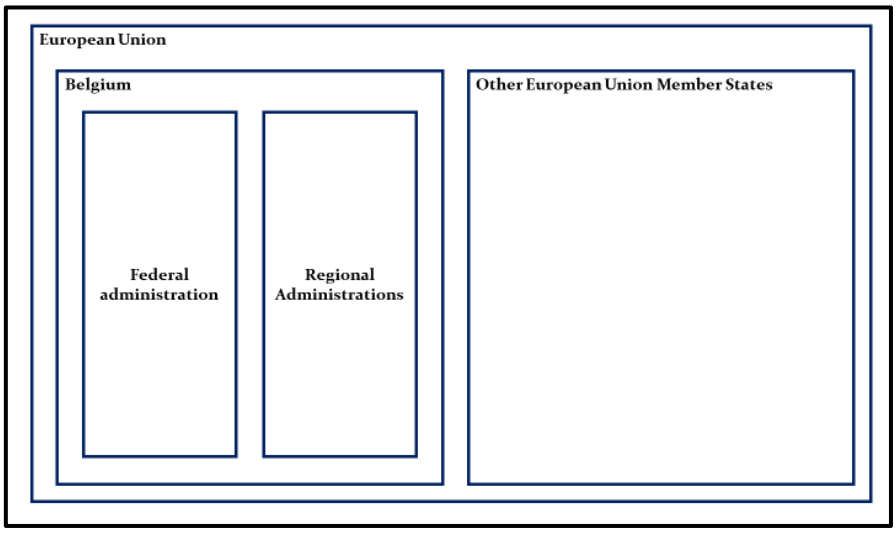

Figure 1.5 – Belgian federal administrative relation to other Belgian administrations and EU

Besides focusing the research on a specific national and constitutional context, two specific policy aspects are studied. The research focuses on, as a first aspect, the horizontal policy concerning e-government and e-governance by the public administration, thereby making use of the aforementioned assumption on the relation between e-governance, e-government and digital transformation. The second research aspect is the domain of the geospatial service delivery and related data. Hence, the research reflects two points of view – a general policy perspective as well as a policy-specific perspective. Both are related and distinct from each other. The horizontal policy on the use of information and communication technology is more and more recognising the relevance of geospatial data and services as well as the possibilities created by it for the horizontal policy, although not always understanding the complexity of the geospatial data and services (Latre et al., 2013).

Section II – In-depth Studies

Chapter 2 Prioritizing public values in e-government policies: A document analysis

Note

This Chapter has been published as the following article:

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2.1 Introduction

As Savoldelli, Codagnone, and Misuraca (2014) argue, public administration actors around the globe have attempted to reform their public administration by relying on public governance approaches as well as on the use of information and communication technology. Especially in the last two decades, public administrations have in this regard turned to the development of e-government policies to modernize their administrations and service delivery to their users. There is an ongoing expectation that the use of information and communication technologies via an e-government policy will lead to increased efficiency and effectiveness, the end of silo structures and the offering of more personalized citizen services (Bannister & Connolly, 2018; Cordella & Bonina, 2012; Cordella & Paletti, 2018). An e-government policy, here defined as the approach on "the use of ICT [information and communication technologies] in order to design [...] or redesign information processing and communication practices in order to achieve a better government", is influenced by the governance approach that is taken by the government and public administration (Meijer & Bekkers, 2015, p. 237).Whereas in the 1980s and 1990s the traditional Weberian bureaucracy approach was criticized by New Public Management, more recent critiques on New Public Management reforms led to the emergence of other governance approaches and related public values. One can think thereby of New Public Governance and ideas on coproduction and co-creation. Haug (2018), for example, argued that technological developments are putting pressure on the hierarchy related governance approach, leading to opportunities for the network related governance approach (Haug, 2018). Cordella & Bonina (2012) also argue that New Public Management has strongly influenced ways to assess the use of information and communication technologies by public administrations, as well as the use of those technologies via e-government policies.

Conducting an e-government policy leads to the need to prioritize certain public values, which are 'normative concepts that are used to give direction to public action and/or legitimize such action' (Jaspers & Steen, 2018; Karkin & Janssen, 2014). Such a prioritization refers to the dominance of certain public values in a policy. Current academic research shows a number of limitations in this respect, especially on the attention given to the transformative effect of e-government policies on public values and related governance approaches (Terzis, 2017). Although the overall study of public values has received robust attention (Beck Jørgensen & Bozeman, 2007; Bozeman, 2000, 2009; Moore, 1995), the relationship between public values, related governance approaches and e-government policies remains largely neglected, from a

theoretical and, even more so, from an empirical point of view (Beck Jørgensen & Bozeman, 2007; Beck Jørgensen & Vrangbaek, 2011; Jaspers & Steen, 2018; Vrangbæk, 2009).

In this chapter we aim to improve current knowledge of the public values balance in e-government policies. A prioritization of certain public values will take place when conducting an e-government policy and this leads to the fundamental question on what public values and related governance approaches are present in e-government policies of public administrations. The following research questions guide the research, whereby this first research question can be considered to be the main research question (see Chapter 1. Introduction): **(1) What public values are prioritized in the e-government policies of public administrations?**, **(2) how are the public values present in the e-government policies connected to a governance approach?** and **(3) how can public values prioritization be explained?** Research is executed via an analysis of e-government policy documents created between 2000 and 2018 by the Belgian federal administration, the United Kingdom central administration and the EU.

The chapter continues with an explanation of the methodology that has been followed to conduct this research. Afterwards, and in order to be closely aligned to Section 4, the results section, the concepts of public values and governance approaches are explained on the basis of the existing literature. This section helps to understand how the literature approaches the research questions. The concepts are defined and a typology which connects public values and governance approaches is presented. The Results section presents the main findings of this document analysis with a focus on the prioritized public values in the e-government policy documents and the factors explaining the potential change in the public values balance. The Discussion, Section 2.5, focuses on the relation between public values and governance approaches in an e-government context and builds a bridge between the public values and the public values creation by public administrations. A conclusion and forward looking perspective follows in Section 2.6.

2.2 Methodology

In this methodology section, the five different steps that are followed to conduct this research are explained. The overall methodology is presented in Figure 2.1. First an overview of the case selection is given, followed by the document selection, the document analysis, the data analysis and finally the analysis reporting.

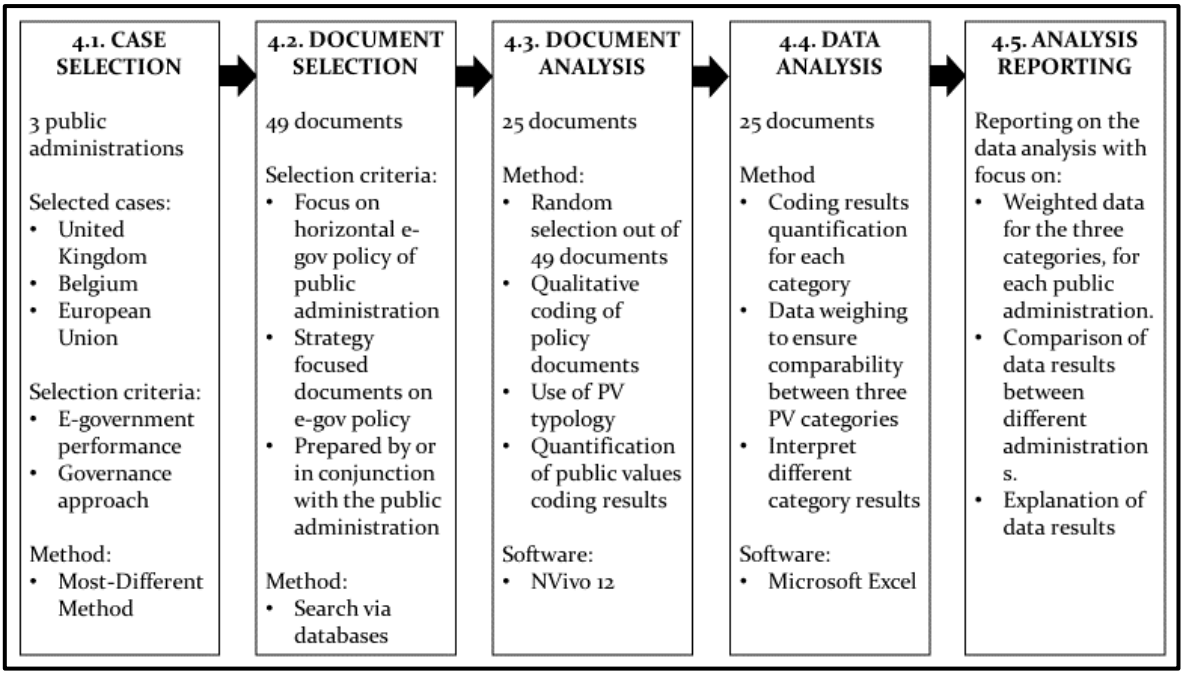


Figure 2.1 – Methodological research approach

2.2.1 Country case and time period selection

Three public administrations were selected, two traditional national public administrations and the EU. It was decided to select Belgium and the United Kingdom for three reasons. Firstly, the two countries have a different governance approach, ranging from a more traditionally oriented Weberian bureaucracy to strongly New Public Management-oriented structures, sometimes influenced by more recent governance approaches. An overview is provided in Table 2.1. Belgium has a stronger legacy of the traditional Weberian bureaucracy, with some influences of New Public Management and New Public Governance. The United Kingdom was originally a Weberian bureaucracy, but evolved into an administration with strong New Public Management characteristics. Looked at from a European perspective, it is also clear that both countries have different governance traditions: Belgium has a continental tradition, whereas the United Kingdom has an Anglo-Saxon tradition. The different ways in which these public administrations are governed make an analysis of both cases relevant. A second reason for selecting those two public administrations is the fact that both countries differ in terms of their e-government developments. Since 2004 the United Kingdom has always scored higher than Belgium on the United Nations E-Government Index where Belgium has consistently scored slightly lower. Finally, both countries were selected for practical reasons as well. The authors have an extensive knowledge of the e-government policies, the overall governance approaches and political situations in the countries and the authors have a mastery of the languages of both countries.

In addition to the United Kingdom and Belgium, it was also decided to analyse the e-government policy of the EU. The EU cannot be regarded as a traditional public administration and can therefore not be compared with the other two public administrations. The Union has no competence in defining the e-government policies or strategies of Member States (Publications Office of the European Union, 2016). It does, however, have an important impact on e-government developments for EU Member States via legally binding and non-binding actions in other domains where the EU has competencies (De Coninck & Van Hecke, 2018). EU Member States do not function as self-standing public administrations that are not influenced by other public administrations. The EU has a key influence on public administrations as shown by Hooghe & Marks (2001, 2003). The EU is to this end relevant to analyse, as there is the expectation that the public values balance at EU level also influences Member State administrations. At the EU level the horizontal and strategic e-government policies developed by the European Commission, the Council of Ministers, the European Parliament and the Ministerial Declarations are examined. This can, for example, include Minister Declarations such as the 2009 Malmö Declaration or 2017 Tallinn Declaration, the Directives and Regulations that influence e-government development at the level of the Member States or the non-binding EU Action Plans on E-Government or the Interoperability Framework developed by the European Commission.

Table 2.1 – Case study countries: Characteristics

Country	Administrative level	Governance approach
Belgium	Federal administration	Originally Weberian bureaucracy, influenced by New Public Management. Experiments with New Public Governance and co-creation/coproduction.
United Kingdom	Central administration	Originally, a strong Weberian bureaucracy, reforms in 1980's and 1990's (non-devolved parts) created a public administration with strong New Public Management characteristics.

Source: Pollitt & Bouckaert (2017).

The period of analysis runs from 2000 to 2018. This has been a deliberate choice as it seems that the year 2000 was an important year for public administrations around the world initiating strategic and horizontal e-government policies. At the Belgian level, for example, it was decided in that year to launch a horizontal e-government organisation. In addition, countries such as Singapore and Brazil started to invest more funds in their e-government policies (Ke & Wei, 2004; Musafir, 2018; SPF BOSA, 2019). Whereas the United Kingdom and the EU already published a number of relevant policy documents before 2000, it was considered necessary to cover a period in which the three public administrations would have published horizontal e-

government policies. Otherwise it would not be possible to make a comparison between the two national public administrations and the EU. Therefore we decided to focus our research on this period.

2.2.2 Documents selection

Documents defining the horizontal strategic direction of the e-government policy were selected for the analysis. The concept of 'horizontal' e-government policies, refers to policies that are developed for the entire public administration. The policies are supposed to cover all different policy areas in which the public administration is active and are as such not developed for a specific policy area. For the two traditional public administrations (Belgium/ United Kingdom) this implied a focus on non-legally binding documents as those documents define the strategic direction of the e-government policy. All the documents focus on the e-government policy as a self-standing horizontal policy domain and where prepared or co-prepared with the ministerial cabinets, by the administrative organisation that is responsible for the e-government policy of the administration. The documents are all of strategic nature and set the direction for the future developments of e-government activities. None of the documents have a technical or operational nature. The strength of working with strategic documents is the fact that they are more abstract and therefore often include more information on the prioritized public values. At the EU level, both legally binding documents (Directives, Regulations) and non-legally binding documents (Action Plans, Ministerial Declarations etc.) were selected. The first category has a defined impact at the national level and is therefore of crucial importance for national e-government developments, the second category is more strategic and includes as such also a clear orientation to public values.

The first step of the policy document selection was to define a list of policy documents that would be as complete as possible. To this end it was decided to apply a mix of purposive sampling and snowball sampling (Bryman, 2016). None of the three public administrations has a structured overview of e-government policy documents that were published by the public administration during the analysed period. As a result of this the authors were forced to make use of this combined sampling strategy: Some e-government policy documents of each public administration were, because of earlier research, known to the researchers. This can be labelled as purposive sampling. Those documents then served as an entry point for finding other policy documents to be included in the analysis: Based on references in the documents that were known in advance to the researchers, extra documents were selected. All documents were selected on the basis of three criteria: The focus had to be the horizontal e-government policy

of the public administration, the documents had to be of a strategic nature and the documents had to be prepared by the public administration or in collaboration with the public administration.

Table 2.2 – Number of selected document and analysed documents

	Selected documents	# Selection analysed documents
Belgium	20	10
United Kingdom	13	7
EU	16 (8 legally binding texts/8 non-legally binding)	8 (4 legally binding text/4 non-legally binding texts)

Once a list of documents was created for each administration, random sampling was carried out on each of the three document lists whereby half of the documents were selected. Half the documents were selected for two reasons. First, there is a practical argument: It would have been impossible to analyse all documents due to limited resources. Secondly, and more importantly, each document requires a thorough analysis in the reporting. Analysing all documents would lead to an overload of information to be reported. An overview of the numbers of selected and analysed documents can be found in Table 2.2. A complete overview of all documents can be found in the Annexes 2.1–2.3.

Choosing for a policy document analysis is a deliberate choice. Since research focuses on the period 2000 to 2018, there would be a strong risk for a memory bias if this research is conducted via interviews with civil servants. Besides the fact that it is impossible to recollect what and why certain decisions were taken over such a long period, also the ideas of individuals on values might change and would influence the research results. Secondly, we defined public values as being 'distinctive of an individual or characteristic of a group'. Policy documents fit this definition in an excellent way: They have been prepared by groups of people and can as such be regarded as disconnected from the individual level.

2.2.3 Document analysis

The public values typology presented in Table 2.3 was used for the coding of the policy documents. The applied public values typology has been obtained on the basis of one group discussion and four bilateral discussions. Each public value was defined and in this way a comprehensive coding scheme was obtained. The coding itself took place in NVivo 12, a qualitative text analysis software. A closed coding approach was applied. Only those public values that are part of the typology as presented in Table 2.3 were used for the coding, in order to ensure that the document results are comparable. A sentence or word group could refer to

one public values or to several public values, if the latter was the case then different codes where assigned to the same sentence or word group. In one sentence or word group references could be made to two or more public values. Making the decision on assigning this sentence or word group to only one public values would lead to biased results. So if this situation appeared, it was decided to assign the sentence or word group to the different public values that related to it. The authors completed the coding: The first author was responsible for the coding of all the

Table 2.3 – Public values typology according to governance approaches

Hierarchy related public values	**Market related public values**	**Network related public values**
Responsibility to the citizen (X)	Efficient use of public funds (X)	Equality of treatment and access (X)
Responsibility to the elected politicians of the day (X)	Respect for the individual (X)	Consulting societal organizations (Z)
Compliance with the law (X)	Service to the citizen in his/her different roles (X)	Balancing different interest (Y)
Accountability to government (X)	Economy/parsimony (X)	Consulting citizens (X)
Rectitude (X)	Responsiveness (X)	Consulting enterprises (Z)
Responsibility to the enterprises (Z)	Effectiveness (X)	Inclusiveness (X)
Responsibility to societal organizations (Z)	Efficiency (X)	Develop networks (Y)
Protecting citizens from exploitation (X)	Service to enterprises (Z)	Consulting other administrative level (Z)
Protecting citizen security (X)	Satisfying user's needs (Y)	
Protecting enterprise security (Z)	Productivity (Y)	
Protecting societal security (Z)	Innovation orientation (Y)	
Impartiality (X)	Service to societal organizations (Z)	
Political loyalty (Y)		
Judicial values/due process (Y)		
Accountability towards society in general (Y)		
X = Bannister and Connolly (2014)/Y = Vrangbæk (2009)/Z = Personal Addition.		

Source: Bannister & Connolly (2014); Vrangbæk (2009); Personal Research.

documents and the co-authors reviewed the coding process. In this way the authors were able to ensure that the data was always coded by the same person and that there was no difference

in the way that the different documents were coded. The coding scheme can be found in Annex 2.4, the data obtained from the coding can be found in Annex 2.5.

2.2.4 Data analysis

Once the policy documents had been coded, the data for each document was grouped, weighted and interpreted. For each of the three public values categories (hierarchy, market and network), the public values were added up to get an overview of the total number of references to public values in one category. After this, the data was weighted in order to make the results of the three categories comparable. This was a necessity since there are three public values categories that each consist of a different number of public values. The weighting was conducted as follows: The total sum of public values references for each category was multiplied by the factor representing the balance between the total number of public values (35) divided by the number of public values for each category (hierarchy: 15 public values, market: 12 public values and network: 8 public values). On the basis of the weighted data, the percentages were calculated to represent the results in a relative way, that is, one category represents a percentage of the total amount of public values references found in each analysed document. By making use of this approach, the data for each analysed document could be compared and analysed.

2.2.5 Assumptions and limitations

There is a number of important limitations and assumptions which we would like to clarify before presenting the results of the analysis. Firstly, it has to be underlined that the number of documents related to the e-government policy of public administrations was too high for a well-executed qualitative text analysis. A first list of documents was created on the basis of purposive sampling and snowball sampling, as explained above, and on the basis of this list a random selection was made. The list which resulted of this random selection was then analysed. A first risk is that the purposive and snowball sampling strategy did not detect all relevant policy documents. A second risk is that the random sampling led to a loss of relevant information which is not included in the analysis. Secondly, public values are a complex study object: We have for this purpose, on the basis of one group discussion and four bilateral discussions, made a precise selection of the public values, left out public values which did to not relate clearly to a certain governance approach and defined the public values. However, the typology developed in this chapter is open for criticism and debate. Finally, a document analysis requires a certain level of interpretation: The public values are all defined but there remains a risk for a certain interpretation which might in turn lead to an interpretative bias in the final research results.

2.3 Public values, governance approaches and e-government policies

By reviewing the existing literature on the concepts of public values, governance approaches and e-government policies, we established a public values typology connected to governance approaches. First, the concepts of public values and governance approaches are clarified, afterwards the relation between public values and governance approaches is analysed and finally this is done for the relation between public values and e-government policies. Figure 2.2 presents the conceptual connections thereby referring to the structure of the paper.

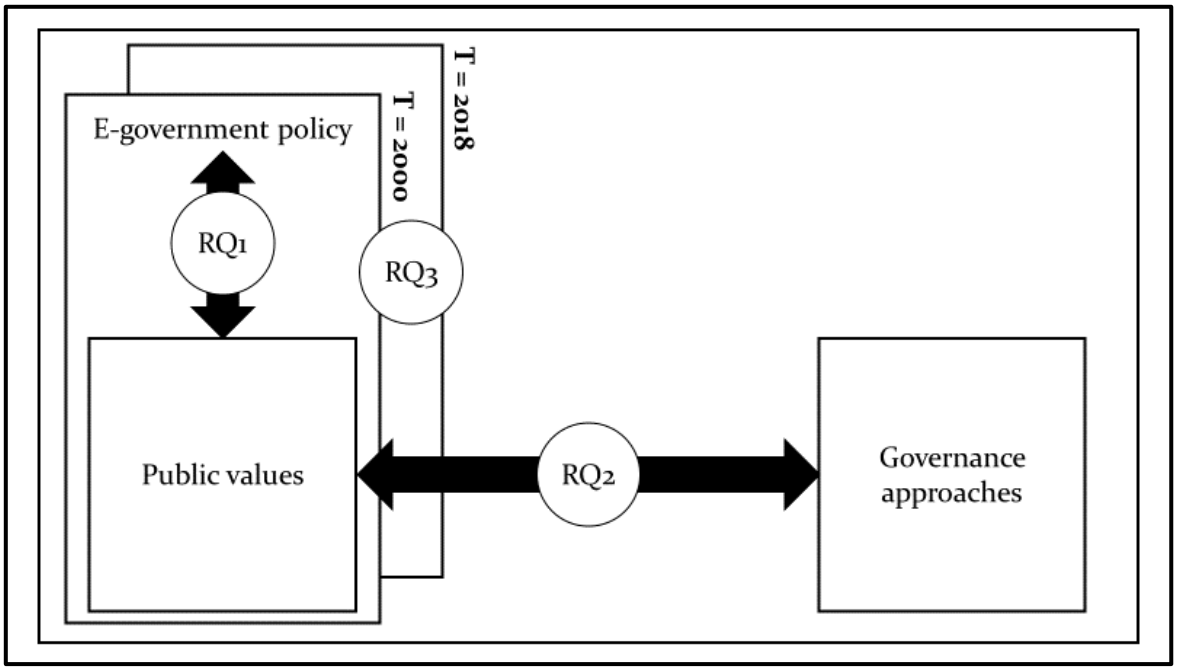


Figure 2.2 – Literature overview and connection to results and discussion section.

2.3.1 Giving meaning to the concept of public values

According to Kluckhohn (1951) a value is 'a conception, explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable which influences the selection from available modes, means and ends of actions'. Bozeman (2009) argues in this respect that it is questionable if a definition of public values is necessary. According to the author there is no necessity in defining it as it is closely related to other concepts such as public interest, public value criteria or public goods (Bozeman, 2009). Nevertheless, the author does state that public values are "those providing normative consensus about (a) the rights, benefits, and prerogatives to which citizens should (and should not) be entitled; (b) the obligations of citizens to society, the state, and one another; and (c) the principles on which governments and policies should be

based" (Bozeman, 2009, p. 371; Bryson et al., 2014). What, however, is missing in the description of Bozeman (2009) is the broader link to society: The attention is only on citizens, whereas society encompasses more than just citizens. Government policies also target enterprises, non-profit organisations and other societal actors which are distinct from citizens.

In order, however, for the reader to have a clear understanding of what we mean with public values, we can state, in line with Kluckhohn (1951) that public values are 'concepts, distinctive of an individual or characteristic of a group, of the desirable which influences the public services offered by the public administration'. The elements which Bozeman (2009) brings forward will, despite rigid focus on citizens, function as guiding principles: They underline the relation which is established between state and society.

It is essential to clarify the differentiation between 'public values' (plural) and 'public value' (singular) in order to avoid confusion between both concepts. The concept of 'public values' (plural) points to the input side and refers to the driving forces behind a certain decision or behaviour. This line of thought is represented by, for example, Bozeman (2009), and focuses on the policy or societal level. The public value (singular) line of thought focuses on the values of public managers themselves and the creation of public value by them. This line of thought is represented by Moore (1995). It refers to the output side and is focused on the performance of administrations (Bryson et al., 2014; Ho et al., 2018; Moore, 1995).

From an empirical point of view, a number of relevant studies have been published on the potential conflicts that might emerge between public values (de Graaf et al., 2016; Hubert & van Hout, 2011; Reino & Jaakson, 2014; van der Wal et al., 2011). de Graaf et al. (2016) state in this respect for example that "in daily practice, multiple public values that are all desirable will conflict in such a way that choices have to be made" (de Graaf et al., 2016, p. 1102). This 'conflictualization' connects to our research: The prioritization of public values can be considered as a first step towards a potential conflict. Public administrations will in their daily practices be forced to make certain choices on the public values they strive for. Societal actors, the public administration, public servants, politicians or citizens might desire multiple values, but not all can be fulfilled. Therefore, a balance in the public values will be aimed for. Some public values will receive more attention than others, whereby the prioritization of certain public values can change over time and certain values become more important than others (de Graaf et al., 2016; Hubert & van Hout, 2011).

2.3.2 Public governance approaches: Hierarchy, market and network

Pollitt & Bouckaert (2017) state that governance is a concept that "appears in almost as many versions as there are authors writing about it" (Pollitt & Bouckaert, 2017, pp. 1–31). Rhodes (1996) for example describes governance as "a change in the meaning of government, referring to new processes of governing; or changed conditions of ordered rule; or new methods by which society is governed" (Rhodes, 1996, pp. 652–667). Although it gives a first indication of what the concept can mean, thereby referring clearly to the role of government towards society, it remains vague and imprecise. It points in different directions and can include various aspects. What we retain from the description is the focus on the organisation of government in relation to society. Rijke et al. (2012) are more precise in describing the concept. According to them governance "refers to both processes and structures for steering and managing parts of societies", entailing "the networks of actors, institutional frameworks and processes that take place within these networks and frameworks" (Rijke et al., 2012, p. 75). Once more we note a clear focus on the role of the government and administration in relation to society. However, the definition of Rijke et al. (2012) entails a normative element as it refers to 'networks', whereas governance can also take place in different forms, thereby not focusing on the presence and/or development of networks.

What is clear from both definitions is however that the government and administration orientation is a key element of governance. A 'governance approach' can as such be defined as "a method for steering and managing parts of society by the public administration" (Rijke et al., 2012, p. 75). Such a method is linked to certain public values which are prioritized above others. Before going deeper into the relation between public values and governance approaches in the next section, the three governance approaches will be briefly introduced. This paper looks at three ideal type public governance approaches: Hierarchical governance, market governance and network governance.

Hierarchical governance can be related to the ideal type bureaucracy developed by Max Weber. Meuleman (2008) attributes the following characteristics to hierarchical governance: "[It] accounts for top-down decision-making, strict internal and external accountability procedures, a hierarchical organisation structure, an emphasis on project management rather than on process management, strategy styles of a planning and design type, and a strong preference for legal measures" (Meuleman, 2008, p. 26). Hierarchical governance has been the most used governance approach in Western public administrations, although it has been criticized since

the 1970's, leading to an uptake of the two other governance approaches by those public administrations.

The second governance approach, market governance, is related to New Public Management. A number of characteristics are related to market governance, such as the inclusion and focus on efficiency principles, the adherence to private sector approaches as well as market mechanisms, a customer orientation, increased attention for management skills, output-driven policy making, increased administrative competition instead of hierarchy when providing public services and contractual provision of public services (Hood, 1995; Kickert, 2001; Levy, 2003; Meuleman, 2008). Just like with hierarchical governance, also market governance cannot however be captured within a single definition. It is a broad approach which resulted out of the economic recession of the 1980s that has been (partially) implemented in various forms in different Western public administrations (Hood, 1991, 1995). However, what is always present in this governance approach is the 'market' element which "refers to market mechanisms and market thinking" (Meuleman, 2008, p. 26).

The third and final governance approach discussed in this paper is network governance. It can be defined as "the 'management' of complex networks, consisting of many different actors from the national, regional and local government, from political groups and from societal groups (pressure, actions, and interest groups, societal institutions, private and business organisations)" (High et al., 2005; Kickert, 1997; Meuleman, 2008, p. 31). Meuleman (2014) argues that network governance "is characterized by cooperation rather than coercion or competition, by trust rather than authority or price, and by interdependency than dependency or independency" (Meuleman, 2014, p. 891). This governance approach will for example focus on the inclusion and consultation of the broader public in policy making and service development. Concepts such as co-creation and coproduction can be seen as part of network governance (Steen et al., 2016; Van Eijk & Steen, 2016).

2.3.3 The relation between public values and governance approaches

Although the literature on public values and governance approaches is elaborate, much less attention is given to the relation between public values and governance approaches. This section aims to clarify this relationship by looking at currently existing empirical and theoretical literature, in order to present at the end of this section a typology that can be applied in this research.

From an empirical point of view, we see that some authors start from the potential conflict that can emerge between public values to build a connection to related governance approaches.

When such a conflict emerges, the actor confronted with this conflict will need to make a decision on which public values are prioritized over other public values. The research of Jaspers & Steen (2018) on public values and coproduction starts from a need for prioritization of public values and the potential conflicts that can emerge between public values. Specifically the authors look at the use of coproduction – which can be considered as being part of network governance – as a governance mode to prioritize public values and to deal with potential conflicts between public values (Jaspers & Steen, 2018; Steen et al., 2016). The public values are, in the research of Jaspers & Steen (2018), considered as the dependent variable on which the coproduction governance approach impacts as an independent variable. This causal relation is not put forward by Vrangbæk (2009) who analysed the public values of Danish civil servants. In his analysis on the public values of civil servants, the author finds a number of public values that appear among different public organisations: responsibility, transparency, maintenance of judicial values, adherence to professionalism and innovation. The author found a clear connection to governance approaches and states that there is mostly adherence to hierarchical governance and clan-based governance – an approach not included in this study as there is discussion in literature on whether or not this governance approach can be considered as a separate approach (Meuleman, 2008; Vrangbæk, 2003, 2009).

Table 2.4 – Public values typology Bannister & Connolly (2014)

Duty oriented	Service oriented	Socially oriented
Responsibility of the citizen	Respect for the individual	Inclusiveness
Responsibility to the elected politicians of the day	Service to the citizen in his or her different roles	Equality of treatment and access
Proper use of public funds	Responsiveness	Justice
Compliance with the law	Effectiveness	Respect for the citizen
Efficient use of public funds	Efficiency	Due process
Integrity and honesty	Transparency	Protecting citizen privacy
Facilitating the democratic will		Protecting citizen security
Accountability to government		Accountability to the public
Economy / Parsimony		Consulting the citizen
Rectitude		Impartiality
		Protecting citizens from exploitation

Source: Bannister & Connolly (2014)

From a theoretical point of view the relation between public values and governance approaches remains also largely understudied. An example is the article of Jørgensen & Bozeman (2007) in

which the authors identify a list of 68 public values on the basis of a systematic literature review. The authors make no connection to governance approaches. Instead the authors make a connection to the different relations between public administration actors as well as between the public administration, the political layer and society. Other authors have however established a connection between public values and governance approaches, such as Hood (1991) in his work on New Public Management. Hood (1991) argued in this respect that "different administrative values have different implications for fundamental aspects of administrative design – implications which go beyond altering the 'settings' of the systems" (Hood, 1991, p. 9). Bannister & Connolly (2014) connect their typology, which is presented in Table 2.4, also to the research conducted by Hood (1991). The public values typology of Bannister & Connolly (2014) and Vrangbæk (2009) are, because of their connection to several governance approaches, considered as highly relevant for this research.

There are however a number of difficulties in both typologies. The meaning of certain public values ('proper use of public funds', 'facilitating the democratic will', 'respect for the citizen') of the Bannister & Connolly (2014) typology are unclear. Furthermore, the connection to the governance approaches remains partially undefined. The duty oriented values are the only category of values that can be connected to a governance approach. Those values can be traced back to the sigma-type values of Hood (1991), which the last author connects to New Public Management. However, other authors connect some of the public values in this category to the Weberian bureaucracy (Hondeghem, 2017). It has therefore been decided to leave out the public values that had no clearly definable meaning and to rework both typologies to a new typology.

In the typology of Vrangbæk (2009), presented in Table 2.5, all public values are connected to a governance approach. However, also clan-based governance is taken on board in this typology. According to us this cannot be considered as a separate governance approach, and the focus lies in this research on three ideal-type governance approaches: Hierarchy, market and network governance (Bouckaert et al., 2010; Meuleman, 2008). There are two reasons for not including clan-based governance in the applied typology. In the first place there is discussion in the literature on whether or not this can be considered as a separate governance approach, whereas the three other approaches are generally accepted as the three ideal-types of governance (Meuleman, 2008). Secondly, the argumentation applied by Vrangbæk (2009) on why clan-based governance was included in the typology is unclear in comparison to why the three other governance approaches were included. It was therefore decided to not include the clan-based governance approach. Furthermore, some public values ('public insight and transparency')

presented in this typology did not belong solely to one of three categories or combined different public values ('innovation and service orientation').

Table 2.5 – Public values typology Vrangbæk (2009)

Hierarchical governance	Market governance	Network governance	Clan / professional governance
Accountability towards society in general	Satisfying user's needs	Balancing different interest	Independent professional standards
Judicial values / due process	Innovation and service orientation	Develop networks	Continuity and robustness
Political loyalty	Productivity		Due process
Public insight and transparency			
Listening to the public opinion			

Source: Vrangbæk (2009)

Recognising however the strengths of both the typologies of Bannister & Connolly (2014) (Table 2.4) and Vrangbæk (2009) (Table 2.5), we decided to rework both typologies to a reworked version which is presented in Table 2.3. Based on the three governance approaches described above, the public values of both typologies have been classified. It is important to underline that the public values have been related to the governance approach they are most related to. The public values taken from the Vrangbæk (2009) typology (indicated with a 'Y') have all been left in the same governance category. The public value 'public insight and transparency' has not been included in the typology, as this public value can, according to our definition not be related to any of the three governance approaches. 'Listening to the public opinion' has been left out since there is strong overlap with the other public values 'consulting the citizen', 'consulting enterprises', and 'consulting societal organisations'. Finally, 'innovation and service orientation' is split in two public values, as they can have different meanings and implications. Concerning the public values related to clan-based governance, it was decided not to include them in the typology. The reason for this is that given their relation to this specific governance approach, it was deemed impossible to classify them in one of the other three categories of public values. Besides the Vrangbæk (2009) typology, also the Bannister & Connolly (2014) typology (indicated with an 'X') served as a building block for the typology. As this typology was not related to governance approaches, a reshuffling of the public values took place to connect them to the governance approach they are mostly related to. A number of public values were left out, because it appeared that certain public values where difficult to operationalise (e.g. 'proper use of public funds', 'facilitating the democratic will'), there was an overlap with other public values

(e.g. 'accountability to the public', 'justice', 'due process') or it was unclear to which governance approach the public values could be connected the most (e.g. 'integrity and honesty', 'transparency', 'fairness'). Finally, certain public values were added (indicated with a 'Z') as they were deemed to be missing in the typology (e.g. network governance included 'consulting citizens' but not enterprises or societal organisations, to this end these were added). The final typology consists of 15 public values related to hierarchical governance, 12 public values related to market governance and 8 public values related to market governance.

The strength of this typology lies in the fact that it continues on the work conducted by other researchers in this domain, who build their typologies either for the specific domain of e-government or have applied their typology in practice. Furthermore, the strongly added value of the typology is the clear relationship between on the one hand public values and on the other hand the governance approaches. As stated earlier, this theoretical relationship between public values and governance approaches was until now largely neglected and via this typology we aim to contribute to this relationship.

2.3.4 Approaching public values in e-government policies

We wish to underline that the relation between public values and e-government policies has only received marginal academic attention. A systematic literature review revealed that in most of the scientific literature on this topic there is, first of all, a conceptual confusion between 'public values' and 'public value'. Secondly, the public values perspective is mainly used as a starting point, but without a clear introduction or clarification of their meaning, and finally, the authors often do not continue using the concept in their papers or for the argument that they aim to make. An exception to this are the results of Jørgensen (2007) and Palmhøj Nielsen (2003) who focused on Danish public sector organisations. The authors argue that the public values of the Danish Information and Communication Technologies Office shifted from traditional bureaucracy oriented public values towards more New Public Management-oriented public values. Interestingly enough they connected the public values to governance approaches and used a highly similar typology as Vrangbæk (2009). Whereas at the start, the balance of the Danish Information and Communication Technologies Office's public values was more inclined towards citizen equality, service quality and openness, those values were gradually replaced with increased attention for efficiency and productivity growth via e-government. According to the authors, this shifting balance in the public values was a result of the changing governance structure in which the Ministry had more influence: It prioritized different public values and was, because of its governance structure, able to prioritize also different public values in the

Danish Information and Communication Technologies Office. This is a highly relevant finding as it shows that the original values in the e-government policy of the organisation were replaced by New Public Management values (Beck Jørgensen, 2007; Palmhøj Nielsen, 2003).

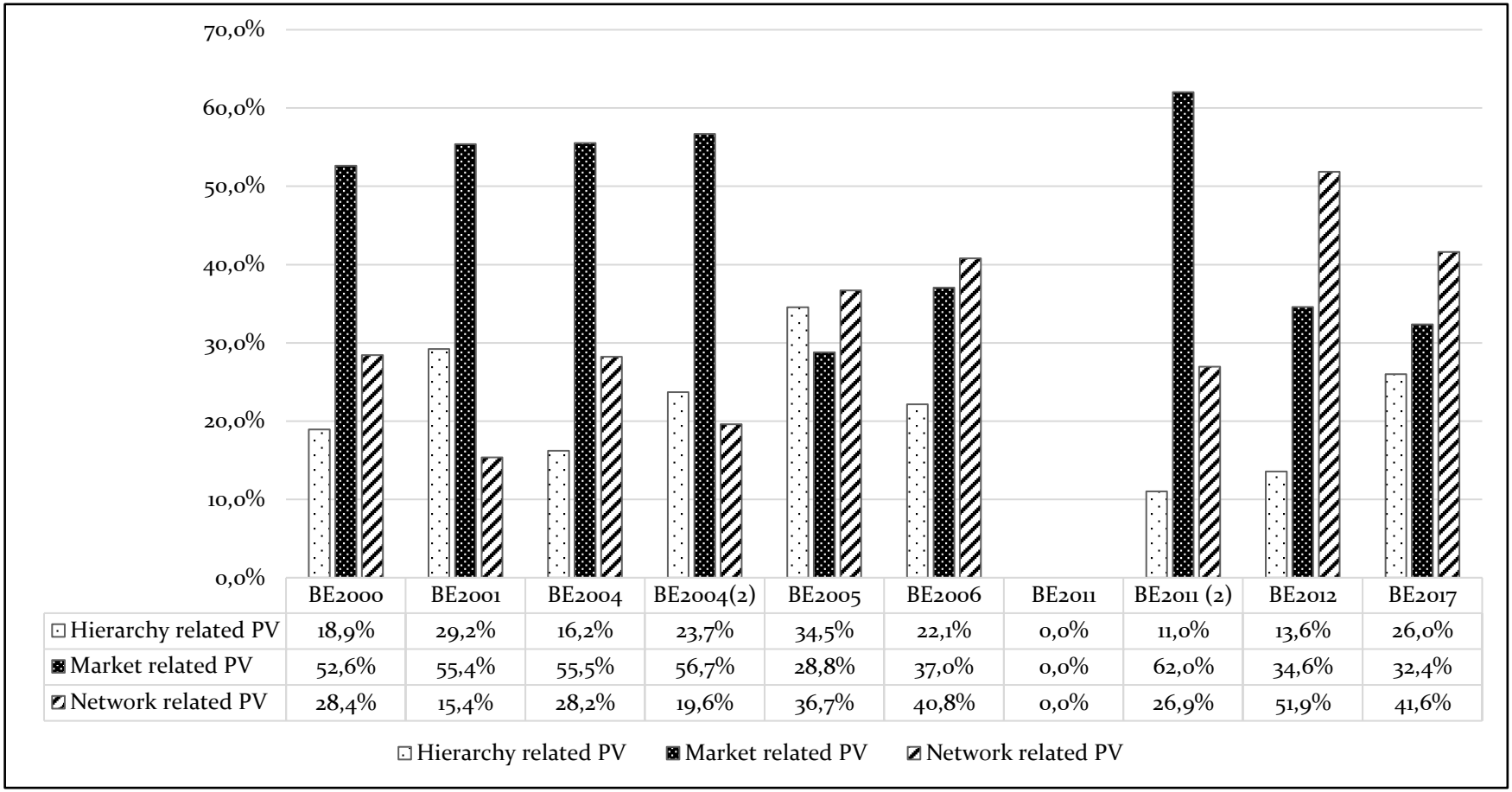
2.4 Results

On the basis of the typology presented in the previous section, this section presents the research results for the three studied public administrations. As the national public administrations are different from the EU public administration, the results of the two national administrations are first analysed and compared, followed by the EU administration. Following this, the relation between the national administrations and the EU is further deepened.

2.4.1 Belgian and United Kingdom public administration

2.4.1.1 Belgian federal administration

Figure 2.3 includes data on the Belgian federal administration. Within the analysed period there is a clear change of the public values balance. The documents BE2000, BE2001, BE2004 and BE2004(2) show a focus on market related public values with a result above 50%. In those documents there is no changing trend concerning hierarchy related public values or network related public values: Hierarchy related PVs represent between 16% and 29% of the public values, network related public values fluctuate between 15% and 28%. More recent documents, from 2004 onwards, do not show a clear line of preference for a public values category. BE2005 is balanced and BE2006, BE2012 and BE2017 mostly emphasise network related public values, followed by market and hierarchy related public values. BE2012 is the only document in which the network related public values score above 50%. The two documents from 2011 stand out for two reasons. The first document, BE2011, was the result of a broad political crisis at the Belgian federal level leading to a financial agreement on e-government policy without any policy orientation. As there was no text in the document related to the e-government policy to be pursued, there were also no public values as such included in the document. BE2011(2) scored 62% on market related values, which was the highest score of all analysed documents. Overall, market related public values are dominant in five documents, network related public values in four documents – but only once with more than 50% – and hierarchy related public values are



	BE2000	BE2001	BE2004	BE2004(2)	BE2005	BE2006	BE2011	BE2011 (2)	BE2012	BE2017
Hierarchy related PV	18,9%	29,2%	16,2%	23,7%	34,5%	22,1%	0,0%	11,0%	13,6%	26,0%
Market related PV	52,6%	55,4%	55,5%	56,7%	28,8%	37,0%	0,0%	62,0%	34,6%	32,4%
Network related PV	28,4%	15,4%	28,2%	19,6%	36,7%	40,8%	0,0%	26,9%	51,9%	41,6%

Figure 2.3 – Belgian Public Administration public values distribution (Percentages)

never the dominant category, though several times hierarchy related public values are the second category present in the documents (BE2001, BE2004(2), BE2005). For BE2005, the hierarchy related public values achieve almost the same percentage as the network related public values, which has the highest percentage.

A second factor is the political situation which influences public administration. The data in the BE2011(2) document, which has the highest percentage of market related public values, followed by the BE2012 document that has, in contrast, the highest percentage of network related public values, refers to this. This change can be explained by the political situation at the time. The 2011 document was the first e-government policy document after a policy standstill of almost two years (De Kamer van Volksvertegenwoordigers, 2014; Raeijmaekers & Maeseele, 2014). As a result, and because of an economically liberally oriented Minister, strong attention was devoted to the efficiency of the state and the administration. Furthermore, robust attention was devoted to user-centric service delivery, especially, but not only, towards enterprises. A year later, in the BE2012 document, it was underlined that in order to achieve the goals of the BE2011 (2) document, there was a need for more cooperation, both within the federal administration and in relation to external governmental and non-governmental actors. The need for consultation was especially emphasised in relation to enterprises.

2.4.1.2 United Kingdom central administration

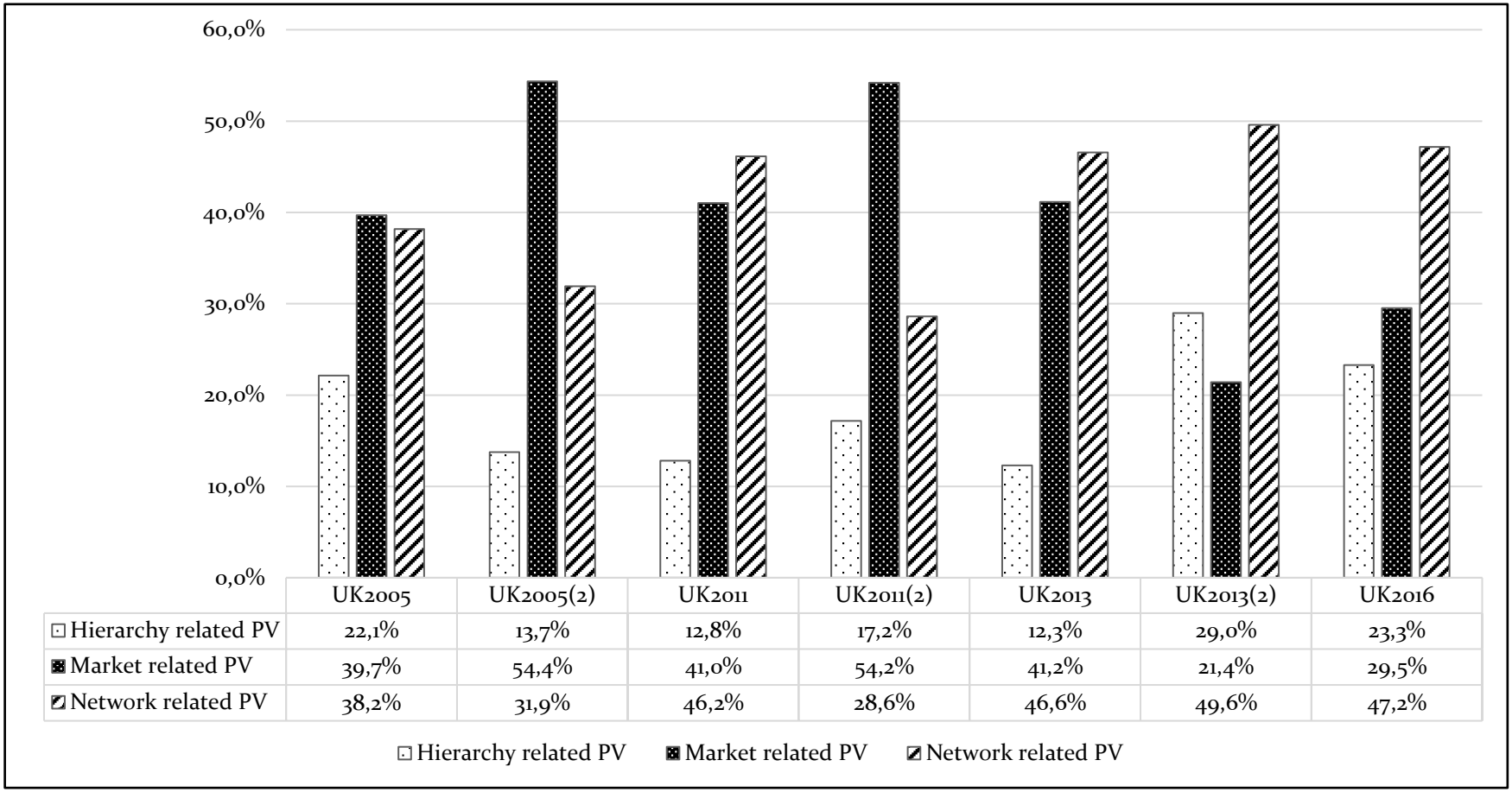
Data on the United Kingdom (presented in Figure 2.4) shows a shift in the public values balance over time. Market related public values are dominant in three policy documents (UK2005, UK2005(2) and UK2011(2)), whereby these last two documents have a score of more than 50% for this category, leading to low percentages for the two other categories. The hierarchy related public values score especially low. Network related public values in contrast are dominant in four of the eight documents (UK2011, UK2013, UK2013(2) and UK2016) but never count for more than 50%, leading to a more balanced percentage in relation to market related public values, but less in relation to hierarchy related public values. In general, it can be said that the hierarchy related public values always score the lowest, except in the UK2013(2) document.

Looking in greater detail at the content of the different documents can explain why those public values balances are present and what the relation is between documents. The UK2005 document and the UK2005(2) document were both written in the same year. Nevertheless there is a strong difference between both documents, with UK2005 having a more balanced presence of market and network related public values in comparison with UK2005(2). In the UK2005 document there is much more attention to inclusiveness of vulnerable groups and the consultation of

enterprises than in the other document. Of interest in this respect are the authors: UK2005(2) was prepared by the Cabinet Office, whereas the UK2005 document in contrast was written by the Cabinet Office, the United Kingdom Department for Trade and Industry – explaining the focus on consultation of enterprises – and the Social Exclusion Unit and Department for Education & Skills – explaining the focus on inclusiveness.

The UK2011 and the UK2011(2) documents have a relevant difference as well. UK2011 is more dominant on the network related public values but is immediately followed by market related values. The other document is clearly focused on market related public values. The first document is the general Government Information and Communication Technologies Strategy, whereas the other is a sub-strategy entitled 'Government End User Device Strategy'. The difference between the two documents is explained by the much stronger attention devoted to network values, such as inclusiveness, the need to consult enterprises and the need to focus on the development of networks.

The UK2011 document is highly similar to the UK2013 document for the public values balance. This does not come as a surprise as both documents are the general e-government strategies of the United Kingdom administration and are content wise also in line with each other since also the government did not change in this time period (United Kingdom Government, n.d.). In comparison to the other documents of the United Kingdom, it is noticeable to see that the UK2013(2) and UK2016 documents both score high on network related public values and at the same time have a higher percentage of hierarchy related public values than the other documents. This is explained by the fact that those documents are focused on the development of an Open Government, with a strong emphasis on the creation of networks and the inclusion of citizens, enterprises and societal organisations in the development of such an open government.



	UK2005	UK2005(2)	UK2011	UK2011(2)	UK2013	UK2013(2)	UK2016
Hierarchy related PV	22,1%	13,7%	12,8%	17,2%	12,3%	29,0%	23,3%
Market related PV	39,7%	54,4%	41,0%	54,2%	41,2%	21,4%	29,5%
Network related PV	38,2%	31,9%	46,2%	28,6%	46,6%	49,6%	47,2%

Figure 2.4 – United Kingdom Public Administration public values distribution (Percentages)

2.4.1.3 Comparing public administration in Belgium and the United Kingdom

The overall balance of public values in the analysed policy documents of both public administrations, as presented in Figure 2.5, shows that the Belgian documents have a slightly higher emphasis on market related public values as well as hierarchy related public values. The United Kingdom policy documents devote more attention to network related public values. Whereas the public values balance in the Belgian policy documents can be explained by the attention devoted to a specific governance approach and the influence of a political situation, the key influencing factors for the United Kingdom policy documents seems to be the specific topic that is being dealt with in the policy document as well as the different entities of the public administration that are involved in the writing of the policy document. At the Belgian level, however, the two factors that influence United Kingdom policy documents do not have an effect as the public administration entity responsible for preparing the document is always the same – that is, the entity responsible for the information and communication technologies and e-government. Also, the Belgian documents are also not structured around one theme as is often the case in the United Kingdom. All topics are dealt within the same document. So no influence can take place.

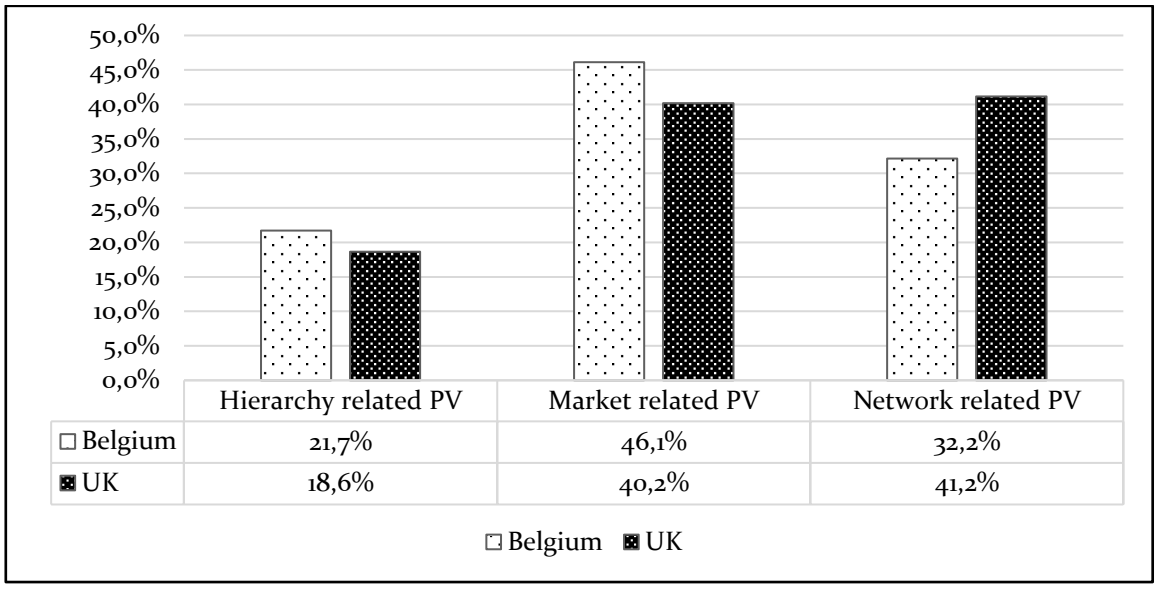


Figure 2.5 – Comparing Belgian and United Kingdom Public Administration public value distribution (Percentages)

2.4.2 European Union public administration

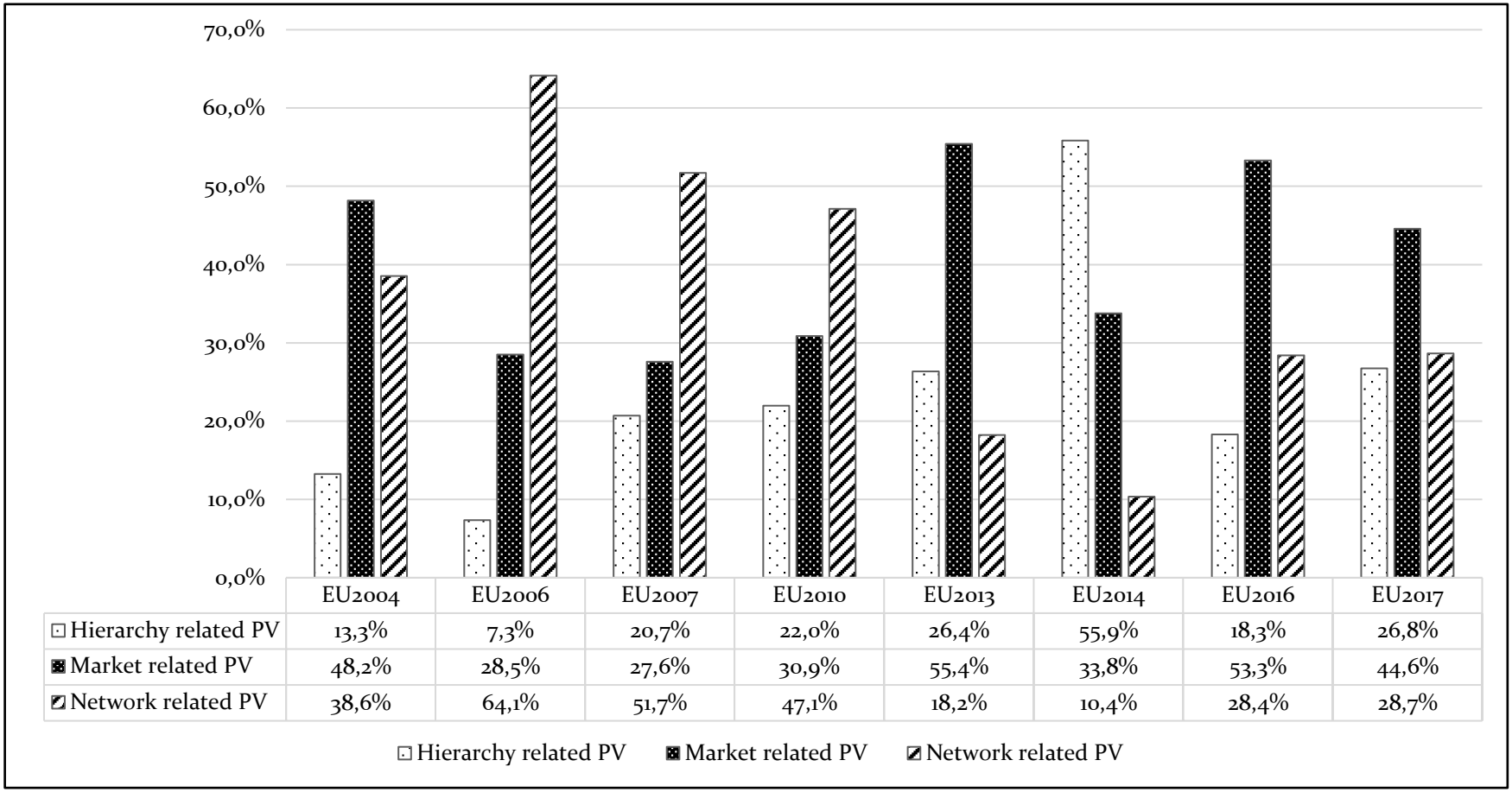
The third set of analysed policy documents comes from the EU. As discussed earlier, the public administration of the EU cannot be treated as a public administration similar to the national public administrations of Belgium and the United Kingdom. The EU is a collaboration between different countries with a public administration possessing various tools to influence the policies of Member States, as has been demonstrated by, among others, Hooghe & Marks (2001, 2003). The results for the different analysed EU policy documents are presented in Figure 2.6. Market related public values are four times dominant, twice having a percentages above 50% (EU2013 and EU2016). Network related public values are three times dominant, also twice with a percentage above 50% (EU2006 and EU2007) and finally, the hierarchy related public values are dominant in one document, also with a percentage above 50%. The hierarchy related public values are however also six times the public values with the lowest presence in the documents. A first factor influencing the balance of public values in those documents seems to be the specific topic dealt with. The first set of documents that have a similar public values balance between the categories are the EU2006, EU2007 and the EU2010 documents: All documents put network related public values first, followed by market related public values and hierarchy related public values. This does not come as a surprise as the EU2006 and EU2010 documents deal with the development of interoperable e-services in the EU, which requires coordination and the development of cooperation networks in order to ensure the exchange of data and service building blocks. Highly relevant is the result of EU2004, the decision of the European Parliament and the Council on interoperable delivery of e-services, in connection to the documents EU2006 and EU2010 – both also focus on interoperable service delivery. Market related public values are dominant in EU2004, followed immediately by network related public values. The document focuses on improved service delivery towards internal and external governmental actors. EU2006 and EU2010, in contrast, put network related public values first. The focus on improved service delivery seems to result in the need for more cooperation – with both internal and external government actors –, resulting in a shift towards network related public values. Finally, similar to EU2006 and EU2010, is the document EU2007 on the establishment of a common 'Infrastructure for Spatial Information'. This refers to the creation of a network – in this case for the exchange of data and information – and ways to stimulate cooperation.

The EU2013 document, i.e. the Directive on re-use of public sector information or the PSI Directive, shows a dominant focus on market related public values. This data is in line with the overall aim of the EU institutions concerning the reuse of public sector information. The aim in

the first place is not to give societal actors or citizens access to data to participate in policy making or to hold government accountable, but to support enterprises in their search for information (European Commission, 2018). This public sector information is in turn expected to lead to economic benefits and stimulation of the economic growth. This explains the market orientation when it comes to the public values in the document.

Another relevant document is EU2014, that is, the eIDAS Regulation. It is the only document in the analysis with a dominance of hierarchy related public values. This regulation aims to "enhance trust in electronic transactions" and relies thereby strongly on the necessity of complying with the law and the need to work on citizen, enterprise and societal security (Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on Electronic Identification and Trust Services for Electronic Transactions in the Internal Market and Repealing Directive 1999/93/EC, 2014, p. 73). The eIDAS Regulation is focused on access to public services in other EU Member States and is in that respect related to cross-border cooperation and interoperability. The analysis did not include key EU documents on interoperability, such as the ISA and ISA² Decisions, but is needs to be emphasised that those documents too are expected to have an influence on the national governance of Member States.

Finally, the documents EU2016 and EU2017, that are respectively the EU eGovernment Action Plan 2016–2020 and the Ministerial Tallinn Declaration on eGovernment, both have a dominance of market related public values. EU2017 is however more balanced than EU2016, especially when looking at the percentages of hierarchy related public values versus network related public values. In the EU eGovernment Action Plan 2016–2020 the attention goes especially to serving citizens, efficiency in service delivery, satisfying the users and the need for innovation. There is, however, also consideration of increased internal and external collaboration. Hierarchy related public values are present, but to a lesser degree. The Ministerial Tallinn Declaration is the most balanced document of all. This should probably not come as a surprise as it was agreed at Ministerial level and involved strong diplomacy whereby all Member States had to find a compromise, leading to a document in which the three public values categories are present. It has to be mentioned that the Ministerial Tallinn Declaration builds on earlier Ministerial Declarations on this topic, for example the Ministerial Malmö Declaration of 2009.



	EU2004	EU2006	EU2007	EU2010	EU2013	EU2014	EU2016	EU2017
Hierarchy related PV	13,3%	7,3%	20,7%	22,0%	26,4%	55,9%	18,3%	26,8%
Market related PV	48,2%	28,5%	27,6%	30,9%	55,4%	33,8%	53,3%	44,6%
Network related PV	38,6%	64,1%	51,7%	47,1%	18,2%	10,4%	28,4%	28,7%

Figure 2.6 – EU Public Administration public values distribution (Percentages)

Table 2.6 – EU administration – Status and Authorship

Document ID	Status	Authorship
EU2004	Legal	Commission/Council/Parliament
EU2006	Non-legal	Commission
EU2007	Legal	Commission/Council/Parliament
EU2010	Non-legal	Commission
EU2013	Legal	Commission/Council/Parliament
EU2014	Legal	Commission/Council/Parliament
EU2016	Non-legal	Commission
EU2017	Non-legal	EU Member States

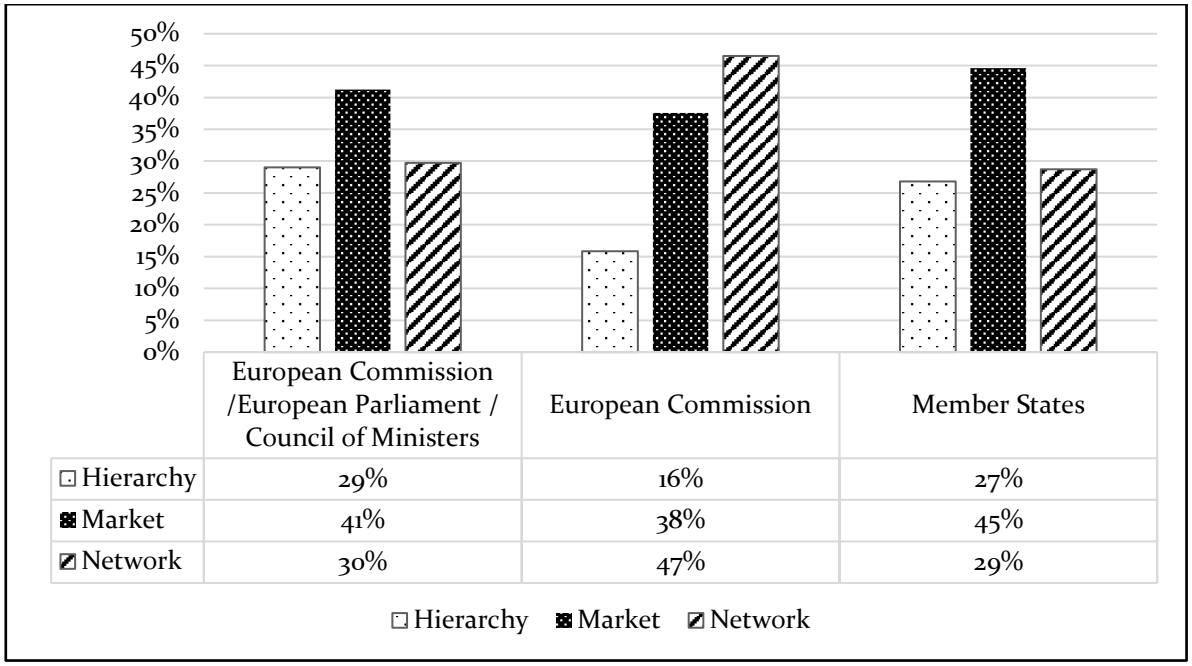


Figure 2.7 – EU Public Administration public values distribution by Author(s) (Percentages)[10]

[10] Extra information concerning Figure 2.7: Documents of the European Commission – European Parliament – Council of Ministers: EU2004 – EU2007 – EU2013 – EU2014 / Documents solely of the European Commission: EU2006 – EU2010 – EU2016 / Documents solely of EU Member States: EU2017.

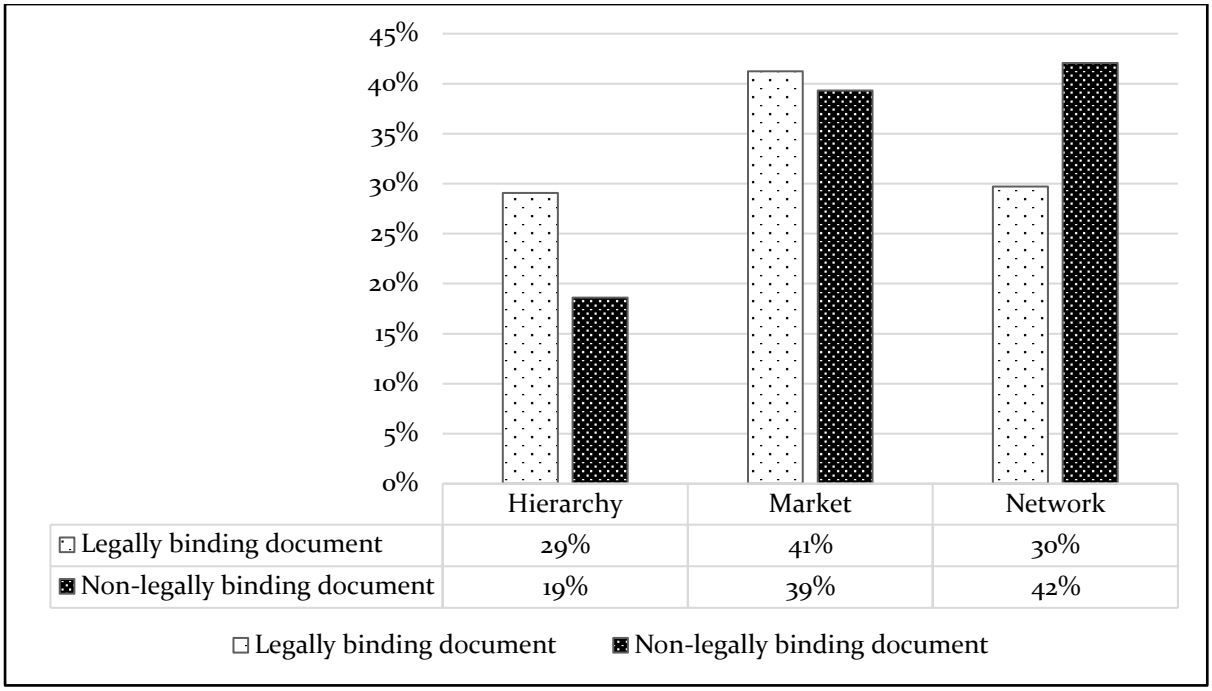


Figure 2.8 – EU Public Administration public values distribution by Legal Status (Percentages)

Besides the topic focused on in the policy document, there seems to be another factor influencing the balance of public values. Figure 2.7 and Figure 2.8 respectively present the public values balance for the policy documents according to the authors and the legally binding status. Table 2.6 provides an overview on the legal status and authorship of the EU policy documents. Figure 2.7 shows that, when the European Commission is the sole author of the document, there is substantially more emphasis on network related public values and much less on hierarchy related public values. When the Member States are involved, via the Council of Ministers of the EU or via the unofficial Ministerial Meetings, then the market related public values remain almost stable in comparison to when the European Commission is the sole author, but the emphasis on hierarchy related public values increases at the expense of the network related public values. Also the results presented in Figure 2.8 are highly relevant: Documents with a legally binding status have a much stronger focus on hierarchy related public values then documents with a non-legally binding status. Indeed, when a document is non-legally binding then the attention for network related public values increases at the expense of the hierarchy related public values. The market related public values remain stable. Those results can be explained by the powers of the different actors at the European level: When the European Commission is the sole author, or when the document is non-legally binding – and is as such connected to the European Commission, except for the unofficial Ministerial Declarations, then the authors cannot rely as strongly on hierarchy related instruments as when the document is legally binding. So at the EU level, the powers possessed by the actors seem to

influence the balance of public values as well as the topic on which the policy document is focused.

2.4.3 The relation between national public administrations and the EU

The relation between the EU and its Member States is complex. The EU and the Member States have a distinctively different approach to policy making and to the preparation of policy documents. Whereas Belgium and the United Kingdom position their e-government policies in non-legally binding documents, the situation is different at the EU level. Different factors influence and explain the public values balance in the policy documents. The Belgian and United Kingdom policy documents follow the governance evolutions and trends that are discussed in literature – with a growing diversification of the public values balance in the policy documents, but those trends and evolutions are much less visible in the EU policy documents (Pollitt & Bouckaert, 2017). The influencing factor here seems to be the power distribution among the different EU institutions. As Hooghe & Marks (2001) argue, the EU Member States – in this case Belgium and the United Kingdom – no longer function as self-standing blocks. Both the EU and national levels influence each other. The results show indeed that when the Member States are involved in the EU policy documents the balance of the public values is different from when the Member States are not involved. Member States are at the same time also being influenced in their policies by EU policy documents – for example, the open data policy, which is legally binding at the EU level and needs to be implemented as policy in Member States.

2.5 Discussion

In this discussion section we focus on two particular contributions that this paper makes to the literature. The first contribution is related to the ongoing governance debate in public administration literature. For years, public administration scholars as well as practitioners have devoted attention to debate on various governance approaches and their presence in public administrations (Bouckaert et al., 2010; Dunleavy et al., 2006; Hood, 1991; Pollitt & Bouckaert, 2017). This paper contributes to the debate on governance approaches in two ways. Firstly it takes a different viewpoint by bringing e-government perspective into the debate. As Pollitt (2010) states, the influence information and communication technologies have on public administration is to a large extent still neglected by public administration scholars, although the inclusion of information and communication technologies and e-government has the

potential to transform the public administration. Secondly, by taking a particular public value perspective on governance approaches, we demonstrated that e-government policies are not focused on a single type of public values which are related to one governance approach, but rather that a pluralistic public values environment exists within the e-government policies – at least for the three public administrations analysed in this study. Taking a public values perspective allowed us to capture this public values pluralism, showing the complexity of governance approaches in public administrations (Dickinson, 2010). In line with Misuraca & Viscusi (2015), who "expected that the role of government will shift from being a central steering entity to that of a moderator of collective decision-making processes", it can be argued on the basis of our research results that this is indeed partially the case if looked at the e-government policies from a public values perspective (Misuraca & Viscusi, 2015, p. 318).

Secondly, taking a public values perspective potentially allows to better understand the public value that is created by a public administration. Savoldelli et al. (2014) argue in this respect that public value can only be created by a public administration if grounded in politics, public values and evidence. Also Kelly, Mulgan, & Muers (2002) underline the importance of public values for the creation of public value. In the introduction of this chapter specific attention was devoted to the conceptual difference between public values and public value, but it needs to be clear that public values influence the public value that is created. In order to understand the impact of e-government policies on public administrations and the public value that is created, a public values perspective can used to this end. Cordella & Bonina (2012) state that market related practices have defined the way in which information and communication technologies have been implemented in public administrations, and that mainly private sector perspectives have been taken to understand the impact of information and communication technologies on the public sector. Taking a public values perspective offers a different conceptual lens to understand this impact, and from our results it seems that other public values have also received a substantial amount of attention, which in turn can influence the public value creation.

2.6 Conclusion

In this chapter we aimed to contribute to a better understanding of the balance of public values in e-government policies within public administrations. Three questions were formulated, whereby this first research question can be considered to be the main research question (see Chapter 1. Introduction): **(1)What public values are prioritized in the e-government policies of public administrations?**, **(2) How are the public values present in the e-**

government policies connected to a governance approach? and (3) **How can the public values prioritization be explained?** On the basis of two existing public values typologies a new typology has been developed, with public values structured around three ideal-type governance approaches (hierarchy, market and network). The results indicate that market related public values play an important and often dominant role in e-government documents, but so do network related public values – although to a lower degree. Secondly, hierarchy related public values are seldom dominant and are typically the third category of public values found in the documents.

At the national level four factors emerged as having a decisive effect on the balance of the public values in the policy documents: The emphasis on a specific governance approach at a given time, the influence of politics, the specific topic of the e-government policy document and the role of the authors. The first two factors were crucial in the Belgian e-government policy documents, the latter two factors were decisive for the United Kingdom policy documents. At the EU level, the power distribution among the different actors seems to be of crucial importance. In conclusion, and contrary to what is often claimed, those public values that are associated with market related governance have not disappeared, but such values no longer dominate public values. The results demonstrate that a plurality of different public values and related governance approaches exist within e-government policies in public administrations. This is promising as e-government has the potential to influence and transform the entire public administration.

There is a number of potential future research avenues. In particular we would like to highlight three of them. At the beginning of this chapter, the difference between public values (plural) and public value (singular) was explained. This chapter focused on the importance of public values in the e-government policies pursued by public administrations. As mentioned in the discussion it is important for a public administration to create value. The approach applied in this study can serve as a stepping stone to build a framework to evaluate the use of information and communication technologies. Indeed, the pursued public values in e-government policy documents can be used to evaluate the policy outcomes of an e-government policy.

A second potential research avenue is the connection between public values and governance instruments. In this paper the relation between public values and governance approaches has been researched. Governance approaches are applied in practice via the use of governance instruments as Bouckaert et al. (2010) make clear. The data show that the market related public values do not dominate the others and that network related public values have gained

importance in recent years. A question to be asked now is the extent to which this is also becoming visible in the applied governance instruments.

A final and third research focus is more theoretical and relates to the limitations stated earlier in this chapter. A further refinement of the typology is advisable as well as a broadening of the scope of the studied public administrations. Also understanding the relationship between the policy documents and the civil servants behind those documents, via in-depth interviews, would help in further clarifying the importance of public values in e-government policy documents.

As a final note, we would like to underline the potential policy implications of this research. In the first place the research has shown the need for policy makers to be conscious about the public values that are included in the e-government policies of public administrations. The public values' choices that are made have an important impact on the direction of the policies and the horizontal nature of the policies implies that there is a potential impact on other policy areas. Secondly, the rather eclectic presence of public values, which are related to different governance approaches, is likely to influence the applied governance instruments. At both national and EU level it will be interesting to see how policy makers will deal with the relation between public values on the one hand and the application of governance instruments on the other hand – especially in light of the future e-government policy development in the three studied public administrations.

Chapter 3 Unravelling the relation between Public Values and Coordination Instruments – A Case Study of e-Governance

Note

This Chapter is currently under review as the following article:

Chantillon, M., Crompvoets, J., & Peristeras, V. (2021). Unravelling the relation between Public Values and Coordination Instruments – A Case Study of e-Governance. under review in *Administration & Society*.

3.1 Introduction

The topic of public values has since long been routinely addressed in the study of public administrations, with a steady increase since 2000 (Van der Wal et al., 2015). At present also practitioners in public administrations have (re)discovered the importance of public values, and specifically in one domain – i.e. the domain of e-governance. An example is the 2020 EU Ministerial Berlin Declaration on Digital Society and Value-Based Digital Government makes strong and direct references (1) to the importance of public values for steering the digital policies developed by public administrations and (2) to the creation of public value on the basis of those same digital policies (EU Ministers in charge of eGovernment Policy and Coordination, 2020).

Academic research on the intersection between public values and e-governance remains however limited. Besides few recent studies, public administration scholars have mainly focused on other "galaxies" of public values, rather than on the one that connects public values with e-governance (Van der Wal et al., 2015, p. 14). An exception is the study of Bannister & Connolly (2014). The authors argue that "the ICT [information and communication technologies] can alter the existing balance of values", in turn "leading to [...] governance dilemmas" (Bannister & Connolly, 2014, p. 126; Ingrams, 2019). From this perspective, the use of technology by public administrations impacts as such the pursued public values. Rodriguez Müller & Steen (2019) concur, but underline at the same time that users can also influence the direction of public values in the information and communication technologies used by public administrations. While the academic research has emphasized the role of public values in co-production (e.g. Nabatchi (2012); Rodriguez Müller & Steen (2019); Simonofski et al. (2020)), research on the relation between public values and e-governance focusing on the public administration itself is however more limited (Chantillon et al., 2018; Chantillon, Crompvoets, et al., 2020). Given the importance that the use of information and communication technologies has on the functioning of public administrations and the relationship with those being served by the public administration, a more deeply engrained understanding of the relationship between public values and e-governance is key (Bannister & Connolly, 2014; Ølnes et al., 2017; Sundberg, 2016).

Within any policy making process in any policy domain – be it information and communication technologies-related or not – a public administration develops a balance of public values to focus on (Chantillon, Crompvoets, et al., 2020; de Graaf et al., 2016; de Graaf & Paanakker, 2015; Jaspers & Steen, 2018). A policy will thereby be implemented. This policy intents to lead, together with the implementation of the policy, to the creation of value. *Public* value in the context of public administrations (Moore, 2013). Creating public value requires two aspects: (1)

a selection of public values to steer the direction of the policy, and (2) a governance approach and related coordination instruments to implement the policy. Fukumoto & Bozeman (2019) argue that one of the main problems of current public values research is the so-called instrument problem. The problem refers to the fact that the "achievement and realization of public values require the appropriate and effective instrumentation and implementation" (Fukumoto & Bozeman, 2019, p. 643). Unfortunately there is currently a lack of knowledge and empirical data on this relationship (Fukumoto & Bozeman, 2019).

Understanding the connection between the public values enshrined in the policies and the selected governance approach – and related coordination instruments – plays a crucial role in creating public value and avoiding potential public values failure (Bozeman, 2002b; Nabatchi, 2018). It is crucial for the further development of theory on public values and for practitioners, who are – more and more – having active attention for the topic of public values. This study's objective lies therefore in understanding this relationship and we pose the following research question (see Chapter 1. Introduction): **What is the connection between public values and coordination instruments in the e-governance policy of a public administration?**

This chapter continues as follows; first the concepts of public value, public values, governance approach, and coordination instruments are clarified. Afterwards the methodology is explained, followed by the research results and conclusion.

3.2 Research Background

In this research background, attention is devoted to the relation between public value, public values, governance approaches and coordination instruments.

3.2.1 Public Values & Governance Approaches

From a democratic point of view, the public administration has the obligation to deliver services to the electorate, thereby also respecting the will of the political elite (Moore, 2013). More broadly speaking, the public administration's role is to create public value, which will lead, as Moore (1995), argues to "an appraisal 'on behalf of the public' of the outcome of public service delivery" (Moore, 1995; Rodriguez Müller & Steen, 2019, p. 341). The creation of this public value requires that adequate policies are developed by the public administration. These will serve as a first step towards the creation of public value. Policies include what Bozeman (2009) and Jørgensen & Bozeman (2007) have conceptualised as public values (plural). These public values are the guiding principles of public administrations in policy implementation. As Bozeman,

(2009) states, public values "provide a normative consensus about the rights, benefits, and prerogatives to which citizens should (and should not) be entitled; the obligations of citizens to society, the state, and one another; and the principles on which governments and policies should be based" (Bozeman, 2009, p. 371; Simonet, 2017). Although this is a useful description of public values, it has to be underlined that the specific focus on citizens is too narrow to capture the entire spectrum of societal actors covered by public values (Chantillon, Crompvoets, et al., 2020; Moore, 2013). Also businesses and civil society organisations have rights, benefits, prerogatives and obligations in relation to public administrations. The choices public administrations make and preferences they articulate with respect to public values can also be made with those latter actors in mind.

However, there is a crucial difference between public values (plural) and public value (singular) – a distinction that will be maintained throughout this research. Namely, public values being situated at the input side of the policy development and public value being related to the output side of the policy (Chantillon et al., 2018; Chantillon, Crompvoets, et al., 2020; Jaspers & Steen, 2018; Rodriguez Müller & Steen, 2019; Simonofski et al., 2020a). Public values help to understand the public value that will eventually be created.

Besides the relationship between public value and public values, Moore (1995) underlines that the creation of public value requires activities from the public administration. There is a need to govern in order to create public value. This can be done through different approaches combining various coordination instruments (Bouckaert et al., 2010; Pollitt & Bouckaert, 2017). Creating this public value is the crucial task of the public administration, and both public values and coordination instruments play a central role in it (Jaspers & Steen, 2020). As stated in the introduction, one of the main problems of current public values' research is however the instrument problem (Fukumoto & Bozeman, 2019). In the literature, some authors refer to a theoretical connection between public values and mechanisms to govern. Hood (1991) and Nabatchi (2018), for example, both connect specific public values with mechanisms to govern. Hood (1991) argued, in his widely-cited and seminal article on New Public Management, that "different administrative values have different implications for fundamental aspects of administrative design – implications which go beyond altering the 'settings' of the systems" (Hood, 1991, p. 9). From the author's perspective, the choice of focusing on certain public values goes hand in hand with the choice for a certain governance approach and related coordination instruments. The author seems to assume the existence of a causal relationship between the two – the values impact the design.

A similar approach is taken by Nabatchi (2018) who argues that specific public values can be connected to specific mechanisms to govern. The author contends that the methods are specific to certain public values and are key to guarantee their continuity and consistency. There is the expectation that pursuing certain public values goes hand in hand with the selection and use of specific methods. While causality is not expected, correlation is. There are four different types of values frames, i.e. the political, legal, organisational and market values frame (Nabatchi, 2018).[11] Each of those values frames focus on a selection of dominant public values and connected methods. The most well-known value frames are the organisational values frame – focusing on governance related to hierarchy and network governance approaches – and the market values frame – focusing on governance associated to market governance approaches.

Although those authors make the theoretical connection between public values and coordination instruments, the empirical material on the relation between public values and coordination instruments is missing. Furthermore, the assumptions made on the relation between the public values and the coordination instruments are limited in scope and require further attention. In the following two sections, theoretical reflections are provided on the classification of public values and coordination instruments. Those classifications are important as they underpin the methodological approach taken in this research.

3.2.2 Classifying Public Values

One of the main challenges in public values research is the variation in what can be considered to be public values (Van der Wal et al., 2015). Over the years many different classifications have been developed, often not only taking the public values into consideration but also more universally applicable values – bringing even more confusion and unclarity to the field (Nabatchi, 2018). Examples of inventories and typologies of public values are numerous, think for example of the Jørgensen & Bozeman (2007) universal public values inventory, the Jaspers & Steen (2018) or the Rodriguez Müller & Steen (2019) co-production public values typologies. Those classifications all have their merits, however given both the specific e-governance research context and the connection to coordination instruments that is being researched, they are not suitable for this study. As Bannister & Connolly (2014) argue "there is surprisingly little to be found in the literature on the subject of ICT [information and communication technologies] and public sector values" (Bannister & Connolly, 2014, p. 121). This study requires

[11] Reference is made to "values frames" – although the plurality of value could be considered as grammatically incorrect in relation to frames, it was a deliberate decision to refer to values because it refers to public values (plural).

a typology that covers the two referred criteria and that has, in the most optimal way, already been used in an empirical context.

Table 3.1 – Typology of Public Values

Hierarchy-related Public Values	Market-related Public Values	Network-related Public Values
Responsibility to the citizen	Efficient use of public funds	Equality of treatment and access
Responsibility to the elected politicians of the day	Respect for the individual	Consulting other administrative level(s)
Compliance with the law	Service to societal organizations	Balancing different interests
Accountability to government	Economy/parsimony	Consulting citizens
Rectitude	Responsiveness	Consulting enterprises
Responsibility to the enterprises	Effectiveness	Inclusiveness
Responsibility to societal organizations	Efficiency	Develop networks
Protecting citizens from exploitation	Service to enterprises	Consulting societal organizations
Protecting citizen security	Satisfying user's needs	
Protecting enterprise security	Productivity	
Protecting societal security	Innovation orientation	
Impartiality	Service to the citizen in his/her different roles	
Political loyalty		
Judicial values / due process		
Accountability towards society in general		

Source: Bannister and Connolly (2014); Chantillon, Crompvoets, and Peristeras (2020); Vrangbæk (2009)

A recent article by Chantillon et al. (2020), i.e. Chapter 2 of this thesis, has proven to be relevant for this research. The public values typology developed and applied in the article is structured around a widely accepted structure of governance approaches – namely hierarchy, market and network (Bouckaert et al., 2010; Pollitt & Bouckaert, 2017; Sundberg, 2016). As will be explained later on in this Theoretical Section, this connection to governance approaches proves to be valuable for understanding the connection between public values and coordination instruments. Secondly, as indicated, the literature on public values is punctuated by public value typologies. Although this is a new typology, it builds on the existing work of other authors, and

in particular the work of Bannister & Connolly (2014), Vrangbæk (2009) and Hood (1991). Thirdly, the public values typology was developed on the basis of public administration literature for the analysis of public values in the e-governance policy. Finally, the typology was already used in practice. As such it can be argued that the applied public values typology has a demonstrated usability. The typology is presented in Table 3.1. It is structured around three widely known governance approaches – namely the hierarchy, market and network governance approaches – and includes 35 public values in total, 15 public values related to hierarchy, 12 to market and 8 to network. This typology will be used in this research.

3.2.3 Classifying Coordination Instruments

As mentioned, both public values and coordination instruments have a crucial role in the creation of public value. Furthermore, Fukumoto & Bozeman, (2019) posit that the public values' research has to tackle the instrument problem. This instrumentation and implementation takes place via the governance approach (de Bruijn & Dicke, 2006). According to Rijke et al. (2012) governance "refers to both processes and structures for steering and managing parts of societies" (Rijke et al., 2012, p. 75). A governance approach is "a method for steering and managing parts of society by the public administration" (Chantillon et al., 2020). The definition implies that there is a need for coordination and instruments related to coordination. Bouckaert et al. (2010) define this coordination as "the instruments and mechanisms that aim to enhance the voluntary or forced alignment of tasks and efforts of organizations within the public sector" (Bouckaert et al., 2010, pp. 1–31). The coordination instruments function as such as an indicator of the selected governance approach.

Bouckaert et al. (2010) and Meuleman (2008) contend that this coordination can be organised according to three theoretical governance approaches: hierarchy-related governance, network-related governance and market-related governance. The authors state that "the distinction between hierarchies, markets and networks as three fundamental mechanisms of coordination [...] is widely accepted" (Bouckaert et al., 2010, p. 35; Ho et al., 2018). A commonly used typology of coordination instruments can be found in Bouckaert et al. (2010). The authors present an overview of coordination instruments structured according to the theoretical governance approaches. This typology will be used in this study. An overview of those instruments can be found in Table 3.2.

Table 3.2 – Typology of Coordination Instruments

Hierarchy-related Coordination Instruments	Network-related Coordination Instruments	Market-related Coordination Instruments	Network-Hierarchy-related Coordination Instruments	Network-Market-related Coordination Instruments
Top-down and unilateral strategic management	Bottom-up and interactive strategic management	Results-oriented financial management systems focused on incentives for units	Procedural instruments concerning mandated consultation and review	Inter-organisational learning culture by job rotation, training and internal job market.
Traditional input-oriented financial management systems	Results-oriented financial management systems oriented towards information exchange and consolidation according to policy portfolios	Regulated markets	Establishment of a specific coordinating function or entity with lines of control	
Reshuffling of competencies: organisational mergers or splits; centralization (decentralization)	Systems for information exchange			
Reshuffling of lines of control	Consultative/deliberative bodies			
	Entities for collective decision-making			
	Common organizations			
	Chain-management structures			

Source: Bouckaert et al. (2010)

This typology of coordination instruments is widely accepted and applied in the literature (Sarapuu & Lember, 2015; Verhoest et al., 2007; Wouters et al., 2020, 2021). The network governance approach refers to "the 'management' of complex networks, consisting of many different actors from the national, regional and local government, from political groups and from societal groups (pressure, actions, and interest groups, societal institutions, private and business organizations)" (Kickert, 1997, p. 735; Meuleman, 2008, p. 31).

Besides network governance there is also hierarchical governance that can be described as accounting "for top-down decision-making, strict internal and external accountability procedures, a hierarchical organization structure, an emphasis on project management rather than on process management, strategy styles of a planning and design type, and a strong preference for legal measures" (Meuleman, 2008, p. 26). In total four types of hierarchy-related coordination instruments were identified. The third mechanism is connected to market governance, whereby the public administration relies on market elements, and refers "to market mechanisms and market thinking" (Meuleman, 2008, p. 26). Two types of market-related coordination instruments were identified.

Furthermore, two instruments are a combination of network governance and hierarchical governance: (1) procedural instruments concerning mandated consultation and review, and (2) the establishment of a specific coordinating function or entity with lines of control. Finally, one instrument is a combination of network governance and market governance: Inter-organisational learning culture by job rotation, training and internal job market.

3.3 Methodology

3.3.1 Case study approach and selection

Following the research question, the methodology of this paper follows a single case study approach. The data collected via this case study will complement existing theoretical insights (Cesar Casiano Flores et al., 2020; Lieberman, 2005; Yin, 2009). Case study research is fit to study a phenomenon with only limited theoretical insights available. As Flyvbjerg (2006) argues "[o]ne can often generalize on the basis of a single case, and the case study may be central to scientific development via generalization as supplement or alternative to other methods" (Flyvbjerg, 2006, p. 228). Furthermore, the case study approach allows to study phenomenon in an in-depth way, allowing the researchers also to focus on relevant contextual factors that can potentially influence the investigated relationship (Cesar Casiano Flores et al., 2020; Yin, 1981). Conducting

this research via a *single* case study approach allows for paying attention to details that would be overlooked by a statistical analysis (Cesar Casiano Flores et al., 2019; Lijphart, 1975). Additionally, a single case study approach is, as underlined by Yin (1981) most suitable to study a phenomenon or relationship on which the literature has a number of assumptions – which is the case in this study.

In order to study and understand the relationship between public values and coordination instruments, we selected a case based on the following two criteria. First, multiple sets of data had to be available for a specific context that is changing as little as possible. Therefore, it was deemed relevant to study the e-governance policy of a single public administration over a longer time period. It was crucial that e-governance policy documents were available as those documents are the relevant source to identify the public values and the coordination instruments. By studying a longer time period, a time perspective could be included in the research and multiple data points become available for the research. Secondly, as the research is focused on a single case study it is important to align with Flyvbjerg (2006) who contends that when selecting a case study, it is important not to select an outlier.

On the basis of these two criteria it was decided to select the e-governance policy of the Belgian federal administration. Firstly because the Minister responsible for the e-governance policy domain presents, in alignment with the public administration responsible for the e-governance policy, on an annual basis the policy plans in Parliament. Those documents are available since 2004 for all policy domains and the introduction of the presentation of those policy plans is the result of the legal power wanting to install greater checks on the executive power. The documents include information on the overall direction of the policy and how this can be achieved in practice. The documents can be considered as the guiding/leading document on the policy to be performed by the public administration. The policy plans are available until 2020, and there is a timeline of 17 years.[12,13] Each of the documents is focused on the next calendar year. Secondly, the e-governance policy of the Belgian federal administration can be considered to be average when comparing it to other Western-European countries (DIGIT, 2019). This is important in order to avoid that the case study is considered as an outlier.

In the next paragraphs the applied approach for the analysis of the public values, the analysis of the coordination instruments and the relation between the two is explained. A partially mixed methods research approach is applied in this study. Both qualitative and quantitative data

[12] Due to a political crisis in the period 2009-2011 and in the period 2019-2020, no Policy Notes were presented to Parliament in 2010 and 2019.

[13] The data for the years 2004, 2005, 2006, 2011 and 2017 is retrieved from Chantillon et al. (2020)

collection and data analysis methods are applied. However, it is a partially mixed methods approach as a combination of qualitative and quantitative methods was only applied for the document analysis, and not for the focus groups (Saunders et al., 2019).

3.3.2 Public Values Analysis

The public values analysis was conducted by combining qualitative and quantitative techniques. One of the main difficulties of the public values literature is the disagreement on what can be considered as public values and the related classifications. As Fukumoto & Bozeman (2019) state, "to this point scholars have not agreed upon an approach to identifying public values, though several approaches have been suggested [...]. Scholars have suggested that public values can be distilled from governmental documents and records such as constitutions, public laws, executive orders and judicial decision" (Fukumoto & Bozeman, 2019, p. 641). This approach has also been applied in this study.

Table 3.3 – Overview of Analysed Documents

	Case ID	Policy Notes	English Translation of Document Title
1	2004	Beleidsnota Informatisering - 2004 (voor 2005)	Policy Note Computerization
2	2005	Beleidsnota Informatisering - 2005 (voor 2006)	Policy Note Computerization
3	2006	Beleidsnota Informatisering - 2006 (voor 2007)	Policy Note Computerization
4	2008	Beleidsnota AV en ICT - 2008 (voor 2008)	Policy Note Administrative Simplification and ICT
5	2008_2	Beleidsnota AV en ICT - 2008 (voor 2009)	Policy Note Administrative Simplification and ICT
6	2009	Beleidsnota AV en ICT - 2009 (voor 2010-2011)	Policy Note Administrative Simplification and ICT
7	2011	Beleidsnota AV - 2011 (voor 2012)	Policy Note Administrative Simplification
8	2012	Beleidsnota AV - 2012 (voor 2013)	Policy Note Administrative Simplification
9	2013	Beleidsnota AV - 2013 (voor 2014)	Policy Note Administrative Simplification
10	2014	Beleidsnota Digital Agenda - 2014 (voor 2015)	Policy Note Digital Agenda
11	2015	Beleidsnota Digital Agenda - 2015 (voor 2016)	Policy Note Digital Agenda
12	2016	Beleidsnota Digital Agenda - 2016 (voor 2017)	Policy Note Digital Agenda
13	2017	Beleidsnota Digital Agenda - 2017 (voor 2018)	Policy Note Digital Agenda
14	2018	Beleidsnota Digital Agenda - 2018 (voor 2019)	Policy Note Digital Agenda
15	2020	Beleidsnota Digitalisering - 2020 (voor 2021)	Policy Note Digitalisation

Given that the research focuses on understanding the relationship between public values and coordination instruments in the e-governance policy domain, it was decided to apply a public values typology that includes a connection between those two aspects. Therefore, the typology developed by Chantillon et al. (2020), which was introduced in the research background above was operationalised to a coding scheme. The e-governance policy documents were analysed making use of this coding scheme in a closed coding approach. The NVivo 12 software was used for coding. This approach allowed to have a fully comparable dataset as all documents were analysed via the same coding scheme. A complete overview of the documents can be found in Table 3.3.

All data from the coded documents was grouped into the three public values groups (hierarchy, market and network). In this way a complete overview of all public values data in each document was obtained. Afterwards, the data of the three public values groups was weighted in line with their weight within the total group of public values. Indeed, this is necessary as the three public values groups each have a different number of assigned public values (see Figure 3.1). By weighing the data, the data of the different public values categories becomes comparable. For example, the first document (Case ID 2004) had 46 references to hierarchy-related public values. This number was multiplied by the fraction of the hierarchy-related public values and the total number of public values (i.e. 15 hierarchy-related public values / 35 public values in total – hierarchy, market and network). Afterwards, this result was converted to a percentage, based on the obtained weighted hierarchy-related absolute number of public values divided by the total number of weighted public values (leading to a percentage of 17,13% hierarchy-related public values present in the document of 2004).By transferring this data into percentages, the data of the different documents becomes comparable. This action was repeated for each of the public value categories (hierarchy, market and network) in each of the documents. This approach is in line with Chantillon et al. (2020) (i.e. Chapter 2 of this thesis). The coding scheme can be found in Annex 3.1, the data obtained from the coding can be found in Annex 3.2.

3.3.3 Coordination Instruments Analysis

In contrast to the literature on public values, there is less of a discussion on what different types of coordination instruments that exist (e.g. de Bruijn & Dicke, 2006; Meuleman, 2008; Sarapuu & Lember, 2015; Verhoest et al., 2007; Wouters et al., 2021). The typology of Bouckaert et al. (2010), presented above (see Table 2), was operationalised into a coding scheme. Afterwards the analysis of the coordination instruments in the e-governance policy documents was conducted

whereby this closed coding scheme was used for the coding. Table 3.3 provides an overview of the analysed documents. In line with the public values analysis the data was analysed in NVivo 12. Afterwards the different data results were transformed into percentages to allow a comparison between the different policy documents. Also, since the same policy documents as those of the public values were analysed, it was possible to compare the quantified results afterwards with each other. The coding scheme can be found in Annex 3.3, the data obtained from the coding can be found in Annex 3.4.

3.3.4 Connecting Public Values and Coordination Instruments

In order to gain a deeper understanding of the connection between public values and coordination instruments, it was decided to organise two focus groups. The focus groups also allowed to confirm the results of the coordination instruments analysis. A focus group permits the detailed exploration and discussion of a specific topic (Krueger, 1994). Furthermore, focus groups provide the possibility to ask participants to further clarify what they say and to detect complexities that go beyond the direct relationship that is being studied (Belanger & Tech, 2012; Krueger & Casey, 2000; Van Cauter et al., 2015).

The focus groups were organised with experts working on the e-governance policy of the Belgian federal administration. One focus group had three participants, the other one had four participants. All focus groups participants have senior management functions in the Belgian federal administration, are strongly knowledgeable about the e-government policy followed by the public administration and are all related to different organisations of the public administration. A purposive sampling approach was applied: All participants were selected on the basis of their knowledge and expertise related to the functioning of the federal administration. Purposive sampling proves to be highly useful for focus groups as respondents have the knowledge to provide relevant insights in the studied topic (Morgan, 2011; O.Nyumba et al., 2018). The focus groups were all transcribed. Whereas the policy documents were analysed via a closed coding scheme, the focus groups were analysed via an open approach. Such an open approach allowed for the identification of any factor that could influence the relationship between public values and coordination instruments.

3.4 Results

This section is structured into three parts. The first part presents the results of the public values analysis. Afterwards, the results of the analysis of the coordination instruments through the

analysis of the Policy Notes and focus groups follows. Finally, the results of the comparison between the public values analysis and the coordination instruments analysis are presented.

3.4.1 Analysing the Balance of Public Values

The quantified results of the public values analysis are visualised in Figure 3.1. The results first demonstrate that the attention for network-related public values has, for the studied time period, increased at the expense of market-related public values. Up to 2011, and taking into account the 2006 exception, the results are dominated by market-related public values. The Policy Note of 2006 is characterized by a strong increase of network-related public values at the expense of market-related public values in 2006. This shifted from 2011 onwards with a growing attention for network-related public values. This shift has led to a more balanced public values distribution in the period 2014 – 2020. The Policy Notes published in the period 2014 – 2020 show a more stable presence of network-related public values. The percentages of those public values are always situated around 36% to 40%. The result seem to indicate that an increased focus on network-related public values goes hand in hand with a decrease of market-related public values.

Secondly, the data indicates that the attention for hierarchy-related public values has only slightly increased over the years. From 2004 until 2013, the percentage of hierarchy-related public values is always below average (with an average of hierarchy-related public values of 21,02% for the entire period), with the exception of the years 2005 and 2006. The absolute minimum is the 2011 Policy Note. Afterwards, the attention for hierarchy-related public values slightly increased, with the highest percentage of public values being present in 2014. In 2016 the percentage of hierarchy-related public values was below average. Overall the attention for hierarchy-related public values has only slightly increased within the studied period.

Thirdly, and arising from the two previous results, the data demonstrate that the attention for market-related public values has decreased over time. Apart from two exceptions, in 2006 and 2011, the market-related public values have always been dominant between 2004 and 2013. In the different Policy Notes, market-related public values account for more than 50% of the public values that could be traced during this period. Afterwards, the balance shifted, with 2014 being a turning point. In 2014 the market-related public values were in minority position, but there is however an overall balance between the three groups of public values. From 2015 onwards the market-related public values and the network-related public values have a similar percentage, with the exception of 2017 when the gap between market-related public values and network-related public values was higher than in the other years. In 2016, market-related public values

score the highest, but are followed immediately by network-related public values. Concerning market-related public values a shift takes place: From 2004 until 2013 market-related public values have a clear dominance. The dominance starts already to disappear from 2011 onwards leading to a more balanced distribution of public values.

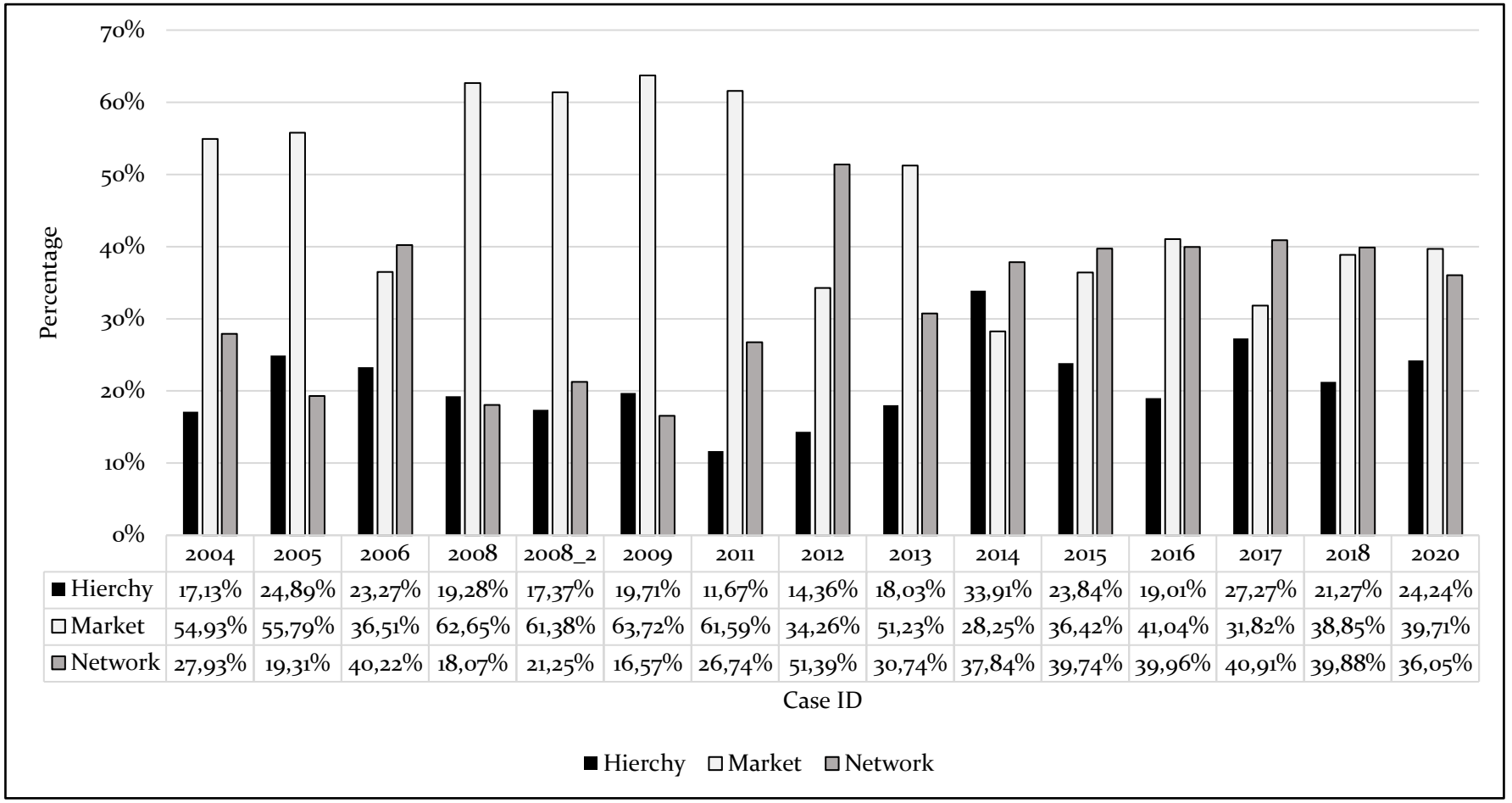
With respect to the balance of public values it can be concluded that a more balanced picture of public values striven for by the public administration in the domain of e-governance has emerged over the years. Recognising the exception of 2006, the public values balance starts only to shift from 2012 onwards, with a more stabilised balance being present from 2014 onwards. Both market-related and network-related public values play a dominant role in the public values striven for by the Belgian federal administration in the field of e-governance. Hierarchy-related public values are less present but still have a substantial presence in the overall analysis.

3.4.2 Presence of Coordination Instruments

In this part of the results section, attention is devoted to the results of the analysis on the coordination instruments. A double approach was thereby taken: The Policy Notes, which were also analysed for the public values, were analysed to detect the coordination instruments. Secondly, two focus groups were organised to gain a more fundamental understanding on the selection of both formal and informal coordination instruments and factors influencing this selection.

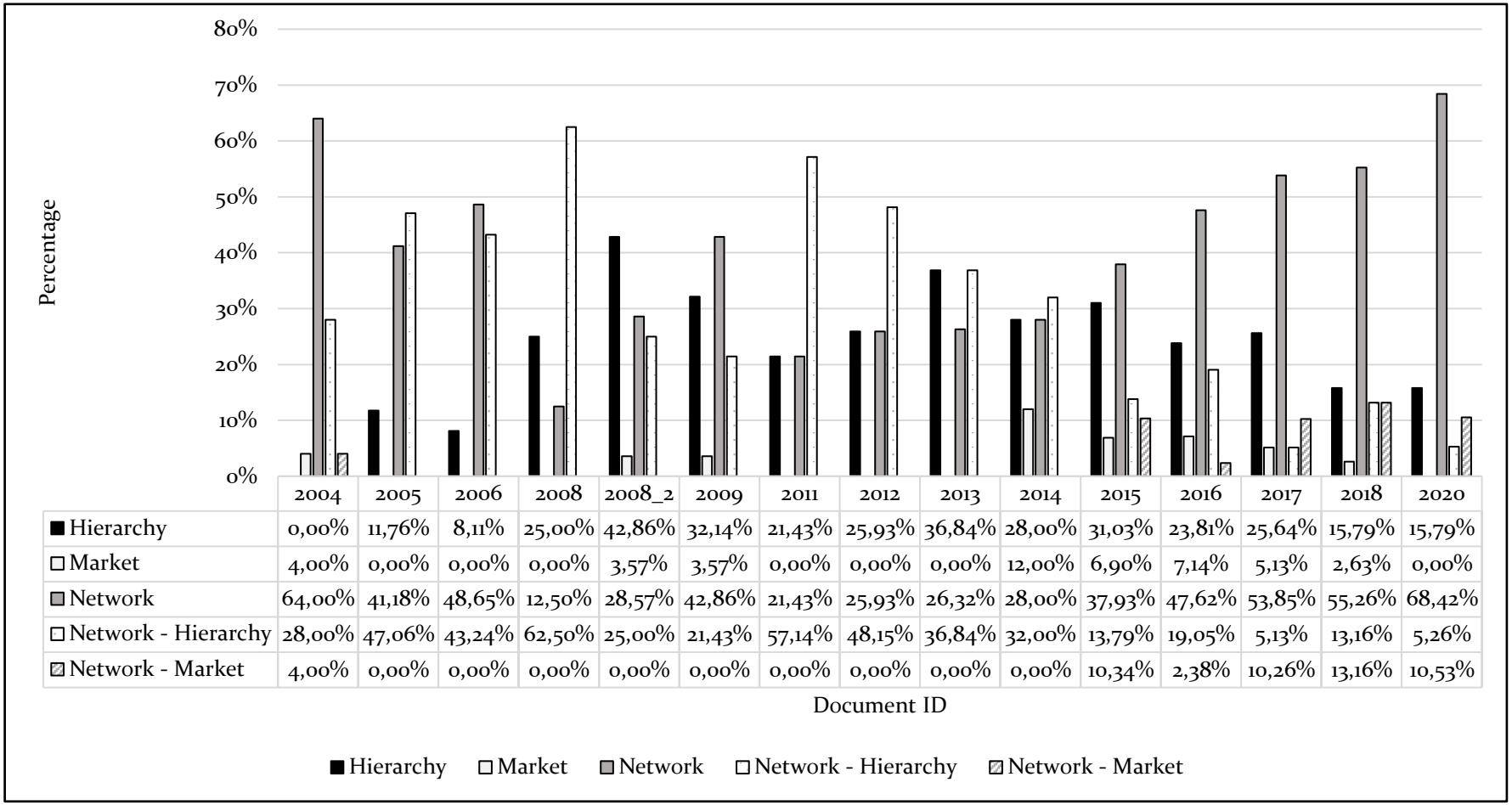
3.4.2.1 References to Coordination Instruments in the Policy Notes

The quantified results of the coordination instruments analysis are visualised in Figure 3.2. A first finding from the analysis is the overall dominance of coordination instruments related to network governance. In eight of the fifteen documents, the network-related coordination instruments have the highest presence. For the period 2015 up to 2020 there is a dominance of network-related coordination instruments. Interesting in this regard is the period 2004 up to 2006. During this period, the network-related coordination-instruments are dominant together with the network-hierarchy-related coordination instruments, after this period this combination does not occur again. Second, the results indicate that also the network-hierarchy-related coordination instruments dominate. Indeed, in 2005, 2008, 2011, 2012 and 2014 they have a dominant position in comparison to the other groups of coordination instruments (in 2013, the dominant position is shared with hierarchy-related coordination instruments).



	2004	2005	2006	2008	2008_2	2009	2011	2012	2013	2014	2015	2016	2017	2018	2020
Hierchy	17,13%	24,89%	23,27%	19,28%	17,37%	19,71%	11,67%	14,36%	18,03%	33,91%	23,84%	19,01%	27,27%	21,27%	24,24%
Market	54,93%	55,79%	36,51%	62,65%	61,38%	63,72%	61,59%	34,26%	51,23%	28,25%	36,42%	41,04%	31,82%	38,85%	39,71%
Network	27,93%	19,31%	40,22%	18,07%	21,25%	16,57%	26,74%	51,39%	30,74%	37,84%	39,74%	39,96%	40,91%	39,88%	36,05%

Figure 3.1 – Public Value Distribution - Policy Notes: Period 2004 - 2020



	2004	2005	2006	2008	2008_2	2009	2011	2012	2013	2014	2015	2016	2017	2018	2020
Hierarchy	0,00%	11,76%	8,11%	25,00%	42,86%	32,14%	21,43%	25,93%	36,84%	28,00%	31,03%	23,81%	25,64%	15,79%	15,79%
Market	4,00%	0,00%	0,00%	0,00%	3,57%	3,57%	0,00%	0,00%	0,00%	12,00%	6,90%	7,14%	5,13%	2,63%	0,00%
Network	64,00%	41,18%	48,65%	12,50%	28,57%	42,86%	21,43%	25,93%	26,32%	28,00%	37,93%	47,62%	53,85%	55,26%	68,42%
Network - Hierarchy	28,00%	47,06%	43,24%	62,50%	25,00%	21,43%	57,14%	48,15%	36,84%	32,00%	13,79%	19,05%	5,13%	13,16%	5,26%
Network - Market	4,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	10,34%	2,38%	10,26%	13,16%	10,53%

Figure 3.2 – Presence of Coordination Instruments – Policy Notes: Period 2004 – 2020

A third finding from the analysis is that the hierarchy-related coordination instruments also have a crucial position. While the hierarchy-related coordination instruments take only twice a dominant position in the Policy Notes (in 2008_2 and 2013, shared with network-hierarchy-related coordination instruments), this group of coordination instruments is seven times the second most dominant group of coordination instruments present in the Policy Notes. in the period 2015 – 2020, when the network-related coordination instruments are dominant, the hierarchy-related coordination instruments have an important role in the overall presence of coordination instruments in the Policy Notes.

Fourthly, the results indicate that the market-related coordination instruments are only minorly present in the Policy Notes. There is an overall increase on the use of market-related coordination instruments over the years. When comparing this increase and the overall presence of market-related coordination instruments with the other coordination instruments, then the results demonstrate that the selection of market-related coordination instruments remains limited. Furthermore, also the group of network-market-related coordination instruments has a limited presence. There is a slight increase over the years – especially after 2015. This does however not influence the overall position of network-market-related coordination instruments in the Policy Notes.

The results indicate that for the entire period 2004 – 2020 there is an overall dominance of the network-related coordination instruments in combination with network-hierarchy-related coordination instruments and hierarchy-related coordination instruments. During the researched period, the attention for market-related coordination instruments as well as network-market-related coordination instruments has slightly increased but remains negligible in the overall use of coordination instrument by the Belgian federal administration in implementing e-governance policy.

3.4.2.2 Understanding the Use of Coordination Instrument by the Belgian federal administration

In order to gain a more profound understanding on the use of coordination instrument in the e-governance policy focus groups were organised. The focus group data analysis results confirmed the results of the document analysis concerning the coordination instruments. There seems to be a preference for network-related coordination instrument, supplemented with the use of network-hierarchy-related coordination instruments or hierarchy-related coordination instruments. Also from an informal point of view, the network-related coordination

instruments are often applied – although a slight differentiation in the application of the tools can occur.

Several focus group participants underlined that within the Belgian federal administration, the federal organisations have a high degree of independence concerning the policy they develop and implement. This is reflected in the use of the coordination instruments within the federal administration. Organisations tend to work together but prefer to do this as equal partners, thereby respecting each other's independence without too much hierarchical control and steering. Furthermore, this is also reflected in the culture of the civil servants. The focus group participants indicated that civil servants of the federal administration tend to feel connected to their individual organisation, instead of the Belgian federal administration as whole. Furthermore, the participants clarified that this high degree of independence is something that federal organisations are not willing to give up. The organisations consider this independence as a way of guaranteeing their position and policy within the federal administration.

Because of this logic, the focus group respondents underlined that the presence of network-related coordination instruments will always be high and preferred by the federal organisations. Concerning the future use of coordination instruments, focus group participants first underlined that the preference for network-related coordination instruments will always remain high. Second, there was consensus on the development of a common vision/strategy as well as the set-up of an organisation that can play a coordinating role and function as a centre of expertise. These are both network-related coordination instruments. However, some types of coordination instruments that are currently being used in the federal administration cannot be changed because of legal requirements – think for example of the use of traditional input-oriented financial management systems, which is a hierarchy-related coordination instrument.

The results of the focus group are in line with the results of the document analysis concerning the use of coordination instruments. Furthermore, the focus groups provided insights in the logic of why certain coordination instruments are used. There is a dominance of network-related coordination instruments, in combination with network-hierarchy-related coordination instruments and/or hierarchy-related coordination instruments.

3.4.3 Bringing together the Balance of Public Values to the Presence of Coordination Instruments

The results for the public values and the coordination instruments have been analysed on an individual basis. On the basis of the theoretical insights available in the academic literature, one

would have expected that certain public values can be connected to certain governance mechanisms (Hood, 1991; Nabatchi, 2018). The results of this empirical study however contrasts with the theoretical expectations. During the studied period, the public values balance striven for by the public administration has shifted and became more nuanced. Whereas the beginning of the studied period was characterised by a dominance of market-related public values, the balance has shifted and network-related public values became more important. Furthermore, the hierarchy-related public values cannot be considered to have had a dominant role in comparison to the two other public values groups. Nevertheless, there is substantial presence of hierarchy-related public values.

In contrast, the results of the coordination instruments analysis indicate that there is an overall dominance of the network-related coordination instruments in combination with network-hierarchy-related coordination instruments and hierarchy-related coordination instruments. On the basis of the dominant presence of market-related public values, a similar dominance was expected for the coordination instruments. However the attention for market-related coordination instruments as well as network-market-related coordination instruments has remained low throughout the entire studied period. The results are thus in contrast with what was expected on the basis of the theoretical reflections formulated by Hood (1991) and Nabatchi (2018).

The question remains however how this disconnection between the balance of public values and the coordination instruments selected for achieving and realizing the public values striven for can be explained. The results of focus groups provide insights in the answer to this question. The public values are the guiding principles, and can be considered as steering the future activities of the public administration. The public values, on the one hand, represent as such what is aimed for in the future. The coordination instruments, on the other hand, are necessary tools to ensure that the public values can be achieved, but are thereby representing the current situation. The results of the focus groups indicate that changing those coordination instruments is a highly difficult exercise in the Belgian federal administration for two reasons.

A first factor is the willingness of different federal organisations to ensure that their independence within the federal administration can be preserved. This factor is not only enshrined within the management logic of those federal organisations, but also in the perspective of the organisations' civil servants. Secondly, focus group respondents indicated that there is a need for political support to introduce other coordination instruments that alter the currently dominant balance of coordination instruments – namely a dominant role of network-related coordination instruments, supplemented with network-hierarchy-related

coordination instruments and hierarchy-related coordination instruments. The respondents indicated, related to this, that it is more difficult from a political point of view to introduce other coordination instruments than to alter the to be striven for balance of public values. The political elite and the public administration collaborate with each other and require each other's support. Modifying how the public administration, and as such the different organisations, function requires the support of the public administration itself. In contrast, deciding on the overall balance of public values to be striven for by the public administration is less impactful if sufficient leeway is allowed for the public administration – which is the case for the Belgian federal administration, as the approach taken by the Belgian federal administration is dominated by network-related coordination instruments.

Those two factors, identified in this case study, contribute to an improved understanding of the relation between public values and coordination instruments, the by Fukumoto & Bozeman (2019) labelled instrument problem of public values research.

3.5 Conclusion

The aim of this study was to examine and understand the relationship between public values and coordination instruments in practice, whereby the following research question was asked: **What is the connection between public values and coordination instruments in the e-governance policy of a public administration?** The research results indicate that the balance of public values that is striven for by the public administration on the one hand, and the coordination instruments referred to by the public administration on the other hand, are likely not connected. The results of this case study are as such not aligned with theoretical expectations. The research findings point in the direction of two influencing factors. The different time perspective of the public values and the coordination instruments seems to have played a key role in relation to those two factors: Public values aim at the future, coordination instruments are grounded in the present. A first factor is the degree of embeddedness of currently used coordination instruments in the public administration and its organisations. Within the Belgian federal administration, this embeddedness was high. Consequently, the willingness to change them was low. A second factor relates to the relationship between the political elite on the one hand and the public administration on the other hand. Both are dependent on each other's support. Modifying how the public administration functions requires the support of the federal organisations and its civil servants. In contrast, deciding on the overall balance of public values to be striven for by the public administration is less impactful if

sufficient autonomy is allowed for the public administration. At least within the Belgian federal administration e-governance policy, the political elite has more impact on the public values to be striven for, whereas the public administration has more influence on the coordination instruments to be used. The central role of those two factors has to some extent been recognised by other authors working on the e-governance of the Belgian federal administration (De Bot, 2015; Kruk et al., 2019; Pollitt & Bouckaert, 2017; Wouters et al., 2020, 2021).

These findings contribute in the first place to the ongoing academic debate to gain a more profound understanding of the relation between public values and the mechanisms to achieve those public values. They nourish the theoretical reflections on this existing instrument problem (Fukumoto & Bozeman, 2019). Secondly, these initial insights can support practitioners on how to approach the public values that are striven for in relation to their actual achievement. If practitioners aim to devote more attention to the public values enshrined in their e-governance policy – a policy that has the potential to influence all other policy domains – than a profound understanding of those public values and their achievement is required. Finally, the results contribute to the overall understanding of how the governance of public administrations functions in practice (Bouckaert et al., 2010; Pollitt & Bouckaert, 2017).

This research has a number of limitations. The study was executed by making use of a single case study approach. It could be argued that the research results of a single case study are not generalizable to other case studies due to its specific focus. However, Flyvbjerg (2006) argues that case study research should not lead to generalizations for other cases – which are then in fact particularizations – but to general understandings of a particular case which can then be used in future research (Flyvbjerg, 2006; Gerring, 2007). Secondly, the core data collection of this study consists of a document analysis. Although this could be considered to be limited in scope, there is no alternative to study the connection between public values and coordination instruments over a longer time period. There is a risk that interview respondents have a twisted view on the public values striven for in the past, compared to the public values striven for today. Also, a longer time period – in this study 17 years – makes it difficult to identify who to interview. A final limitation is related to the decision(s) on why to focus on a particular balance of public values. This study does not explain why certain decisions on the balance of public values are made. This brings in the need for further research. In the first place, further research with more cases is required, in different countries and at different levels of public administration. Secondly, the study of other policy domains can help to gain a more generalised view of the relation between public values and coordination instruments. Finally, further research on why certain public values are striven for in relation to other public values would be relevant.

Chapter 4 The Governance Landscape of Geospatial E-Services: The Belgian Case

Note

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4.1 Introduction

4.1.1 Objective and Research Questions

Geospatial data have high value for administrations, citizens and businesses: It is a type of data that is both critical and special for public administrations, as "they refer to a location on the earth" (Masser & Crompvoets, 2015; Sjoukema et al., 2017; Vancauwenberghe et al., 2014a, p. 156). Geospatial data have high potential for actors in various domains, and administrations do not only often own a lot of geospatial data, sometimes without even realizing it, but will also use it in most of (e-)services they provide to users, making it a fundamental type of data (and related services) for public administrations (Crompvoets & Bouckaert, 2009).

Governments and administrations are today increasingly aware of the possibilities offered by technology and develop e-services for their internal relations and their relations with citizens and businesses. Those administrations often build on existing ways of working, and combine or build on existing technology. Affisco & Soliman (2006), however, underlined that it is necessary to connect all the different e-services that have been developed since the beginning of the 21st century. Latre et al. (2013) argue that 'the level of maturity or sophistication of e-government services is not improving in those areas that require geospatial information. Furthermore, the authors underline that, although geospatial data are more and more available, "their use and management is still more complex (due to diversity and volume) when compared to other kinds of data" (Latre et al., 2013, p. 82). So, the focus of this chapter lies on geospatial data and e-services, firstly as the data are highly valuable and necessary for the development of e-services, and secondly, because many e-services can still be improved by making use of geospatial data.[14]

In line with Affisco & Soliman (2006), who argue that the islands of e-services need to be connected, the aim of the chapter is to understand what governance, and specifically what type of coordination, is used in the sector of geospatial data and e-services. Coordination is central as e-services have until now often been developed on an individual basis by organisations. In addition, the European Interoperability Framework highlights the importance of coordination: It underlines that organisational relations need to be clarified and formalised in order to develop and maintain e-services (European Commission, 2017a).

The general research question guiding this research is the following (see Chapter 1. Introduction): **What factors impact the governance structure of geospatial e-services?** A

[14] It also has to be underlined that this research has been executed in light of the BELSPO Brain-be FLEXPUB research project, which funded this PhD research. The FLEXPUB project focused on geospatial data and e-services, also explaining the orientation of this article.

number of specific research questions have been formulated on the basis of the research aim and general research question. A first research question is: **Who are the leading public sector actors with regards to geospatial e-services?** Based on this question, and bearing in mind that geospatial data are necessary for geospatial e-services, a second research question was formulated: **Who are the users and producers of geospatial data, and what is the source of origin of their data?** Thirdly, the coordination between the leading public sector actors will be analysed: **What types of coordination mechanisms are used in the field of geospatial data and e-services?** Finally, the fourth research question, **how can the current governance structures be explained?,** aims to provide an explanation of the current situation concerning geospatial governance.

The Belgian administration has been selected as a case study. From a governance perspective, it is a highly interesting country to study as it has a federal structure A federal state requires the actors to cooperate via instruments that focus on loyalty and coherence; however, this seems to be lacking (Popelier & Sinardet, 2012). It is composed of a Federal State, three regions and three language communities. The three regions (Brussels Capital Region, Flemish Region and Walloon Region) are responsible for territorial policy areas such as urban development and environmental policy. Furthermore, there are three language communities (Flemish Community, French Community and German-speaking Community). The language communities are responsible for personal matters. So the regions are especially important from a geospatial perspective. Besides the Federal State, the regions and the language communities, there are also 10 provinces and 589 communities (Alen & Muylle, 2012). This chapter will, however, focus on the highest state structure that is mostly linked to geospatial e-services and data, namely the administrations of the Federal State and the three regions. Studying the language communities, the provinces and communities do not fall within the scope of this chapter.

The chapter starts with a theoretical overview of the three main concepts, i.e. e-services, geospatial data and governance. The methodology that was used to find an answer to the four research questions is explained. Thereafter the results are presented, answering the first three research questions. In the discussion the current governance status is analysed and explained, answering the fourth research question. Finally, some conclusions are drawn and further research on governance structures for e-services outlined.

4.1.2 Theoretical Overview: E-Services, Geospatial Data and Governance

4.1.2.1 E-Services

Tiwana & Ramesh (2001) are among the first to define e-services and state that those are "[…] Internet-based applications that fulfil service needs by seamlessly bringing together distributed, specialised resources to enable complex, (often real-time) transactions. Examples of e-services include supply chain management, customer relationship management, accounting, order processing, resource management, and other services that are electronically delivered through the Internet" (Tiwana & Ramesh, 2001, p. 1). The focus of their article lies, however, on software as a service. Scupola (2008) defines e-services "as services that are produced, provided and/or consumed through the use of information and communication technologies-networks such as internet-based systems and mobile solutions" (Scupola, 2008, p. 1). Another definition is provided by Lovelock & Wirtz (2004): An e-service is "an act or performance that creates value and provides benefits for customers through a process that is stored as an algorithm and typically implemented by networked software" (Hofacker et al., 2007, p. 16; Lovelock & Wirtz, 2004, p. 9). Whereas the first two definitions can be used for both public and private perspectives on e-services, the perspective of Lovelock & Wirtz (2004) is focused more on the private sector, with the reference to 'customers'. Furthermore, their definition also defines an e-service more from a technical perspective by making a reference to 'an algorithm' and 'networked software'. The main weakness of the Tiwana & Ramesh (2001) definition is that it is written from a 'software as a service'-perspective, whereas the definition of Scupola (2008) is more focused on the non-technical side of e-services. The Scupola (2008) definition is more connected to governance, which is the focus of this research. Therefore, this definition has been chosen.

An important part of the academic discussion on the meaning of e-services is the distinction between public and private e-services. In the early days of defining e-services, a governmental perspective on e-services was lacking: This can partially be attributed to the fact that the 'e service innovation' was launched in 2000 by Hewlett-Packard, a private sector actor (Technology Writers, 2000). Later, more specific attention was developed for the e-services developed in a governmental context (De Bot, 2015; Scupola et al., 2009).

Finally, the emergence of e-services has led to the disappearance of the division between goods and services. Goods that used to be sold to customers are, via digitalisation, converted into

services (Lindgren & Jansson, 2013; Scupola et al., 2009) . A striking example of this convergence in the geospatial context is maps. As a result of the EU INSPIRE Directive and the Directive on the re-use of public sector information (Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 Establishing an Infrastructure for Spatial Information in the European Community (INSPIRE), 2007; *Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the Re-Use of Public Sector Information.*, 2003; *Directive 2013/37/EU of the European Parliament and of the Council of 26 June 2013*, 2013), governmental agencies previously selling maps, as goods, are now increasingly offering the information via digital channels as a service, and no longer as a good. This can have an effect on governmental organisations, which are partially self-sustaining via the selling of goods such as maps, as they might have to review their business model.

4.1.2.2 Geospatial Data

Besides e-services, there is also the connection with geospatial data. The Oxford Dictionary does not define geospatial data, but spatial data are defined as "facts and statistics used for reference or analysis, relating to space" (Pearsall et al., 1999). The INSPIRE Directive takes a very similar position and defines spatial data as "data with a direct or indirect reference to a specific location or geographic area" (Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 Establishing an Infrastructure for Spatial Information in the European Community (INSPIRE), 2007, p. 5). Finally, Masser & Crompvoets (2015) state that "geographic information identifies or describes locations on the surface of the earth" (Masser & Crompvoets, 2015, p. 11). Although the authors do not define geospatial data, the link between both is clear: Information is giving meaning to the data itself.

Public authorities are the main users and producers of geospatial data. It is essential that the data quality can be trusted and has a controlled source of origin, as many policies are making use of this type of data (Latre et al., 2013). More and more, however, there are different stakeholders with a clear interest in this geospatial data. Geospatial data are no longer the sole territory of specialised mapping agencies and experts, but a tool that is becoming indispensable for modern governance. To ensure that various stakeholders have access to the data and see the added value of geospatial data, there has to be a creation of geospatial e-services and accompanying structures and processes, to govern the sharing of this geospatial data (Macharis & Crompvoets, 2014; Molenaar, 2017). Furthermore, the data can be used to improve existing e-services with a geospatial component. Latre et al. (2013) underline, however, that geospatial data are often "difficult to create, maintain and exploit, it is expensive, and presents scale, resolution,

thematic and jurisdictional problems when used" (Latre et al., 2013, p. 81). Therefore, one of the critical points in developing geospatial e-services is the existence of governance structures with established lines of coordination.

4.1.2.3 Governance & Coordination

Coordination "implies the bringing into a relationship [of] otherwise disparate activities or events" (Bouckaert et al., 2010, pp. 13–33). The question arises in what way coordination can be achieved (Frances et al., 1991). Bouckaert et al. (2010) brought together three theoretical approaches of coordination: Markets, Hierarchies and Networks, based on (see Table 4.1):

- **Hierarchy-type mechanism:** This type of mechanism is based on the idea that authority and power are the fundamental processes and resources. There can be bureaucratic hierarchical control: "public organisations remain basic bureaucracies that are controlled by rules and internal authority", and political hierarchical control, public-sector organisations and their behaviour are ultimately controlled by political leaders (Bouckaert et al., 2010, pp. 36–37). This mechanism can work via a broad range of possible tools, ranging from legislation to procedural control mechanisms.
- **Market-type mechanism:** Using the markets as a coordination mechanism is based on the idea that bargaining is the basic process and resource. In markets buyers and sellers come together and bargain until they find a common agreement – in this way a balance is found between supply and demand. However, to establish well-functioning markets to supply governmental services, there is a need for a central authority that can ensure that the outcomes desired by the government are achieved.
- **Network-type mechanism:** Networks are considered to be "(more or less) stable patterns of cooperative interaction between mutually dependent actors around specific issues of policy (or management)" (Bouckaert et al., 2010, pp. 43–48). So, between organisations there is cooperation based on voluntary collaborative actions as well as solidarity between organisations. There is bargaining, negotiation and co-operation between the participating organisations, based on trust, a certain level of information-sharing and time.

This remains, however, a theoretical perspective. In reality, there will always be a balance between the different mechanisms as "administrative reforms represent a mixed order" (Christensen & Lægreid, 2012, pp. 255–267).

Table 4.1 – The features of hierarchies, markets and networks

	Hierarchy	Market	Network
Base of interaction	Authority and dominance	Exchange and competition	Cooperation and solidarity
Purpose	Consciously designed and controlled design	Spontaneously created results	Consciously designed purposes or spontaneously created results
Guidance, control and evaluation	Top-down norms and standards, routines, supervision, inspection, intervention	Supply and demand, price mechanism, self-interest, profit and losses as evaluation, courts, invisible hand	Shared values, common problem analysis, consensus, loyalty, reciprocity, trust, information evaluation – reputation
Role of government	Top-down rule-maker and steerer; dependent actors are controlled by rules	Creator and guardian of markets, purchaser of goods; actors are independent	Network enabler, network manager and network participant
Resources needed	Authority, power	Bargaining, information, power	Mutual co-optation, trust
Theoretical basis	Weberian bureaucracy	Neo-institutional economics	Network theory

Source: Bouckaert et al. (2010)

4.2 Materials and Methods

A pragmatic approach, combining the three methods, was chosen to provide an answer to the four research questions. A first approach was a review of documents, mainly legal texts, that structure the relations between organisations, as well as the intergovernmental relations between the three regions and the federal administration. In order to illustrate the practical reality of the coordination between the different actors involved in the governance of geospatial data and e-services, the researchers also used qualitative analysis via interviews with the key actors, and a quantitative analysis in the form on an online survey (see Annex 4). Adopting this approach allowed them not only to understand the formal governance structures, but also the importance of informal coordination.

The combination of these three methods provided answers to the research questions in an inclusive way. The document analysis, in combination with the interviews (both qualitative methods), answers the first (Who are the leading public sector actors with regards to geospatial e-services?), the third (What types of coordination mechanisms are used in the field of

geospatial data and e-services?) and the fourth (How can the current governance structures be explained?) research question. The combined quantitative and qualitative approach creates the possibility to understand the governance structures and to explain them. The interviews are especially useful to understand the meaning of certain choices and events as well as to explain why and how a certain coordination approach emerged (Maxwell, 1996). As geospatial e-services depend on geospatial data, it was important to understand who the users and producers of geospatial data are, i.e. the second research question. This question could only be answered via a large-scale survey among the users and producers of geospatial data and e-services in Belgium. Therefore the online survey was used. A detailed methodological account is provided hereunder.

Firstly, the documents that define the governance landscape of geospatial e-services and data have been reviewed. Those texts are a valuable source of information as they provide an overview of the different tasks and roles of different organisations. The documents include a vast amount of qualitative data that are useful for answering the research questions – especially the first research question. Analysing documents has, however, one main weakness. They do not always represent the reality of the organisation. Therefore, interviews are especially useful as they allow us to get an insight into the way key actors experience reality (Bryman, 2016; Mortelmans, 2009).

Secondly, interviews were conducted with the various stakeholders between August 2016 and May 2017. The in-depth interviews allowed the researchers to collect information that would not be collectable via an online survey or via the document analysis. As Maxwell (1996) underlines, qualitative exploratory research – such as the interviews that were conducted – helps to understand the phenomena and events in which the stakeholders are involved.

A list of the organisations visited and whose key representatives were interviewed can be found in Table 4.2. These organisations were selected via a purposive sampling approaches, i.e. on the basis of their link to geospatial data and e-services, and included the following administrative levels: Federal level, regional level, local communities and organisations representing their interests, and the European Commission because of the INSPIRE Directive (Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 Establishing an Infrastructure for Spatial Information in the European Community (INSPIRE), 2007), the Directive on the re-use of public sector information (*Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the Re-Use of Public Sector Information.*, 2003; *Directive 2013/37/EU of the European Parliament and of the Council of 26 June 2013*, 2013) and the ISA & ISA² programs (European Commission, 2016). The private sector was included via the AGORIA

GEO-ICT Group, the main representative organisation of the private sector for geospatial data in Belgium, Proximus, the leading Belgian telecom operator, and BPOST, the main post company.

Table 4.2 – Organisations interviewed between August 2016 and May 2017 (listed chronologically)

	Type of Organisation	Administrative Level	Organisation
1	Administration	Federal	Emergency Service A.S.T.R.I.D
2	Administration	Federal	Federal Police
3	Administration	Federal	Federal Public Service Economy, SMEs, Self-employed and Energy
4	Administration	Federal	Federal Public Service Finance – General Administration of the Patrimonial Documentation
5	Administration	Federal	Federal Public Service Information and Communication Technology (FEDICT) – Person 1
6	Administration	Federal	Federal Public Service Information and Communication Technology (FEDICT) – Person 2
7	Administration	Federal	Federal Public Service Internal Affairs
8	Administration	Federal	Federal Public Service Mobility
9	Administration	Federal	Federal Public Service Public Integration and Federal Public Service Finance
10	Administration	Federal	INFRABEL
11	Administration	Federal	Ministry of Defence
12	Administration	Federal	Privacy Commission
13	Administration	Federal	Royal Meteorological Institute of Belgium
14	Administration	Federal	Royal Observatory of Belgium
15	Administration	Federal	Service for Administrative Simplification
16	Administration	Federal	Social Security Service
17	Administration	Federal	State Archives of Belgium
18	Administration	Federal	State Archives of Belgium
19	Administration	Brussels Capital Region	Brussels Regional Informatics Centre
20	Administration	Flemish Region	Agency Information Flanders
21	Administration	Walloon Region	e-Wallonia-Brussels Simplification, Department for Geomatics, Walloon Crossroads Bank
22	Administration	Walloon Region	Directorate General Economy
23	Administration	Local	Flemish Organisation of Local Cities and Municipalities
24	Administration	Local	Municipalities of Saint-Gilles and Brussels

25	Administration	Local	Union of Villages and Cities of Wallonia
26	Administration	European	European Commission – Directorate General CONNECT – Person 1
27	Administration	European	European Commission – Directorate General CONNECT – Person 2
28	Administration	European	European Commission – Directorate General CONNECT – Person 3
29	Public-private sector		Intermunicipal Company for Informational and Organisational Mutualisation (iMio)
30	Public-Private Sector		SMALS
31	Private sector		AGORIA GEO-ICT Group – Person 1
32	Private sector		AGORIA GEO-ICT Group – Person 2
33	Private sector		BPOST
34	Private sector		Proximus
35	NGO		EUROCITIES

Source: Chantillon, Simonofski, et al. (2017)

The form that the interviews took can be considered as between the interview guide approach and the standardised open-ended interview. All the topics to be discussed were decided in advance and some questions were predefined and standardised for all the respondents. Sometimes the questions differed slightly as not all topics were relevant for each organisation. In this way, it was ensured that the data were collected in a systematic way, while allowing for a certain level of flexibility (Mortelmans, 2009; Patton, 2015).

The analysis of the interviews was conducted on the basis of the COBIT 5 enablers (ISACA, 2012). The description of each enabler was used to analyse the textual outcome of each interview. In this way an overview of the different respondent positions was obtained, structured on the basis of the COBIT 5 enablers. Making use of those enablers ensured that the research took an all-encompassing approach when analysing the research data. This approach fits within the research spirit as it underlines that geospatial e-services are not just technological objects but also have an important social element. The COBIT framework was developed by the Information Systems Audit and Control Association (ISACA) in 1992, and is internationally recognised as a framework for IT governance bringing together international best-practices. In 2012 ISACA released a new version of the framework, COBIT 5, which is currently the most recent version of COBIT (De Haes et al., 2013). The fact that the COBIT 5 framework offers an all-encompassing methodology is both its main strength and weakness. Based on the fact that the framework is originally developed for the private sector and the knowledge that it is too all-

encompassing to use as a whole, it has been decided to use COBIT 5 as a general stepping-stone while giving it an interpretation linked to the approaches used in the public sector. The following enablers are described within COBIT 5 (ISACA, 2012);

- Processes
- Organisational structure
- Culture, ethics and behaviour
- Principles, policies and frameworks
- Information
- Services, infrastructure and applications
- People, skills and competencies

Besides the review of the legal texts and the interviews, a third research approach was used. An online survey was conducted in the period December 2016 – February 2017. It was mainly used as an explorative and descriptive instrument to underpin the findings of the interviews related to the governance of geospatial data and e-services (Billiet, 2012). The survey data used in this chapter focused on the willingness of the federal level and the regions to collaborate, the users and producers of geospatial data, and the source of origin for different types of geospatial data.

As the online questionnaire is an exploratory tool, it was ensured that all the different layers of the Belgian administration as well as the private sector organisations with a connection to the administration were included. Organisations were selected based on their relation to e-services or geospatial data. Within those organisations, a new selection of possible respondents was made on the basis of their relevancy to the topic. The population for this research was selected on their direct connection to the development and maintenance of e-services and/or geospatial data. The following levels were contacted:

- **Federal level:** Federal Public Services, Public Planning Services, Scientific Institutions, Federal Institutions of Public Interest, Public Welfare Institutions, Federal Police and Ministry of Defence.
- **Regional level:** Flemish Region, Walloon Region and Brussels Capital Region.
- **Provincial level:** The administration of the 10 Belgian provinces.
- **Communities:** The administrative head of each community was contacted. Additionally, the Flemish and Walloon organisations representing the local entities were contacted.
- **Private Sector:** A random selection, based on an online business directory for consumers of the provinces and the Brussels Capital Region, was conducted for the

following groups: Architects, building companies, land surveyors and notaries. Those groups can only execute their work by making use of geospatial data. Furthermore, the members of the Belgian private sector federation AGORIA GEO-ICT were contacted, as well as the four main consultancy companies (Deloitte Belgium, PwC Belgium, EY Belgium and KPMG Belgium).

- **Public-Private Sector:** The four main Belgian utility companies were contacted, as their functioning is strongly linked to geospatial data (Régie de l'Electricité de Wavre, Fluxys, ORES and EANDIS).

The questionnaire was sent to a total of 1317 respondents leading to an overall response rate of 15.1%. Leaving out the communities, however, leads to a higher response rate of 23.3%. A detailed overview of the response rate (in absolute numbers and percentages) can be found in Table 4.3.

Table 4.3 – Online survey response data according to targeted group

Target Group	Sample Size	Number of Respondents	Response Rate %
Federal administrations	210	63	30.0%
Regional administrations	293	67	22.8%
Provincial administrations	120	18	15.0%
Private sector	95	18	18.9%
Private–public partnerships	7	3	42.8%
Sub Total	725	169	23.3%
Communities	592	30	5.1%
Total	1317	199	15.1%

Source: Chantillon, Simonofski, et al. (2017)

In order to increase the response rate, three reminders were sent. Institutions of the Belgian federal level with a strong impact on (geospatial) e-services that did not reply were contacted by telephone. The survey was managed by IVOX. It is important to mention the objective role of IVOX: This respected company conducts surveys for public and private actors and supported the online questionnaire via its technical expertise.

The results of the online survey were analysed via the program IBM SPSS Statistics 24. A number of questions that included written text were analysed manually. Before starting the analysis, the quality of the data was examined: It was considered that for each of the respondents the data quality was sufficient to be used in the analysis. In the questionnaire a textbox was included at the end of the questionnaire in which the respondents were able to write down what they expect

of future geospatial e-services: 66 out of the 201 respondents did not fill in anything in this textbox. Writing nothing in this textbox might mean that there was no interest in the survey, and could imply that the data were not correct. Therefore, the researchers checked for those 66 respondents if they wrote down what role they have in their organisation. Filling in this question with a clear function title also shows if the survey was filled in in a serious way, as it is one of the last questions and the researchers presume that the other questions were therefore answered in a serious and honest way. Of the 66 respondents, there were only four respondents who did not write down a clear function title. Those four respondents were verified via their answers on the statements that were included in the questionnaire. Finally, it was agreed to include those four respondents in the analysis: Two of them were known personally to the researchers and showed a strong interest in the project, and two others gave replies to other questions that were in line with the other respondents.

4.3 Results

In Section 4.3.1, the leading public sector actors with regards to geospatial e-services are presented. The main actors of the federal administration, as well as the three regional administrations, are discussed and their relations analysed. Section 4.3.2 gives a deeper look at the users and producers of geospatial data, and the source of origin for the geospatial data, based on a categorisation of 20 types of geospatial data. Finally, Section 4.3.3 analyses what types of coordination are used in the field of geospatial data and e-services.

4.3.1 Leading Public Sector Actors at Different Administrative Levels

4.3.1.1 Federal Organisations

At the Belgian federal level the National Geographic Institute as well as the Federal Public Service Finance and the newly created Federal Public Service Policy and Support are supposed to play a leading role in the creation of geospatial e-services: Those organisations are key as they all have a leading role in the creation of geospatial data or in the development of e-services.

National Geographic Institute: This organisation takes the central governance position within the field of geospatial data at the federal level, both from a historical and judicial position (*Wet Tot Oprichting van Het Nationaal Geografisch Instituut*, 1976; *Koninklijk Besluit Tot Regeling van de Organisatie En de Werking van Het Nationaal Geografisch Instituut En van de Vereffening van de Subsidies Aan Dit Instituut*, 1985). However, the organisation seems to

struggle with developing geospatial e-services: A digital topographic map *CartoWeb.be* has been developed, but other geospatial data are often only available in formats that do not allow to be integrated in already existing e-services of the federal organisation responsible for e-government policy, the Federal Public Service Policy and Support (National Geographic Institute of Belgium, n.d.-a). Recently (March 2017) the federal geoportal *geo.be* was launched. This is, however, almost six years after the transposition of the INSPIRE Directive into law (*Wet Tot Omzetting van de Richtlijn 2007/2/EG van Het Europees Parlement En de Raad van 14 Maart 2007 Tot Oprichting van Een Infrastructuur Voor Ruimtelijke Informatie in de Gemeenschap (INSPIRE)*, 2011; National Geographic Institute of Belgium, n.d.-b). Finally, the National Geographic Institute, the State Archives of Belgium, the Royal Library and the Africa Museum have developed an e-service for historical maps of Belgium and Central Africa (National Geographic Institute of Belgium et al., n.d.).

Federal Public Service Finance – General Administration for the Patrimonial Documentation: The General Administration is one of the six General Administrations of the Federal Public Service Finance. From a historical perspective, this organisation has been, together with the National Geographic Institute and its predecessors, one of the cornerstones of geospatial data via the creation and maintenance of cadastral plans and the organisation of the cadastral taxation – one of the key instruments of a country. Also today it remains responsible for conserving and updating the cadastral documentation and maps (Federale Overheidsdienst Financiën, n.d.-b). The General Administration has developed its own geospatial e-services for exchanging information with governmental and non-governmental users: *URBAIN* for the exchange of patrimonial information with the 589 communities, *MyRentPro* for the registration of tenancy agreements for housing by estate agents and *CadGIS* for consultation of the cadastral plan by private users (Federale Overheidsdienst Financiën, n.d.-a).

Federal Public Service Policy and Support: Until early 2017, the Federal Public Service Information and Communication Technology (FEDICT) was responsible for the overall e-government policy of the federal administration. Besides the development of a common strategy, the aim was also to support other federal organisations in implementing the strategy and developing norms, standards and a basic architecture for e-services. However, since its foundation in 2001, there has been no specific focus on using geospatial data within e-services, the organisation has witnessed strong budgetary decreases, and lacked the necessary power to position itself within the broader federal administration. In March 2017, the new Federal Public Service Policy and Support was created. The Directorate General for Digital Transformation

within this Federal Public Service has taken over the tasks of the former FEDICT. Besides the Directorate General for Digital Transformation, a *G-Cloud* (Government Cloud) has been set-up: "The G-Cloud strives to a maximal cooperation between federal organisations in the field of basic ICT [information and communication technologies] infrastructure" (Koninklijk Besluit Houdende Oprichting van de Federale Overheidsdienst Beleid En Ondersteuning, 2017, p. 30685). It remains to be seen how effective the Directorate General for Digital Transformation will be in relation to the other actors within the federal administration. Although the focus on geospatial data has been very limited within FEDICT, there are a few examples of e-services that make, to a limited extent, use of geospatial data. An example is the *4th Way*, this e-service allows notaries and civil servant to collect debts when there is a public sale or registration of real estate (Federale Overheidsdienst Beleid en Ondersteuning, n.d.-a). Another example of an e-service developed by FEDICT is *eBirth*. When a baby is born, the birth is registered electronically way and the information is send digitally to the necessary governmental organisations, such as the community, for the registration of the birth place (Federale Overheidsdienst Beleid en Ondersteuning, n.d.-b).

So there are three main actors related to geospatial e-services at the federal level. It needs however to be underlined that there is currently a mismatch between the different capacities of the organisations. The organisation responsible for e-services does not have the necessary expertise to include the geospatial component in e-services, and the National Geographic Institute lacks the necessary capacity to develop widespread geospatial e-services. Only the Federal Public Service Finance combines its geospatial data and e-services in a proactive way.

4.3.1.2 Brussels Capital Region

In 1987 the Brussels Capital Region Government decided to create the Brussels Regional Informatics Centre and mandated it with all tasks related to the development and assistance of other actors in the Brussels Capital Region, concerning the topics of informatics, telematics or cartography (Centrum voor Informatica voor het Brusselse Gewest, 1987). As such, the region was the first in Belgium to make a clear connection between informatics and geospatial data. Besides the Brussels Regional Informatics Centre, however, also other organisations have a clear connection with geospatial data. These are members of the GeoBru Committee. This Committee, in charge of implementing the INSPIRE Directive, consists of six organisations: The Brussels Planning Office, the Brussels Institute for Environmental Management, the Brussels Regional Informatics Centre, Brussels Urban Development and Heritage, Brussels Mobility and the Company for Interurban Transport in Brussels. Other governmental organisations

contributing to the Brussels geoportal can be represented, but without voting rights. Although the different organisations still tend to develop their own geospatial e-services, there is a general acceptance and use of the geospatial data of the Brussels Urban Information System (UrbIS) offered by the Brussels Regional Informatics Centre. Examples of geospatial e-services developed with *UrbIS* are *fixmystreet.brussels*, this e-service allows users to make an online declaration of incidents in the public domain and to follow the actions taken by the administration to solve the incident, and the *Brussels Mobility Realtime e-service*, this web service allows users to receive real-time mobility information (Brussels Mobility, n.d.-a, n.d.-b). Another example is the *Building Permit Viewer*, it allows users to follow the granting of building permits on a map. There is general information available for all building permits granted in the region, and one can also log on and take actions on personal building permits (Brussels Urban Development, n.d.). As such, all organisations use the same basis for their geospatial e-services (*Ordonnantie van 8 Mei 2014 Betreffende de Oprichting En Organisatie van Een Gewestelijk Dienstenintegrator*, 2014).

4.3.1.3 Flemish Region

The organisation responsible for the coordination, organisation and provision of services related to the Geospatial Data Infrastructure was founded in 2004 as the Agency for Geospatial Information Flanders. The organisation's mission was extended to include the overall promotion and use of geospatial data in Flanders (*Decreet Houdende de Oprichting van Het Publiekrechtelijk Vormgegeven Extern Verzelfstandigde Agentschap "Agentchap Voor Geografische Informatie Vlaanderen,"* 2004; *Decreet Betreffende de Geografische Data-Infrastructuur Vlaanderen*, 2009). Recently, it was decided to merge the previously separated Agency for Geospatial Information Flanders and the Department Information Flanders, into the new Agency Information Flanders.[15] The agency aims "to build up a coherent government-wide information policy and to support and realise the transition of the Flemish administration towards an information-driven administration" (*Besluit van de Vlaamse Regering Houdende de Oprichting van Het Intern Verzelfstandigd Agentschap Informatie.*, 2016, p. 34028). Merging those two organisations was a logic decision as location appeared in a wide range of policy areas. Also, the newly created organisation brings information and expertise together. Furthermore,

[15] Via a Decree of the Flemish Parlement of 21 April 2021, the name and structure of the organisation was changed in to Agentschap Digitaal Vlaanderen / Agency Digital Flanders (*Decreet Tot Wijziging an Diverse Decreten Naar Aanleiding van de Reorganisatie van ICT Binnen Het Beleidsdomein Kanselarij, Bestuur, Buitenlandse Zaken En Justitie*, 2021). For reasons of consistency with the original article, the name has not been changed in this chapter.

there is a budgetary element included in the organisational reshuffling: Services existing in the two organisations can be merged.

However, the new organisational structure has mainly created a policy steering and development agency that is not providing any information technology tools. That is the task of the 'Facility Company' of the Flemish administration. This has led to a certain level of friction and tensions, as it is not always clear who is responsible for the different tasks – especially concerning new information technology developments within the Flemish administration. Furthermore, the merging of the agency responsible for geospatial information and the organisation responsible for the non-geospatial information risks underestimating the importance of geospatial data in the overall policy of the Flemish administration. This would be the opposite of the original aim of creating more visibility and impact of all governmental information.

A first example of an e-service is the *Large-Scale Reference File*, the topographic map of Flanders that is available as an e-service for all users active in the Flemish Region (Agency Information Flanders, n.d.-a, n.d.-f). Furthermore, there is also the Flemish regional geoportal *geopunt.be* created by the 2009 Geographic Data Infrastructure (GDI) Decree (*Decreet Betreffende de Geografische Data-Infrastructuur Vlaanderen*, 2009). Another e-service is the *Central Address Reference File*, created in 2009 by the Central Address Reference File (CRAB) Decree (*Decreet Betreffende Het Centraal Referentieadressenbestand*, 2009). Together with the Large-Scale Reference File, the Central Address Reference File is one of the basic elements in defining the geospatial infrastructure and future geospatial e-services (Agency Information Flanders, n.d.-b). Finally, the Generic Information Platform Public Domain (GIPOD) Decree provides the legal basis for the *Generic Information Platform Public Domain* (*Decreet Houdende de Uitwisseling van Informatie over Een Inname van Het Openbaar Domein in Het Vlaamse Gewest*, 2014). This e-service allows users of the public domain to inform other users of their actions in the public domain, for example when public works are planned or when there is a public event leading to the closure of roads (Agency Information Flanders, n.d.-e).

4.3.1.4 Walloon Region

Two organisations are responsible for the overall coordination of geospatial data and e-services, the Department for Geomatics and e-Wallonie-Bruxelles Simplification. The Department for Geomatics is the leading Walloon organisation: It is responsible for shaping the optimal conditions to use geospatial data, both from a technical and judicial point of view. The

organisation is expected to increase the visibility and knowledge on geospatial data towards governmental and non-governmental actors (Walloon Administration, n.d.-c).

In executing those tasks, the Department for Geomatics is closely cooperating with e-Wallonie-Bruxelles Simplification: This organisationos task is to increase the digitalisation and overall simplification of the administration as it provides services to other organisations of the Walloon Region and the French Community – similar to the situation in Flanders, where the Agency Information Flanders provides services to the Flemish Region and the Flemish Community. Specifically it is responsible for the provision of advice, the crossroads bank for data sharing, the operational implementation of e-services and the overall performance evaluation of e-government in Wallonia and the French Community (E-Wallonie-Bruxelles Simplification, n.d.-b, n.d.-a).

Even though the Department for Geomatics and e-Wallonie-Bruxelles Simplification are responsible for the horizontal policy coordination within the Walloon administration, there are a number of other departments and directions responsible for geospatial data within their specific, vertical policy domain. The most well-known example is the Directory of Geomatics within the Directorate General of Land Use and Urban Planning, which develops, in coordination with the abovementioned Department for Geomatics, policies and consultation tools for geospatial data (Walloon Directory-General of Land Use and Urban Planning, n.d.). Besides e-Wallonie-Bruxelles Simplification, there is a second actor responsible for the development and maintenance of the IT infrastructure of the Walloon Region: the Department of Information and Communication Technologies, which falls under the responsibility of the Directorate General for Budget, Logistics and Information and Communication Technologies. As such, there are four key actors involved in the development and maintenance of geospatial e-services (Walloon Administration, n.d.-c). Examples of geospatial e-services developed by those actors are *WalOnMap*, the Walloon geoportal, and the *Central Inventory of Addresses and Streets in Wallonia* (ICAR), the Walloon counterpart of the Flemish CRAB e-service (Walloon Administration, n.d.-b, n.d.-d). Another example is the *Ongoing Cartographic Information Project* (PICC): Just like in the Flemish Region, the Walloon Region also developed its own topographic map (Walloon Administration, n.d.-a).

4.3.2 Geospatial Data Users and Producers

Besides the legal formal organisational structures, there is also the practical reality of sharing data. Understanding a governance structure implies more than analysing the main organisations and their relations from a legal point of view. It is necessary to understand the

day-to-day exchange of geospatial data. Therefore, the second research question studies who the users (i.e. the organisations using a specific type of data) and producers (i.e. the organisations producing a specific type of data) of geospatial data are, and what the source of origin of their data is (i.e. from which organisation a specific type of data is received).[16] For 20 types of geospatial data – defined by the International Organization for Standardization in Standard 19115 (international standard to describe geospatial information and services) – the main users (those organisations that use the data at the moment of responding to the survey) and producers (those that produce the data at the moment of responding to the survey) were identified (International Organization for Standardization, n.d.). Those 20 types of geospatial data, defined by ISO Standards 19115, are described in Table 4.4.

The most commonly used type of data is *Location* with 74 users out of the 111 organisations that responded to the questionnaire. This is followed by *Planning Cadastre* used by 71 organisations and *Base Maps Earth Cover* used by 64 organisations. The types of data with the lowest number of user organisations are *Oceans*, only nine users, and *Intelligence Military* with only 13 users.

For half of the different types of data, the leading public organisations described above play a key role. At the federal level, the National Geographic Institute is one of the main actors concerning the more traditional types of geospatial data such as *Elevation*, *Base Maps Earth Cover*, *Earth Imagery*, *Inland Waters*, *Location* and *Structure*. The Federal Public Service Finance plays a key role for *Planning Cadastre*. From a Flemish regional perspective, the Agency Information Flanders overall has a strong position for sharing data with other organisations and is indicated for different categories as the main source or one of the main sources of origin. On the basis of the analysis of the leading public sector actors, it was expected that these actors would also play a key role in the network of users and data producers for the 20 types of geospatial data. The National Geographic Institute and the Federal Public Service Finance function as a producer and as one of the main sources of origin for different types of data. The Agency Information Flanders acts as one of the key distributors of geospatial data and to a minor extent also produces data. For the Walloon Region however the Department for Geomatics does not appear as one of the key actors in the network of users and producers of data. Rather, the vertical organisations, focusing on specific policy areas, of the Walloon administration appear to be both responsible for the production and exchange of the data. No centralised system for

[16] Related to users and producers, it has to be underlined that an organisation can be both a data producer and user. Also, an organisation can be a data producer (and user), transfer it to another organisation, whereby the second organisation functions as source of origin for other organisations. E.g. Inland Waters data is used by 41 organisations, 11 organisations are producing the data, and within the Flemish public administration context the Agency Information Flanders is the main source of origin, although it does not produce the data.

exchanging data exists in the Walloon administration. The Department for Geomatics is nevertheless expected to create the optimal conditions to use the geospatial data and to ensure the diffusion of Walloon geospatial data (Walloon Administration, n.d.-c). This is in strong contrast to the Flemish Region were the Agency Information Flanders plays a key role in the distribution of the majority of geospatial data.

Another remarkable observation is that in types of data such as *Climate Meteorology*, *Defence*, *Economy*, *Oceans* and *Transportation*, the organisations described above have almost no function in the network of users and producers. Other, more specialised organisations are pointed to as the source of origin for the data. *Climate Meteorology* data, for example, are mainly the area of the Royal Meteorological Institute. The Federal Public Service Economy and the Departments responsible for the Economy in the regions have a prominent role for the *Economy* type of data, and for *Defence* the Ministry of Defence is the source of origin.

Finally, there were three types of data for which not a single key actor could be identified: *Health*, *Society* and *Utilities Communication*. *Health* and *Society* are not always associated with geospatial data and there might not be enough focus on the key geospatial actors for this type of data. However, *Utilities communication*, for which both the Flemish and federal administration developed geospatial e-services, is very much related to location: the Federal Cable and Pipe Information Checkpoint (KLIM) and the Flemish Cable and Pipe Information Portal (KLIP) (Agency Information Flanders, n.d.-c; KLIM, n.d.). Both are geospatial e-services and inform users on the precise location of cables and pipes that can be found in the public subsoil in areas where they, as users, plan works. The federal e-service can be used by users planning engineering works in any area in Belgium, the Flemish e-service only in Flanders. It is surprising that the organisations developing these types of e-services are not taking a prominent role in the source of origin for this type of data.

Table 4.4 – Use–produce–origin description for 20 types of geospatial data

Type of Data	Description Use – Produce – Origin[17]
Location (positional information and services, e.g. addresses, geodetic networks, control points, postal zones and services, place names)	• 74 user organisations • 32 producing organisations • The data mainly originates from the National Geographic Institute, the Agency Information Flanders and private sector actors such as TomTom, Google Maps. The National Geographic Institute takes a central role at the federal level. The

[17] Users: The organisations using a specific type of data / Producers: The organisations producing a specific type of data / Source of origin: The organisation from whom a specific type of data is received. More detailed information can be found in footnote 15.

	Agency Information Flanders is a key source for organisations with a link to Flanders.
Planning Cadastre (information used for appropriate actions for future use of land, e.g. land use maps, zoning maps, cadastral surveys, land ownership)	• 71 user organisations • 15 producing organisations • The Federal Public Service Finance, responsible for Cadastral Information is the main source of origin: 48 organisations indicated that their information originates from the Federal Public Service Finance.
Base Maps Earth Cover (e.g. land cover, topographic maps)	• 64 user organisations • 14 producing organisations • The National Geographic Institute plays a dominant role as a provider of data, shared with the Agency Information Flanders. The Public Service of Wallonia is also indicated as a source for this data, but to a lower extent than National Geographic Institute and the Agency Information Flanders.
Environment (environmental resources, protection and conservation, e.g. pollution, waste storage and treatment, nature reserves)	• 56 user organisations • 24 producing organisations • A dominant role of the regions. Data mainly used by organisations with a link to the local level; the Agency Information Flanders has a prominent but no dominant role, together with the Walloon Directorate General for Agriculture, Natural Resources and the Environment.
Earth Imagery (Images of the Earth, e.g. satellite imagery, aerial photographs, LIDAR)	• 56 user organisations • 14 producing organisations • At the federal level, the National Geographic Institute is one of the main sources. The Agency Information Flanders dominates the other categories. No key organisation indicated within the Walloon administration. Google Maps is also mentioned but only seven times.
Boundaries (legal land descriptions, e.g. political and administrative boundaries)	• 55 user organisations • 8 producing organisations • The Agency Information Flanders is often cited as source of origin, while it uses information of the Federal Public Service Finance. National Geographic Institute, also cited as a source of data, produces the data themselves. Google Maps and TomTom data do not seem to be used on a regular basis: Only mentioned four times as source of origin.
Structure (man-made construction, e.g. buildings, museums, religious buildings, factories, housing, monuments, shops, towers)	• 51 user organisations • 19 producing organisations • The Agency Information Flanders has a strong impact of the diffusion of the data. Role of the National Geographic Institute is limited and related to the federal level.
Transportation (means and aids for conveying persons and/or goods, e.g. roads, airports, tunnels, nautical charts, vessel	• 48 user organisations • 21 producing organisations

location, aeronautical charts, railways)	• Only the federal railway company and the Flemish bus company are mentioned as source of origin
Economy (economic activities, conditions and employment, e.g. commerce, industry, tourism, exploitation of resources)	• 44 user organisations • 19 producing organisation • Less impact of the National Geographic Institute and/or the Agency Information Flanders. The Federal Public Service Economy, the Flemish Department of Innovation an Entrepreneurship and the Walloon Directorate General for Economy, Employment and Research have prominent roles.
Farming (rearing of animals and/or cultivation of plants, e.g. agriculture, plantations, livestock, etc.)	• 41 user organisations • 12 producing organisations • Dominant role of the regions. Main distributors are the Agency Information Flanders, receiving its data from the Department of Agriculture and Fisheries, and the Walloon Directorate General for Agriculture, Natural Resources and the Environment.
Elevation (height above or below sea level, e.g. altitude, bathymetry)	• 41 user organisations • 13 producing organisations • The Agency Information Flanders is in a key position: 17 organisations indicate that that their data originates from them.
Inland Waters (inland water features, drainage systems and their characteristics, e.g. rivers, water utilisation plans, dams, floods)	• 41 user organisations • 11 producing organisations • National Geographic Institute is the main source at the federal level. The Agency Information Flanders is highly consulted by other levels. A particular situation in Wallonia: three different Directorates General are mentioned as source of origin.
Society (characteristics of society and cultures, e.g. archaeology, education, demographic data, recreational areas and activities, crime and justice)	• 39 user organisations • 21 producing organisations • Clear sharing structure is missing: Not a single organisation emerges as a key source of origin.
Utilities Communication (energy, water and waste systems and communications infrastructure and services, e.g. solar and nuclear sources of energy, water distribution, sewage, electricity and gas distribution, telecommunication networks)	• 30 user organisations • 6 producing organisations • No central distributor for this type of data.
Biota (flora and/or fauna in the natural environment, e.g. wildlife, vegetation, habitat)	• 27 user organisations • 10 producing organisations • The Agency Information Flanders acts as distributor for data of the Flemish Agency of Nature and Forest, the Flemish Institute of Nature and Forest Research and the Flemish Department of

	Environment, Nature and Energy. Walloon organisations indicate that their data originates from the Directorate General for Agriculture, Natural Resources and the Environment.
Health (health, health services, human ecology, and safety, e.g. disease and illness, hygiene, health services)	• 27 user organisations • 9 producing organisations • Although the majority of the social security organisations of the federal administration participated, they do not appear as a user.
Geoscientific Information (information pertaining to earth sciences, e.g. geophysics, geology, earthquakes)	• 25 user organisations • 11 producing organisations • The Agency Information Flanders is mentioned five times as source of origin, the Public Service of Wallonia is indicated by three organisations as their source of data.
Climatology/Meteorology (processes and phenomena of the atmosphere, e.g. weather, climate, atmospheric conditions)	• 24 user organisations • 7 producing organisations • Dominant role of the Royal Meteorological Institute.
Military Intelligence (military bases, structures, activities, e.g. military buildings and transportation)	• 13 user organisations • 5 producing organisations • Always linked to the Ministry of Defence.
Oceans (features and characteristics of saltwater bodies, e.g. tides, coastal information, reefs)	• 9 user organisations • 3 producing organisations • Only type of data for which organisations indicated that they use non-Belgian sources such as European Commission, European Space Agency and NASA. Flemish organisations use their own data.

Source: Chantillon, Simonofski, et al. (2017)

4.3.3 Coordination in the Field of Geospatial E-Services

The section addresses the third research question: What types of coordination mechanisms are used in the field of geospatial data and e-services? The three regions and the federal administration all have their own means of coordination in the field of geospatial data and e-services, whereas the intergovernmental coordination between the four actors appears to be organised via a weak form of network governance. The INSPIRE Directive has been an active driver of cooperation and increased coordination in the field of geospatial e-services.

4.3.3.1 Federal Administration

In 2010 the three regions and the federal government reached an agreement on the coordination of the infrastructure for geospatial information (*Samenwerkingsakkoord van 2 April 2010 Voor*

de Coördinatie van Een Infrastructuur Voor Ruimtelijke Informatie, 2010). As a result of the INSPIRE Directive the four actors were obliged to agree on the overall implementation of this Directive. Although the agreement was reached in April 2010, it was only in December 2011 that the directive was transposed into federal law. The interviews with different actors of the federal administration learned that before the transposition of the INSPIRE Directive no strongly formalised structures existed for exchanging data or setting up geospatial e-services. Geospatial data are very often exchanged in an ad hoc way between organisations, sometimes even without official agreement of the senior level of the administration, as this is too time-consuming. Also, although the role of the National Geographic Institute and the Federal Public Service Finance might be clear, it is difficult for other organisations to see the added value of geospatial data and e-services. Furthermore, there is still no official exchange mechanism for geospatial data. Although FEDICT could have acted as a data exchanger for geospatial data, this has never been the case (FPS BOSA, n.d.). Moreover, FEDICT has over the years only developed a few e-services, which include – to a minor extent – geospatial data. This is probably the result of a combination of different factors: At the time that FEDICT was founded, in 2001, the majority of the federal institutions already had their own internal information and communication technologies department and continued to use their own service for developing e-services – e.g., the Federal Public Service Finance or the National Geographic Institute. Furthermore, the budget of FEDICT has decreased systematically as a result of the austerity measures of the federal government. Finally, SMALS, a private sector company owned by the federal social security actors, had already developed and maintained e-services for other – mainly social security related – organisations at the federal level. FEDICT was as such the extra actor that came into the field, and never had sufficient capacity to play the role that it was expected to play.

Therefore, it can be argued that before the INSPIRE Directive was transposed into law in 2011, there was no real governance of geospatial e-services: Each federal organisation was acting on its own, without taking a common vision or strategy into account. There was insufficient leadership in the field of e-services, and a total lack of it in the field of geospatial data. The INSPIRE Directive, however, forced the federal organisations to start cooperation in this area. The National Geographic Institute was legally instructed to create a network of services related to the geospatial data referred to in the Annexes of the INSPIRE Directive, and to set-up a federal geoportal. Whereas cooperation was lacking before the implementation of the INSPIRE Directive, some form of a network was created as a result of the Directive. Hierarchical governance was used to promote a network approach for geospatial data, but it remains to be

seen what the impact of the newly created the Federal Public Service Policy and Support will be on the overall coordination.

4.3.3.2 Brussels Capital Region

The Brussels Regional Informatics Centre already had from 1987 the legal mandate to develop services and to provide assistance to other actors in the Brussels Capital Region concerning topics of informatics, telematics and cartography. When, at the end of the 20th century, the Brussels Regional Informatics Centre had the opportunity to buy the legal rights for the geospatial data belonging, until then, to the local authorities of the Brussels Capital Region, it consolidated and strengthened its legal – and hierarchical – position for developing geospatial e-services. The Brussels Regional Informatics Centre took this opportunity, and started to develop the UrbIS products. These digital cartographic products are available for all governmental organisations of the Brussels Capital Region, citizens and private sector actors (BRIC, n.d., 2015). The products can be used by governmental organisations as a basis tool for the development of their geospatial e-services. Although governmental organisations started to use these UrbIS products, which created a certain level of coordination, it remained a weak form of cooperation that did not lead to an optimal functioning of geospatial e-services.

When in 2010 the GeoBru Committee was created via the transposition of the INSPIRE Directive, there was not much formalised cooperation between the different organisations of the Brussels Capital Region. The only form of coordination, besides informal and personal contacts between organisations, was semi-official events that aimed to bring together the different actors involved in geospatial e-services: It remained, however, rather informal and informative (Dumortier, 2017). Since the creation of the GeoBru Committee in 2010, however, which was imposed hierarchically, coordination between governmental organisations has improved and it is also expected that cooperation goes beyond just implementing the INSPIRE Directive. However, there are complaints from the communities about the strong hierarchical and dominant position that is taken by the Brussels Regional Informatics Centre towards them. New e-services are developed without taking the needs of the local authorities into account. This situation is also accentuated by the fact that UrbIS and its products have been legally consolidated as the digital cartographic reference databank (*Ordonnatie Betreffende de Oprichting En Organisatie van Een Gewestelijke Dienstenintegrator*, 2014).

It can therefore be argued that the Brussels Capital Region is characterised by a strong hierarchical dominance of the Brussels Regional Informatics Centre – which is, according to the Brussels Regional Informatics Centre, creating the necessary unity between the different

governmental actors. This is however combined with a certain level of network governance in which the different actors of the Brussels Capital Region can have their influence via the official GeoBru Comité.

4.3.3.3 Flemish Region

The governance of geospatial data and e-services of the Flemish Region appears to be characterised by a mixture of hierarchy and network governance. The subsequent Flemish governments and the administration, the Agency Information Flanders and its predecessors, have worked in an active way on a set of legally binding instruments that created the overall framework for geospatial data sharing and e-services. There are multiple examples of this policy. In 2000 the Flemish Parliament agreed on the proposed GRB (Large-scale Reference File) Decree (*Decreet Betreffende Het Centraal Referentieadressenbestand*, 2009), and later also on the KLIP (Cable and Pipe Information Platform) Decree (2008) (Agency Information Flanders, n.d.-c), the GDI (Geographic Data Infrastructure) Decree (2009) (*Decreet Betreffende de Geografische Data-Infrastructuur Vlaanderen*, 2009), the CRAB (Central Address Reference File) Decree (2009) (*Decreet Betreffende Het Centraal Referentieadressenbestand*, 2009) and the GIPOD (Generic Information Platform Public Domain) Decree (2014) (*Decreet Houdende de Uitwisseling van Informatie over Een Inname van Het Openbaar Domein in Het Vlaamse Gewest*, 2014). This legalisation does not only have an effect on the Flemish administration, but especially on the Flemish communities, who fall under the responsibility of the region. The Flemish administration aims, via these legally binding decrees, to ensure a high level of standardisation. The communities underline that the hierarchical focus of the Flemish administration, with its standards, supervision and inspection, is strong and often does not sufficiently involve the communities. They do, however, recognise that geospatial data and e-service require a high level of standardisation and as such might require certain hierarchical governance structures.

There is, however, a certain level of network governance present in the Flemish management of geospatial e-services. Although the Agency Information Flanders and its predecessors were and are responsible for the development of (geospatial) e-government and accompanying e-services, they still had and have to obtain and maintain the necessary confidence and trust of the other organisations of the Flemish regional administration. Without the support of the other organisations the Agency Information Flanders would not be able to position itself in the way it currently does. One of the respondents underlined in this respect that the Agency Information Flanders and its predecessors have a strong and trustable reputation. This created an advantage

in comparison to the organisations of the federal administration. Those federal organisations have a long history, interspersed with procedures and processes that are not well suited to the digital world. Furthermore, the Flemish Region has, since the start of its geospatial data infrastructure (GDI) in 2000, created a number of councils that allowed public entities to actively participate in the creation of the Flemish Geospatial Data Infrastructure. The Steering Group GDI Flanders, the GDI Council and the Working Group GDI Flanders, created for the implementation of the GDI Flanders, all three provide a forum for all stakeholders to communicate their geospatial requirements (Agency Information Flanders, n.d.-d).

4.3.3.4 Walloon Region

Similar to the federal administration, the transposition of the INSPIRE Directive appears to have been a driver of reform in the Walloon administration: After the agreement between the three regions and the federal government had been reached in April 2010, the INSPIRE Directive was only transposed into a decree, the so-called Geospatial Information Infrastructure Decree, in December 2010 (*Décret Relative à l'infrastructure d'information Géographique*, 2010). With the transposition a framework for coordination was created in the Walloon Region. A Strategic Committee for Geomatics was founded, to be chaired by the Department for Geomatics. The Committee is responsible for the overall coordination of the different actors in Wallonia related to geospatial data and e-services, for the development of the Walloon geospatial information infrastructure and for drafting the Strategic Geomatics Plan. The Committee groups all the Directorates General of the Walloon administration, as well as the Walloon local level, the regional crisis centre and the regional service providers. However, today there is still a lack of a harmonised view among the different actors of the Walloon administration. This might for example explain why it took the Walloon administration four years to draft a Strategic Geomatics Plan. An external consultant had to be called in because there was, apart from the lack of sufficient capacity, a lack of common understanding on what should be the priorities. The Strategic Geomatics Plan 2017–2019 is an exact copy of the previous plan, and it is only now that the Walloon administration is starting with the implementation of the first plan. Therefore the Committee has developed an Operational Geomatics Plan: It aims to bring more coherence into the geospatial data and e-services of the Walloon administration. The Operational Geomatics Plan shows a certain level of unity among the different partners of the Committee (Walloon Administration, n.d.-e). Overall, the Walloon administration seems to be characterised by a certain level of network governance that appeared after the transposition of the INSPIRE Directive.

4.3.3.5 The Belgian Governance: Cooperation between Three Regional Administrations and the Federal Administration

As a result of the strong autonomy of the regions, the four public administrations have concluded a number of agreements that are legally binding. With these agreements the regions and the federal level aimed to establish a common basis for the future cooperation and development on the topics of e-government, geospatial data and e-services. The agreements were necessary as they are part of the legal backbone for the future development of geospatial e-services (Departement Information Flanders, 2015). The agreements show that there is a certain willingness of the four actors to cooperate via a weak form of network governance.

Concerning e-government, there have been agreements in 2001 and 2006. Both expired, however. When the 2006 agreement expired, it took the four actors three years to define a new one. This is illustrative of the relationship between them. All three agreements led to the establishment of a Strategic Committee in which the four actors are represented (*Samenwerkingsakkoord voor het harmoniseren en uitlijnen van de initiatieven die de realisatie van een geïntegreerd e-government beogen*, 2013). The added value of those agreements is, however, unclear: There are no visible public results and there is almost no information on what the Strategic Committee does. One of the technical working groups, the Technical Working group on interoperability, has met for the last time in October 2016.[18] From the reports it can be ascertained that the meetings are rather informal. These rather poor results are not surprising and seem to be the result of the lack of a common vision and strategy on e-government (BELGIF, n.d.; De Bot, 2015).

Concerning geospatial data, three important agreements have been concluded. The first was the Agreement for the Coordination of the Infrastructure for Geospatial Information (*Samenwerkingsakkoord van 2 April 2010 Voor de Coördinatie van Een Infrastructuur Voor Ruimtelijke Informatie*, 2010). This agreement, which is a partial transposition of the INSPIRE Directive, aims to ensure the cooperation of the three regional administrations and the federal administration. One of the main points of the agreement was the creation of the Coordination Committee: Representatives of the four actors are members and it ensures the overall coordination of the INSPIRE implementation in Belgium. However this Committee is mainly an information-sharing platform. Nevertheless, the Committee occupies a unique position in the field of geospatial data: For the first time the three regions and the federal administration are

[18] Note that the original article was written in the period May – July 2017. At the end of 2018 the activities of the Technical Working group on interoperability were restarted.

communicating with each other in a formal way. This is an important achievement as it has led to a weak form of network governance. However, due to the fact that the Committee does not have individual staff or budget, its influence is rather weak.

The second agreement, focusing on the coordination structure for patrimonial information was concluded in 2014. This agreement aims to ensure a coordinated exchange and update of patrimonial information. This agreement is the direct result of a political recognition that cooperation is necessary (*Samenwerkingsakkoord met betrekking tot de coördinatiestructuur voor patrimoniuminformatie*, 2014; FEDWEB, n.d.). A new and common organisation was created between the regions and the federal level that is responsible for improving the coordination. Although it took until 2017 before it became publicly visible it is expected to deliver concrete results. The three regions and the federal administration recognise the need for a common and properly functioning patrimonial documentation. Data will be exchanged free of charge among the governmental users, and external non-governmental users are offered a single digital point of contact (SCIP-CSPI, 2017). So for this area of geospatial information an institutionalised form of network coordination has emerged, via an agreement between the regions and the federal level. It remains to be seen what the effect of the new organisation will be on overall cooperation.

Finally, an agreement has been reached on the topic of address data. As it is a pre-condition for well-functioning geospatial e-services to have a common address structure, the three regions have been working on a common address structure since the beginning of the 21st century. Although there are agreements on the meaning of an address from a judicial point of view, the regions still have different ways of approaching those agreements and implementing them. In this agreement the three regions agreed on an organisational structure to solve the common problems with addresses. Although a common structure was created in the form of an Address Committee – which has to report on a regular basis to the National INSPIRE Committee and the Strategic Committee on e-government – there is no agreement on the common problems. This was, however, to be expected: All that happened with this agreement is the formalisation of an informal negotiation structure, and the organisation responsible for facilitating the work, FEDICT, did not have a sufficient budget to work on the topic (*Samenwerkingsakkoord met betrekking tot de eenmaking van de wijze waarop ferefereerd wordt aan adressen en de koppeling van adresgegevens*, 2016).

These agreements and the related coordination show that there exists only a weak form of cooperation between the four actors. Each actor has its own working procedures. The Flemish Region started to develop its geospatial data and e-services governance structure much earlier

than the other regions or the federal level, and took a different and more hierarchical approach. The Brussels Capital Region also has a long history of making the connection between geospatial data and information technology via the Brussels Regional Informatics Centre. The Brussels Region is characterised by a strong hierarchy, which was influenced to a high extent by the transposition of the INSPIRE Directive and the creation of a stronger network governance with the GeoBru Committee. The Walloon and the federal administrations, however, have struggled much longer with putting in place a governance structure for geospatial data and e-services: The Walloon Region has seemed to embark, although slowly, in the direction of network governance, whereas the federal administration still appears to have difficulties in making the connection between geospatial data and e-services – even after the transposition of the INSPIRE Directive.

4.4 Discussion

The fourth research question seeks to explain the current governance structures. From an intergovernmental perspective, a clear governance model is lacking. Also, the individual actors appear to struggle with developing such a governance model, whereby the Brussels Capital Region and the Flemish Region are the only two actors with a clear view on their governance of geospatial data and e-services. The Walloon Region has slowly started to develop a vision, but the federal administration has major difficulties with developing any sort of governance, as a result of which the crucial link between e-government and geospatial data seems to be lacking. This lack of an intergovernmental governance structure can be explained by taking a broader perspective: As various respondents said, there is a problem of awareness and information sharing. Organisations, and especially the people working in the organisations, do not know each other and do not know what the other is doing.

Furthermore, the three regions only work together when they see a clear need. As the regions have a clearly determined geospatial area for which they are responsible, they seem to be convinced of the fact that they can function on their own. This is highly problematic, as especially the federal level needs data of the regions and delivers data to the regions. In some cases cooperation is necessary: Patrimonial information and address data are clear examples of this. The regions and the federal administration recognise the importance in the form of the so-called Cooperation Agreements. The impact of these agreements has, however, been limited.

Another point, especially important for the federal administration, is the lack of political support for geospatial e-services, leading to a lack of vision and strategy. Recently the e-

government organisational structure has been reformed, but it remains to be seen what the effect will be. One of the respondents was rather sceptical of the new structure, as the administration responsible for the e-government strategy is hidden within the Federal Public Service Policy & Support, and considered it more a budgetary operation.

Finally, the federal administration and the regions (Flanders to a lesser extent) seem to be characterised by a strong organisational independence, leading to informal cooperation based on personal connections. An extra factor in the federal administration is the historical independence of the main organisations, which makes coordination more difficult. In the survey respondents were asked whether, in the future, they were willing to collaborate more actively, both within the same governmental level and across different governmental levels. A scale ranging from 'strongly disagree' to 'strongly agree' was used. The results were, in light of the above, rather surprising as they show that there is a willingness to engage in future collaboration, both at the federal and regional level. Concerning collaboration within the same governmental level (Table 4.5), there was a large majority that supported future collaboration: 45 out of 67 federal respondents agreed or strongly agreed. For the regional respondents the majority was slightly higher, with 48 out of 66 regional respondent agreeing or strongly agreeing. A possible explanation for this differentiation is the respondent: The survey was answered by individuals working for their organisation, whereby the statements focused on the individual preference. Furthermore, the respondents were not asked to take into account possible other barriers to this collaboration. Indeed, those possible other barriers can more easily be referred to and mentioned during interviews. It is also not expected that the answers are the result of a social desirability bias, whereby more active collaboration is considered to be the 'right' answer: The survey was fully anonymous and there was no need/expectation for a specific answer to be provided.

Table 4.5 – Willingness to engage in more active future collaboration within the same governmental

	Federal (Absolute Numbers – Total N: 67)	Federal (%)	Regional (Absolute Numbers – Total N: 66)	Regional (%)
Strongly disagree	0	0%	1	1.5%
Disagree	0	0%	0	0.0%
No agreement or disagreement	16	23.9%	11	16.7%
Agree	26	38.8%	28	42.4%
Strongly agree	19	28.4%	20	30.3%
No answer	6	9.0%	6	9.1%

Source: Chantillon, Simonofski, et al. (2017)

Concerning future collaboration across different governmental levels (Table 4.6), a similar picture appeared. Both for the federal respondents and the regional respondents, the number of respondents who agreed and strongly agreed was high: 47 out of 67, and 48 out of 66 respondents, respectively. The regional level in Table 4.6 includes the three regions. Looking at the Flemish and Walloon Region in detail, however (the number of respondents from the Brussels Capital Region was only six, so this information is not useful for individual calculations at the regional level), shows that the respondents from the Walloon Region had a lower level of agreement than their Flemish counterparts. The number of respondents from the Flemish Region who agreed or strongly agreed was 21 out of 25 (84%); for the respondents from the Walloon Region that number was only 24 out of 36 (67%).

Table 4.6 – Willingness to engage in more active future collaboration across different governmental

	Federal (Absolute Numbers – Total N: 67)	Federal (%)	Regional (Absolute Numbers – Total N: 66)	Regional (%)
Strongly disagree	1	1.5%	1	1.5%
Disagree	1	1.5%	1	1.5%
No agreement or disagreement	15	22.4%	11	16,7%
Agree	27	40.3%	28	42.4%
Strongly agree	20	29.9%	20	30.3%
No answer	3	4.5%	5	7.6%

Source: Chantillon, Simonofski, et al. (2017)

4.5 Conclusions

This chapter attempted to uncover what governance, and specifically what type of coordination, is used in the sector of geospatial data and e-services in Belgium. The importance of studying and unravelling the governance, and in particular the coordination among organisations, lies – firstly – in the fact that the governance provides the wider context in which a public administration offers services to its users. Understanding this governance allows as such to better understand how services are developed and offered to users. Secondly, the coordination and coordination instruments used between organisations allow the public sector organisations also to directly provide services to users, and provide as such the scope for the digital transformation (Affisco & Soliman, 2006; Latre et al., 2013). For example, the organisation of data flows between organisations of the same or different public administrations, will to a great extent impact what kind of service(s) can be offered to users. Therefore, this chapter is of crucial importance, and it helps to understand what type of governance, and specifically what coordination exists among the different public administration organisations in Belgium when it comes to geospatial data and services.

This research was executed by making use of the theoretical coordination model (hierarchy, market and network) of Bouckaert et al. (2010). It was used to analyse the current governance situation, with a focus on the three regional administrations and the federal administration. Intergovernmental coordination was also analysed. The transposition of the INSPIRE Directive had a strong effect on the governance model of the administrations in the Walloon Region, the Brussels Capital Region and at the federal level. The Flemish Region is an exception as a clear governance model had already existed since the start of the 21st century, and can be labelled as a mixture of hierarchical and network governance. The Brussels Capital Region administration, and especially the Brussels Regional Informatics Centre, is characterised for its hierarchical working methods, although INSPIRE also led to the creation of network governance via the GeoBru Committee. In the Walloon administration cooperation has slowly started to develop and progress towards the development and implementation of a common strategy has been made. A form of network governance can be observed. Although the federal administration was influenced by the INSPIRE Directive, it is still struggling with the strong separation between geospatial data and e-services. From an intergovernmental perspective, a clear governance model between these four actors is lacking. Agreements between the regions and the federal level have been concluded, but the only effective agreement seems to be the one on patrimonial

information. The other agreements and related structures have resulted mainly in information-sharing groups.

Geospatial data are nevertheless exchanged between organisations within administrations and also between organisations of different administrations. The National Geographic Institute and the Federal Public Service Finance play a key role in the more traditional types of geospatial data, whereas the Agency Information Flanders takes a central position in sharing and exchanging almost all types of data between organisations. In the Walloon administration, however, there is no organisation that takes such a central position: Data exchange is much less centralised. The INSPIRE Directive had a strong effect, as the transposition has led to the obligation to create geoportals. The transition to the development of geospatial e-services across different organisations, however, is still partially lacking at the federal and Walloon level, as the governance models of the Walloon Region and the federal administrations are still immature. The administrations of the Brussels Capital Region and the Flemish Region have well-developed governance structures, however, and are thus able to develop and maintain well-functioning geospatial e-services.

The intergovernmental situation can be explained by the fact that there is a problem of awareness about what the other administrations and organisations within those administrations are doing. Furthermore, the three regions only work together when they see a clear need for this: There is a strong notion among the regions that they can function separately, without coordinating their policies. Particularly important at the federal level is the lack of political support for geospatial e-services and data, as it has led to a lack of vision and strategy. Finally, the federal administration seems to be characterised by strong organisational independence.

While this chapter is a first attempt at understanding the governance structures for geospatial data and e-services in Belgium, more research is nevertheless required concerning the specificities of the different Belgian regions and the federal administration in developing geospatial e-services.

Although Belgium was selected as a case study because of its complex federal structure, the authors believe that the research methodology could be useful for analysing the governance structure of geospatial e-services and data in other countries. This would allow for a comparison between countries. There are various possible case studies, three of which are presented hereafter. The first possibility is Spain. Being “one of the most decentralised countries in Europe”, it has redistributed the administrative and political power among the central government and the autonomous authorities (Gobierno de Espana, n.d.). Although two main

differences with regard to Belgium can immediately be identified – Spain has more autonomous authorities than Belgium; and the competences assigned to the Belgian regions are equal, while this is not the case in Spain – it could be useful to undertake a similar analysis of the Spanish system by making use of the methodology applied in this paper. This would be particularly relevant since a recently published United Nations study on good practices of geospatial governance shows that the Spanish National Geographic Institute developed partnerships with organisations within the same administration, as well as with autonomous authorities for the establishment of a National Plan for Land Observation (United Nations Committee of Experts on Global Geospatial Information Management, n.d.).

Germany might also be an interesting case to study. It is a federal state, with a federal administration, autonomous regions – the Länder – and communities. From an e-government perspective, Germany seems to have difficulties in providing e-services to its users, as one of the main challenges is the mismatch between administrations. E-service initiatives are taken by the federal administration, whereas users often tend to use services at local level (Expertenkommission Forschung und Innovation, n.d.; Naveed Baqir & Iyer, 2010). From a geospatial perspective, however, there seems to be cooperation that is stimulated by the INSPIRE Directive. The federal administration, the autonomous regions and the associations of communities are working together on the Geospatial Data Infrastructure Germany (Geodateninfrastruktur Deutschland, n.d.).

Finally, the authors believe that not only federal or decentralised countries could be studied with this methodology. Cooperation can also be difficult in more centralised states, as organisations within the same administration have direct hierarchical power over various actors at lower levels. This, however, requires coordination among both the hierarchically equal organisations at the higher level and between the organisations on the lower administrative levels (Bouckaert et al., 2010). The French governance of geospatial e-services and data might in this respect be a useful case study. It is also influenced by EU legislation, such as the INSPIRE Directive, and different lessons might be learned from a governance perspective.

The countries described above are only examples that aim to show that the methodology applied for this paper might also be relevant for studying other countries. Not only federalised and decentralised countries face coordination difficulties; centralised countries are also confronted with similar challenges. Further research is therefore required to help improve knowledge about different governance structures – which is not only useful for academic purposes but also for policy makers.

Chapter 5 Analysing e-government through the Multi-Level Governance lens: An exploratory study in Belgium

Note

This Chapter is an extended version of the following double blind peer reviewed Conference Proceeding:

Chantillon, M., Simonosfki, A., Tombal, T., Kruk, R., Crompvoets, J., & Snoeck, M. (2020). Analysing e-government through the multi-level governance lens - An exploratory study in Belgium. In S. Virkar, M. Janssen, I. Lindgren, U. Melin, F. Mureddu, P. Parycek, E. Tambouris, G. Schwabe, & H. J. Scholl (Eds.), *CEUR Workshop Proceedings* (Vol. 2797, pp. 175–183).

5.1 Introduction

Today's governments need to take the requirements of other actors in society into account. Not only citizens and businesses (Janssen & Estevez, 2013; Pollitt & Bouckaert, 2011; Simonofski, Vanderose, et al., 2017), but also other administrations have an important effect of the functioning and policies pursued by an administration (Stephenson, 2013). Administrations no longer function independently but are impacted by actions and decisions of other administrations. This phenomenon has to be taken into account, as it affects the internal relations in an administration and the service delivery to citizens and businesses. However, what appears to be partially missing in the e-government literature is a theoretical approach to analyse e-government from a wider administrative perspective, which takes the interplay between different administrations into account. Administrations are no longer self-standing bodies, but actors influenced by each other, and by the EU Institutions in particular – at least in the EU. This "system of continuous negotiation among nested governments at several territorial tiers" is referred to as multi-level governance (Fairbrass & Jordan, 2004; Marks, 1993; Stephenson, 2013, p. 820). This paper therefore aims to answer the following research question (see Chapter 1. Introduction): **What is the impact of multi-level governance on the e-government policies of a public administration?**

We investigate the impact of multi-level governance on the e-government policies of a national administration, and especially the complexity in relation to other administrations, via a double case study of the Inter-organisational Information Sharing policy and the Open Data policy[19]. The Inter-organisational Information Sharing and Open Data policies are analysed as those policies constitute the backbone of current e-government developments – especially in the European Union. The focus lies on e-government as a stand-alone policy area, and not on e-government actions taken in other policy areas, such as education policy, taxation policy or foreign policy. We hypothesise that multi-level governance is of high importance to understand the e-government policies of a public administration.

The structure of this chapter is as follows. The Theoretical section presents the concepts of e-government and e-government policies, as well as multi-level governance and connects them. Furthermore, the research gaps that this study aims to fill are outlined. The Methodology

[19] The research for this Chapter was executed in the period July 2016 – November 2019. In June 2019 the Council of Ministers and the European Parliament approved the Directive on open data and the re-use of public sector information (EU 2019/1024). The Directive is the successor of the 2013 Directive amending Directive 2003/98/EC on the re-use of public sector information (2013/37/EU). The Directive has to be implemented by EU Member States by 16 July 2021 (European Commission, 2021). This research has therefore not taken into account this new Directive and its implementation by EU Member States.

section explains the single case study research. The Results section is dedicated to the analysis of Inter-organisational Information Sharing policy and the Open Data policy. The Discussion section makes a link to the concept of Europeanisation (Olsen, 2002). Finally, a Conclusion follows and summarizes the contributions of this paper.

5.2 Theoretical Section

In order to understand if and how the multi-level governance concept impacts the e-government policy of national administrations, it is first necessary to discuss the concepts of e-government and e-government policies as well as the concepts of multi-level governance, Inter-organisational Information Sharing and Open Data.

5.2.1 E-government and e-government policies

According to the literature (Gil-García & Pardo, 2005; Sang et al., 2005; West, 2004), e-government can be defined as 'the use of information and communication technologies to improve the delivery of information and services internally and to stakeholders (citizens, businesses and other administrations)'. Although time has passed since this definition was created, it remains highly suitable for two reasons. Firstly, it captures the core of e-government and shows that e-government is not a goal in itself, but rather a mechanism or process to achieve something else. Indeed, the improved delivery of information and services to others, both in and outside the public administration, in order to create public value, is the goal, while information and communication technologies are the tool. Secondly, the definition stands the influence of time, as there is no specification of what type of technologies are used by the public administration. Over the years, technologies have changed substantially, but this does not affect this definition. What is clear from this definition is the fact that e-government remains stable, despite changes in the technology. Changes in what is delivered to others are therefore to be expected. An e-government policy can, on the basis of the above, be defined as a policy approach on the use of information and communication technologies to improve the delivery of information and services internally and to stakeholders (citizens, businesses and other administrations).

Since the end of the 1990s, different administrative levels systematically started to develop e-government policies. From the beginning, it was clear that supranational actors were going to play a role in this regard. Examples are the 1995 EU Directive on the processing of personal data or the 1997 EU Ministerial Declaration on Global Information Networks (*Directive 95/46 of the*

European Parliament and of the Council of 24 October 1995 on the Protection of Individuals with Regard to the Processing of Personal Data and on the Free Movement of Such Data, 1995; Ministers from the Member States of the European Union et al., 1997). From the beginning of the e-government policies, national administrations have not been the only actors active in defining and developing those policies.

5.2.2 Multi-level Governance

In 1993, Gary Marks defined multi-level governance as "a system of continuous negotiation among nested governments at several territorial tiers – supranational, national, regional and local – as the result of a broad process of institutional creation and decisional reallocation that had pulled some previously centralised functions of the state up and down" (Fairbrass & Jordan, 2004; Marks, 1993; Stephenson, 2013, p. 820). It is necessary to underline that the sovereignty of the state is not directly challenged. Indeed, "[i]nstead of being explicitly challenged, states [...] are being melded into a multi-level policy by their leaders and the actions of numerous subnational and supranational actors" (Gualini, 2003, p. 619; Hooghe & Marks, 2001). It leads to a situation where "[t]he nature of the state [...] is redefined according to the institutional compromises that contently result from such interactions" (Gualini, 2003, p. 619). Originally, Hooghe & Marks (2003) only developed one type of multi-level governance, the so-called Type I multi-level governance, which has its foundation in federalism. The main difference with federalism lies in the nation-state focus: There is a central government and a number of sub-national governments. Type I multi-level governance adds another layer, namely a supra-national actor. Central governments are challenged both from within and without the nation state, by supranational, regional and local state actors. This thus refers to the 'multi-level' aspect of the concept: There is a movement from centralised national authority towards multiple centres of authority (Marks et al., 1996; Stephenson, 2013). A decade after the ground breaking work of Marks (1993), Hooghe & Marks (2003) argued that another type of multi-level governance exists, the so-called Type II multi-level governance. This type is much more volatile. The boundaries between the actors – both state and non-state actors – are overlapping and there is a high level of flexibility regarding the actors involved, as well as the tasks executed by these actors (L. Hooghe & Marks, 2003).

This chapter aims to understand the impact of multi-level governance on the e-government policies of public administration. Bache & Flinders (2004) defined a number of criteria that can be used to test if a central government is indeed being impacted, i.e. being affected, by multi-level governance. Those criteria are used in this work to assess the impact of multi-level

governance on the e-government policy of the Belgian federal administration. The four criteria can be found in Table 5.1. When analysing the criteria on the basis of the Type I and Type II multi-level governance differentiation made by L. Hooghe & Marks (2003), it becomes clear that the first two criteria are linked to Type I multi-level governance, the fourth criterium to Type II MLG and the third criterium to both Types of multi-level governance.

Table 5.1 – Multi-level Governance Criteria

1	The identification of discrete or nested territorial levels of decision making is becoming more difficult in the context of complex overlapping networks.
2	The role of the state is being transformed as state actors develop new strategies of coordination, steering and networking to protect and, in some cases, enhance state autonomy.
3	The nature of democratic accountability has been challenged and need to be rethought or at least reviewed.
4	Decision-making at various territorial levels is characterised by the increased participation of non-state actors.

Source: Bache & Flinders (2004a, p. 197)

It has to be recognised that multi-level governance has also been criticised, especially for its lack of explanatory value. This appears to be correct. Multi-level governance has been criticised for not being able to offer causality (Fairbrass & Jordan, 2004), but, as Stephenson (2013) argues this is incorrect: The concept of multi-level governance can provide – although it has to be taken into account that also other factors can have an impact on a certain policy domain – an explanation on why a policy domain evolved in a certain way. Indeed, multi-level governance can have an impact on a policy domain, and can be used to understand this impact (Fairbrass & Jordan, 2004; Stephenson, 2013). That is, however, fully in line with the approach taken in this work, which aims to understand the impact of multi-level governance on the e-government policies of public administrations. Via this research perspective, we aim to deepen the understanding of the complexity of the field and point to the need to take a broader perspective when analysing and developing e-government policies. As said, we argue that e-government policies are not just driven by one administration, but include a wide array of both governmental and non-governmental actors. In this regard, the criticisms towards multi-level governance are not problematic for this chapter.

Whereas the original multi-level governance concept has initially only been used to analyse EU political integration processes, and was only developed in the context of EU cohesion policy, its use has been widened to analyse various policy fields that could benefit from an understanding based on the multi-level governance concept. Examples include cohesion policy (Piattoni, 2010),

environmental policy (Paavola, 2016), health policy (Kuhlmann & Larsen, 2015) and higher education policy (Piattoni, 2010). Furthermore, the concept has also served as building block for the analysis of other concepts, such as disaster management by public administrations (Frey & Calderón Ramírez, 2018).

5.2.3 Connecting e-government policies with multi-level governance

Analysing the impact of multi-level governance on e-government policies is relevant for two reasons. First, we found that e-government research focuses strongly on explaining e-government developments, by making use of theoretical models (Meijer & Bekkers, 2015). This is highly relevant and useful, and in line with our work. However, we add a theoretical approach that is less known in the Public Administration or Information Systems e-government literature, and which is derived from Political Science literature. Via the re-use of concepts, we aim to cross-fertilise the three study domains and aim for a conceptual enrichment.

Secondly, there has, to our knowledge, been no analysis of e-government policies making use of multi-level governance, while the daily practice of e-government policies clearly points to the existence of certain elements that can be related to it. The e-government developments in one administration are likely influenced by actions taken within different administrations, ranging from the supranational to the subnational level.[20] So far, the e-government literature has not approached its study object from this multi-level governance context. Therefore, it seems appropriate to analyse several developments within the e-government policies, and to make an exploratory connection to multi-level governance.

5.2.4 Inter-organisational Information Sharing and Open Data

On the basis of a content analysis of the Ministerial Policy Notes of the Belgian federal e-government policy of the last five year, two sub-policy areas were selected and are discussed in-depth, i.e. Inter-organisational Information Sharing and Open Data (De Croo, 2014, 2015, 2016, 2017, 2018). Indeed, it appears from these policy notes that the two topics are the main concerns and working areas of the Belgian federal administration for several years. Furthermore, both topics continue to attract strong interest from both academics and practitioners, thereby making a crucial connection to ongoing technological developments – such as big data, artificial intelligence and block chain – and leading to critical questions on ethical behaviour and impact

[20] Although the direct impact of the local level on the e-government policy of other levels will most likely be limited, it certainly has an indirect impact on the e-government policy conducted by the higher levels. An example are the online cadastral mapping systems. The local level has, for efficiency reasons, a preference for a single system that leads to the need for higher level administrations to coordinate their activities.

on society and individuals (Eriksson & Goldkuhl, 2013; Organisation for Economic Development and Cooperation, 2019; Ubaldi, 2013).

The first policy area to be analysed is Inter-organisational Information Sharing. For many years, the sharing of information has been one of the main working areas of various public administrations. Indeed, Inter-organisational Information Sharing is regarded as an essential element of an e-government policy. Allen, Karanasios, & Norman (2014) argue in this respect that the attention of the academic community for the topic has been rather limited, whereas the public administrations in contrast devoted more attention to it. Scholl, Kubicek, Cimander, & Klischewski (2012) underline that, when academics have devoted attention to the topic, they have largely neglected the importance of inter-organisational aspects. As a result of the limited attention devoted to Inter-organisational Information Sharing by the academic community, and the high relevancy and importance of this topic for public administrations – especially the Belgian federal administrations –, it has been decided to select this topic for this analysis.

The second policy area, Open Data, also appears to be a highly important and recurring topic in the Ministerial Policy Notes of the Belgian federal e-government policy. Open Data is defined as "non-privacy-restricted and non-confidential data which is produced with public money and is made available without any restrictions on its usage or distribution" (Janssen et al., 2012, p. 258). Open Data reflections are however not new. Indeed, as K. Janssen (2011) underlined, the quest for opening up governmental data started in the 1980s. The concept has however gained much more attention from 2009 onwards when the former USA President, Mr. Barack Obama, signed two Memoranda on Open Government, which included the need to strive towards Open Data (Crompvoets et al., 2018). Also the G8 Open Data Charter concluded in 2013 has put the topic on the agenda (G8, 2013)

5.3 Methodology

The research was executed by making use of a single case study. The e-government policy of the Belgian federal state was selected for this single case study research. Belgium, a founding member of the EU, is considered to be a representative case for multi-level governance (Hooghe, 2012; Yin, 2003, 2014).

Within the Belgian state structure, there are several state entities, namely a federal entity, three regional entities, and three language community entities. All are equal, have non-overlapping competences and have their own e-government policy. An overview of the Belgian state

structure, with references to the supra-national level as well as the sub-national level can be found in Table 5.2 (Alen & Muylle, 2012).

Table 5.2 – Belgian state structure in relation to supra-national level

<table>
<tr><th colspan="7">State actors</th><th>Level</th></tr>
<tr><td colspan="7">EU Institutions and other international organisations</td><td>Supra-national Level</td></tr>
<tr><td>Belgian Federal entity</td><td>Walloon Region</td><td>Flemish Region</td><td>Brussels Capital Region</td><td>French Language Community</td><td>Flemish Language Community</td><td>German Language Community</td><td>National & Regional Level</td></tr>
<tr><td colspan="7">Belgian provinces (10)</td><td rowspan="2">Sub National Level</td></tr>
<tr><td colspan="7">Belgian municipalities (589)</td></tr>
</table>

Source: Based on Alen & Muylle (2012)

The single case study is qualitative and interpretative in nature, and was executed by combining a document analysis and interviews (Lieberman, 2005). A methodological triangulation took place to ensure "a confluence of evidence that breeds credibility" (Bowen, 2009, p. 28; Eisner, 1991). The document analysis allowed understanding how the activities of one public administration have influenced those of another public administration. The triangulation with the interviews allowed gaining a deeper understanding of the motivations of public administrations and of their behaviour towards each other. The interviews created the possibility to gather direct information from practitioners about the impact and the way they deal with this impact of the EU actions on their policies. Therefore, the combination of both methods is highly suitable.

The document analysis focused on the retrieval and analysis of the legally binding documents from the EU Institutions and the Belgian administrations. Furthermore, non-binding EU policy documents and the Belgian Ministerial Declarations on e-government were analysed. The documents cover the period 1995-2019 with two exceptions, i.e. a Belgian Law of 1983 and one of 1990 that both had a crucial importance for the set-up of an information sharing system in the social security sector. As some information was not available via documents, websites of the European Commission related to Inter-organisational Information Sharing and Open Data were also analysed. An overview of the analysed documents can be found in Annex 5.

For the interviews, it was decided to use a combination of the interview guide approach and the standardised open-ended interview (Mortelmans, 2009; Patton, 2015). Questions focused on the e-government policy developments of the last two decades as well as on the challenges and

requirements concerning e-government, whereby the topics of Open Data and Inter-organisational Information Sharing received substantial attention. The respondents were selected on the basis of their knowledge and experience with e-government, e-services and/or data use in e-services. In total, 61 interviews were conducted between July 2016 and November 2019. The respondents represent three categories: (1) civil servants working in the Belgian federal administration (27 interviews), (2) civil servants from the European, Belgian regional and local level (27 interviews), and (3) actors from the private sector (7 interviews). An overview of the conducted interviews can be found in Table 5.3. The long spanning interview period allowed to gain a complete overview of the Inter-organisational Information Sharing and Open Data developments in Belgium. The interview data was analysed with NVivo. Each interview lasted between one and two hours.

Table 5.3 – Interview Overview

	Organisation type	Level	Organisation
1	Administration	Federal	All-round Semi-cellular Trunking Radio communication system with Integrated Dispatching (ASTRID)
2	Administration	Federal	Belgian Royal Observatory
3	Administration	Federal	Federal Police
4	Administration	Federal	Federal Public Service Chancellery of the Prime Minister – Service for Administrative Simplification
5	Administration	Federal	Federal Public Service Economy, Small & Medium Enterprises, Self-employed and Energy – Statistics Belgium
6	Administration	Federal	Federal Public Service Finance and Federal Public Service Societal Integration
7	Administration	Federal	Federal Public Service Finance – General Administration of the Patrimonial Documentation
8	Administration	Federal	Federal Public Service Information and Communication Technology – Actor 1
9	Administration	Federal	Federal Public Service Information and Communication Technology – Actor 2
10	Administration	Federal	Federal Public Service Internal Affairs – Emergency and Crisis Management
11	Administration	Federal	Federal Public Service Mobility and Transport – Belgian Civil Aviation Authority
12	Administration	Federal	Infrabel
13	Administration	Federal	Ministry of Defence
14	Administration	Federal	Privacy Commission
15	Administration	Federal	Royal Meteorological Institute of Belgium

16	Administration	Federal	State Archives of Belgium – Actor 1
17	Administration	Federal	State Archives of Belgium – Actor 2
18	Administration	European	EUROCITIES
19	Administration	European	European Commission – Directorate General CONNECT – Actor 1
20	Administration	European	European Commission – Directorate General CONNECT – Actor 2
21	Administration	European	European Commission – Directorate General CONNECT – Actor 3
22	Administration	Regional	Agency Information Flanders
23	Administration	Regional	Brussels Regional Informatics Centre
24	Administration	Regional	e-Wallonia-Brussels Simplification
25	Administration	Regional	Public Service of Wallonia – Directory-General Economy, Employment and Research
26	Administration	Local	Flemish Organisation of Local Cities and Municipalities
27	Administration	Local	Intermunicipal Company for Informational and Organisational Mutualisation
28	Administration	Local	Municipalities of Saint-Gilles and Brussels
29	Administration	Local	Union of Villages and Cities of Wallonia
30	Private sector	/	AGORIA Geo-ICT – Actor 1
31	Private sector	/	AGORIA Geo-ICT – Actor 2
32	Private sector	/	BPOST (State-owned Postal Company)
33	Private sector	/	SMALS
34	Private sector	/	SMALS and Social Security Service
35	Private sector	/	Proximus (State-owned Telecommunications Company)

Source: Chantillon, Crompvoets, et al. (2017); Chantillon, Simonofski, et al. (2017)

5.4 Results

After having presented the concepts of e-government and multi-level governance, we will now outline the results of our case study analysis, and discuss how the concept of multi-level governance impacts the e-government policies of the Belgian federal administration, with regards to the Inter-organisational Information Sharing and the Open Data.

5.4.1 Inter-organisational Information Sharing

5.4.1.1 Inter-organisational Information at the European level

The EU Institutions, i.e. the European Commission, the Council of Ministers, the European Parliament and the Ministers responsible for e-government policies, took actions to improve the Inter-organisational Information Sharing within the Member States' administrations as well as between the different Member States. Both legally and non-legally binding actions were taken by the EU concerning information sharing, and the topic has been on the agenda since the mid-1990's, when the first 'IDA' (Interchange of Data between Administrations) program was launched in 1995. It was the start of a subsequent number of Decisions, which included a focus on increased information sharing between public administrations. In 1999, the 1995 Decision was followed by the adoption of two IDA Decisions by the European Parliament and the Council of Ministers. In 2002, a second IDA program was adopted, and in 2004 the IDABC (Interoperable delivery of pan-European eGovernment service to public administrations, businesses and citizens) program was adopted. At that time, the first European Interoperability Framework was also launched (European Commission, 2004). In 2009, the ISA (Interoperability Solutions for European public Administrations) program was launched, and it was replaced in 2015 by the ISA^2 program.

All those Decisions refer to the need to create interoperability within and across public administrations at the national and regional level of Member States (*Council Decision of 6 November 1995 on a Community Contribution for Telematic Interchange of Data between Administration in the Community (IDA)*, 1995; *Decision No 1719/1999/EC of the European Parliament and of the Council of 12 July 1999 on a Series of Guidelines for Trans-European Networks for the Electronic Interchange of Data between Administrations*, 1999; *Decision No 1720/1999/EC of the European Parliament and of the Council of 12 July 1999 Adopting a Series of Actions and Measures in Order to Ensure Interoperability of and Access to Trans-European Networks for the Electronic Interchange of Data*, 1999; *Decision No 2045/2002/EC of the European Parliament and of the Council of 21 October 2002 Adopting a Series of Actions and Measures in Order to Ensure Interoperability of and Access to Trans-European Networks for the Electronic Interchange of Data*, 2002; *Decision No 2046/2002/EC of the European Parliament and of the Council of 21 October 2002 on a Series of Guidelines, Including the Identification of Projects of Common Interest, for Trans-European Networks for the Electronic Interchange of Data*, 2002; *Decision 2004/387/EC of the European Parliament and of the Council of 21 April 2004 on Interoperable Delivery of Pan-European EGovernment Services to Public Administrations,*

Businesses and Citizens (IDABC), 2004; *Decision No 922/2009/EC of the European Parliament and of the Council of 16 September 2009 on Interoperability Solutions for European Public Administrations (ISA)*, 2009; *Decision (EU) 2015/2240 of the European Parliament and of the Council of 25 November 2015 Establishing a Programme on Interoperability Solutions and Common Frameworks for European Public Administrations, Businesses and Citizens (ISA² Programme)*, 2015; Publications Office, 2019). The exchange of data and information within and among the public administrations was (and is) seen as one of the key potential aims.

Besides those Decisions, the Ministers of the Member States have also agreed on several Ministerial Declarations. The 2017 Tallinn Ministerial Declaration, for example, includes several references to the importance of the once-only principle. Earlier Ministerial Declarations also called for the implementation of principles such as once-only and interoperability for cross-border and cross-sector activities (Ministers from the Member States of the European Union et al., 1997; Ministers of EU Member States et al., 2005, 2007; Ministers of EU Member States & Ministers of the European Economic Area, 2010; Ministers of EU Member States & Ministers of the European Free Trade Area, 2009). However, it has to be underlined that the Tallinn Declaration is the sole declaration in which such strong emphasis is put on the once-only principle.[21]

Specific European Commission actions, which intended to influence the Inter-organisational Information Sharing, were outlined in the EU e-Government Action Plan 2010-2015 and EU e-Government Action Plan 2016-2020 (*Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - EU EGovernment Action Plan 2011-2015*, 2010; *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - EU EGovernment Action Plan 2016-2020*, 2016). Specific references are made to the once-only principle, the need for interoperability and the sharing of information among public administrations within and across Member States. Other examples include the Toolbox for Practitioners on the Quality of Public Administration (2015, 2017), which devotes attention to Service Delivery and Digitalisation, interoperability and the once-only principle (European Commission, 2017b).

Probably the most important element on which the European Commission, in collaboration with the Member States, has been working for the last two decades is the European

[21] This was at the time of writing the article, the Berlin Declaration also refers to the once-only principle (EU Ministers in charge of eGovernment Policy and Coordination, 2020).

Interoperability Framework. Interoperability has been defined as "the ability of disparate and diverse organisations to interact towards mutually beneficial and agreed common goals, involving the sharing of information and knowledge between the organisations, through the business processes they support, by means of the exchange of data between their respective ICT [information and communication technologies] systems" (*Decision (EU) 2015/2240 of the European Parliament and of the Council of 25 November 2015 Establishing a Programme on Interoperability Solutions and Common Frameworks for European Public Administrations, Businesses and Citizens (ISA² Programme) as a Means for Modernising the Public sector*, 2015, p. L318/9). What is clear from the above-described action is, firstly, that the different actors at EU level have long been focused on the need for interoperability. Secondly, information sharing is only a smaller part of a much broader policy striving towards the need for interoperability and the delivery of pan-European e-services for administrations, businesses and citizens.

5.4.1.2 Inter-organisational Information Sharing policy in the Belgian federal administration

A number of activities show that the Belgian federal administration has already stimulated Inter-organisational Information Sharing since the 1980's and beginning of the 1990's. This has further continued in the 21st century. Over the years, several actions were taken to improve Inter-organisational Information Sharing, and the focus was originally put on two key elements: Service integrators, i.e. the mechanisms to exchange data from authentic sources, and authentic sources, i.e. "data bases in which unique and original data is stored" (FOD Beleid en Ondersteuning, 2019). Already in 1983, the first factual authentic source was set-up, the State Registry of Natural Persons, aiming to create a single registry including all natural persons in Belgium. In 1990, this was followed by the creation of the Crossroads Bank for Social Security. Via this Crossroads Bank, the government aimed to ensure that data of different social security organisations would run smoothly from one organisation to another (*Wet van 15 Januari 1990 Houdende Oprichting En Organisatie van Een Kruispuntbank van de Sociale Zekerheid*, 1990). It is a decentralised system for information exchange and the list of participating organisations was extended in 2002 and 2005. As De Bot (2015) notices, the "computerisation project of the Belgian social security, in the context of the Second European e-government conference, organised by the European Commission, [was] identified as one of the five best practices in the category 'European, central and local public e-cooperative'" (De Bot, 2015, p. 390).

No further actions were taken until 2003 when the Crossroads Bank for Undertakings was set-up by the federal administration, which included also an authentic source, namely a unique

number for each registered company (*Wet van 16 Januari 2003 Tot Oprichting van Een Kruispuntbank van Ondernemingen, Tot Modernisering van Het Handelsregister, Tot Oprichting van Erkende Ondernemingsloketten En Houdende Diverse Bepalingen*, 2003). This was followed, after another five years of reduced activity, by the creation of the eHealth Service Integrator in 2008 and later, in 2012, by the set-up of the Federal Service Integrator (*Wet van 21 Augustus 2008 Houdende Oprichting En Organisatie van Het EHealth-Platform*, 2008; *Wet van 15 Augustus 2012 Houdende Oprichting En Organisatie van Een Federale Dienstenintegrator.*, 2012).

The three Belgian regions all undertook similar actions in this period. In 2012 the Flemish Service Integrator was created, followed by the Walloon and Brussels Capital Region Service Integrators, respectively in 2013 and 2014 (*Ordonnantie van 8 Mei 2014 Betreffende de Oprichting En Organisatie van Een Gewestelijk Dienstenintegrator*, 2014; *Decreet van 13 Juli 2012 Houdende de Oprichting En Organisatie van Een Vlaamse Dienstenintegrator*, 2012; *Accord de Coopération Du 23 Mai 2013 Entre La Région Wallonne et La Communauté Française Portant Sur Le Développement d'une Initiative Commune En Matière de Partage de Données et Sur La Gestion Conjointe.*, 2013). These were all based on the same service integrator principle: A decentralised exchange of information where one organisation is responsible for the organisation of the information exchange.

Regarding authentic sources it has to be underlined that the Belgian federal administration had already agreed in 2001, together with the Belgian regions as well as the three language communities, to develop a common framework for the development and maintenance of those sources (*Samenwerkingakkoord van 2001 Betreffende de Bouw En Exploitatie van Een Gemeenschappelijk E-Platform*, 2001). This commitment was renewed in 2006, as well as in 2013 (*Samenwerkingsakkoord van 2006 Betreffende de Principes Voor Een Geïntegreerd E-Government En de Bouw, Het Gebruik En Beheer van Ontwikkelingen En Diensten van Een Geïntegreerd e-Government.*, 2006; *Samenwerkingakkoord van 2013 Voor Het Harmoniseren En Uitlijnen van de Initiatieven Die de Realisatie van Een Geïntegreerd E-Government Beogen.*, 2013).

In 2014, a federal law anchored the once only principle. All federal actors were, from 2014 onwards, obliged to check first within the federal administration if the data they needed was available within another federal actor's database. Only if the information was not available, could the federal actors then ask the individual or organisation for the data. The condition was however that the data they needed was recognised as authentic source (*Wet van 5 Mei 2014 Houdende Verankering van Het Principe van de Unieke Gegevensverzameling in de Werking van de Diensten En Instanties Die Behoren Tot of Taken Uitvoeren Voor de Overheid En Tot Vereenvoudiging En Gelijkschakeling van Elektronische En Papi*, 2014). However, until now the

criteria and procedure to recognise an authentic source have not been defined by the federal government, which makes the 2014 Once-only Law a dead letter (Belgisch Staatsblad - Moniteur belge, 2019).

Besides the importance of service integrators and authentic sources, also interoperability constitutes a central element in the work towards inter-organisational information sharing. Indeed, interoperability is expected to lead to improved information sharing. The first references to the need for attention on the topic of interoperability can be traced back to the Second Cooperation Agreement of 2006 between the federal administration, the three regions and the three language communities (*Samenwerkingsakkoord van 2006 Betreffende de Principes Voor Een Geïntegreerd E-Government En de Bouw, Het Gebruik En Beheer van Ontwikkelingen En Diensten van Een Geïntegreerd e-Government.*, 2006). The described interoperability levels are exactly those agreed in the 2004 European Interoperability Framework of the European Commission. According to one of the respondents, the European Commission took the on-going Belgian interoperability work as an example for the European Interoperability Framework. No official document could however be found to support this statement. On the contrary, the Second Cooperation Agreement dates from two years later than the first released European Interoperability Framework (European Commission, 2004; *Samenwerkingsakkoord van 2006 Betreffende de Principes Voor Een Geïntegreerd E-Government En de Bouw, Het Gebruik En Beheer van Ontwikkelingen En Diensten van Een Geïntegreerd e-Government.*, 2006).

5.4.1.3 Analysing the Multi-level Governance Criteria

The four multi-level governance conceptual criteria will now be analysed on the basis of the above collected information. The first criterion refers to the "identification of discrete or nested territorial levels of decision making" (Bache & Flinders, 2004a, p. 197). In a multi-level governance context, this identification of discrete or nested territorial level of decision-making becomes more difficult as a result of the complex overlapping networks. Actions taken in different and sometimes overlapping networks, although not always legally binding, do influence the decisions that are taken at other levels. Whereas the Belgian federal administration was independent in its decision-making for the creation of the State Registry of Natural Persons (1983) and the set-up of the Crossroads Bank for Social Security (1990), this changed afterwards. The Belgian federal administration gradually became more part of a network in which the EU, but also the regional actors, influenced the decision-making process of the federal administration. This criterion can be considered to be fulfilled.

Secondly, it is assumed in a multi-level governance context that "the role of the state is being transformed as state actors develop new strategies of coordination, steering and networking to protect and, in some cases, enhance state autonomy" (Bache & Flinders, 2004a, p. 197). The document analysis and the interviews revealed, as described above, that the Belgian federal administration was already, for a longer period of time, working on improving the Inter-organisational Information Sharing. What is interesting, however, is the fact that the EU actions on information sharing, both legally and non-legally binding, appear to have influenced the need to take measures, especially concerning the once-only principle, the need for interoperability and – to a lesser extent – the further development of the network of service integrators. Indeed, after the set-up of the State Registry of Natural Persons in 1983 and the creation of the Crossroads Bank for Social Security in 1990, no further actions were taken. It was only after the European Commission has put the topic of information sharing on the agenda that the Belgian federal, regional and language community administrations re-launched their common and individual actions. Therefore, it can be argued that state actors have developed new strategies for their coordination, steering and networking. However, those actions were/are not taken to protect or enhance their state autonomy, but rather to follow the advocated policies at EU level. This criterion has therefore only partially been met.

The third criterion refers to the nature of democratic accountability. This accountability "has been challenged and needs to be rethought or at least reviewed" (Bache & Flinders, 2004a, p. 197). Accountability can be defined as "the need to control misuses of power for those who might not be able to directly participate in decision-making" (Suškevičs, 2012, p. 220). In a multi-level governance context, there are different actors involved in the policy-making process, making it hard for the accountability holder to understand how the different actors are handling the policy-making process. The accountability holder is the citizen. It is hard to argue that the accountability concerning Inter-organisational Information Sharing has been challenged. Although the EU has taken legally binding Decisions, and suggested a European Interoperability Framework, thereby requiring the Member States to develop a National Interoperability Framework, it is clear that the decisions concerning Inter-organisational Information Sharing remain to a large extent in Member States' hands. In Belgium, it is the federal administration that decided to set-up service integrators. Furthermore, it was the Belgian federal administration that affirmed the authentic source principle as well as the once-only principle in law. Consequently, it was always clear who was accountable. The accountability was not challenged and it does not to be rethought. The accountability criterion therefore does not appear to be met.

The final criterion is the participation of non-state actors, and in particular whether or not the decision making at various territorial levels is characterised by an increased participation of non-state actors (Bache & Flinders, 2004a). Concerning this fourth criterion, there was no information found on a role or an increased role of non-state actors in the decision-making process concerning Inter-organisational Information Sharing. There is however a clear intention from the different public administration actors to work on Inter-organisational Information Sharing to improve the service delivery for citizens, businesses and other actors. This motivation is not created because of the EU. Already before the EU took any action in the field of information sharing, the Belgian federal administration took specific measures in this respect. The EU actions nevertheless further stimulated the aims of improving the service delivery towards citizens, businesses and other actors. The respondents also confirmed this conclusion. None of them referred to the impact of non-state actors in any assessment activity related to information sharing.

Table 5.4 – Multi-level governance – Inter-organisational Information Sharing

Criteria	Status
Complexified identification of discrete or nested territorial levels of decision-making	Fulfilled
Transformed role of the state	Partially fulfilled
Nature of democratic accountability	Not fulfilled
Increased participation of non-state actors	Not fulfilled

Source: Criteria from Bache & Flinders (2004a, p. 197)

On the basis of those criteria (see Table 5.4), and with the knowledge that only the first criterion can be considered as fulfilled and the second criterion only partially, it can be concluded that Inter-organisational Information Sharing is only partially impacted by multi-level governance. From the analysis, it can be deduced that the Belgian federal administration was already actively working on this topic, long before the EU took actions. Nevertheless, the EU activities stimulated the administration to move forward, and this does indeed seem to have impacted the Inter-organisational Information Sharing policy. Without the EU, it seems unlikely that the federal government, as well as other administrations in Belgium, would have taken the specific actions. It can, as such, be argued that the EU stimulated the federal administration to move forward its Inter-organisational Information Sharing policy.

5.4.2 Open Data

5.4.2.1 Open Data policy at the European Level

Regarding Open Data, the EU has taken both legally binding actions and non-legally binding actions. The European Union Institutions, and specifically the European Commission, have been dealing with the opening of public sector information for re-use by private sector actors in order to stimulate economic growth since the second half of the 1980's (K. Janssen & Hugelier, 2013). In 2003, after several years of negotiation, the European Parliament and Council agreed on a proposal of the European Commission for the Directive on the Re-use of Public Sector Information, the so-called PSI Directive. This Directive aimed, in light of the strong information availability in the public sector and the potential of this information for European companies, to open public sector information for re-use. Important in this respect is the fact that the decision to allow re-use remained in the hand of the Member States (*Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the Re-Use of Public Sector Information.*, 2003). The Directive had to be transposed by 1 July 2005. Belgium, together with four other Member States failed to comply, which led to several infringement procedures at the European Court of Justice (European Commission, 2006).

A first review was undertaken in 2008-2009, resulting in a European Commission Communication on the Review of the PSI Directive 2003. In 2010, a public consultation followed for the 2003 Directive, whereby Belgium was among one of the four countries – besides Denmark, France and the Netherlands – to submit a position paper on the potential upcoming review of the PSI Directive (European Commission, 2012). In 2013, the review of the Directive was adopted and the scope of the Directive was strongly broadened. Indeed, the Member States would no longer have the choice to allow the re-use of their data or not. Opening the public sector data was no longer optional but compulsory.

A second review of the Directive was negotiated on the basis of a proposal adopted by the European Commission in April 2018. This recast of the PSI Directive was adopted on 20 June 2019. The aim of this recast is to "facilitate the availability and re-use of public sector data" (European Commission, 2019a; European Parliament & Council of the European Union, 2019). The main update is the expansion of the scope of application of the PSI Directive to certain data held by certain public organisations (mainly those active in the utilities and transport sectors) and to data generated in the context of publicly funded research. Moreover, high-value datasets will have to be established and these will have to be shared for free.

Next to the adoption of these legal texts, the EU Institutions are undertaking a number of non-legal activities. At different EU levels, actions were and are taken to promote and underline the importance of opening public sector data. The Ministers responsible for e-government declared under the Estonian EU Presidency in 2017 that they will, in their countries, "increase the availability and quality of open government data that is of value to economy and society" (Ministers in charge of eGovernment policy and coordination from 32 countries of the European Union and the European Free Trade Area, 2017, p. 6). Other actions were taken by the European Commission, such as the EU e-Government Action Plans. A full section is dedicated to the re-use of public sector information in the EU e-Government Action Plan 2011-2015, and although the EU e-Government Action Plan 2016-2020 does not include a specific focus on the PSI Directive, there is strong reference to the importance of Open Data (*Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - EU EGovernment Action Plan 2011-2015*, 2010; *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - EU EGovernment Action Plan 2016-2020*, 2016). Besides the official meeting platforms that exist within the European Union Institutions, there is also a specific Public Sector Information Group. This group, founded in 2002, "consist of officials from Member State, local or regional authorities and representatives from private sector organisations who meet regularly to exchange good practices on PSI re-use and initiatives supporting PSI re-use and discuss practical issues regarding transposition of the PSI Directive" (*Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - EU EGovernment Action Plan 2011-2015*, 2010, p. 6). Furthermore, there is an EU Open Data Portal with datasets collected and published by the European Union Institutions which has been set-up in 2012, and a European Data Portal "that harvests metadata from public sector portals throughout Europe" (European Commission, 2019b; European Union, 2012)

Consequently it can be argued, that from an multi-level governance perspective the EU has taken a number of substantial legally binding and non-legally binding actions in order to force and motivate the Member States to make their public sector information more accessible for re-use. It is now necessary to look at how the Belgian policy has been influenced by the European Union level.

5.4.2.2 Open Data policy in the Belgian federal administration

Different Belgian administrations are affected by the PSI Directive and had as such the duty to transpose it into their respective legislations. All Belgian public administrations were too late with the transposition of the first PSI Directive, which had to be finished by 1 July 2005. As a consequence, the European Commission launched an infringement procedure against Belgium as well as four other Member States that failed to comply (European Commission, 2006). Nevertheless, the Belgian federal administration as well as the other affected administrations transposed the Directive afterwards. The Walloon and German Language Community administrations were the first to undertake action in December 2006. The Belgian federal administration, the Flemish administration, the French Language community administrations did this by April 2007, and the Brussels Capital administration did it in March 2008 (*Ordonnantie van 6 Maart 2008 Houdende Omzetting van de Richtlijn 2003/98/EG van Het Europees Parlement En de Raad van 17 November 2003 Inzake Het Hergebruik van Overheidsinformatie*, 2008; *Wet van 7 Maart 2007 Tot Omzetting van de Richtlijn 2003/98/EG van Het Europees Parlement En de Raad van 17 November 2003 Inzake Het Hergebruik van Overheidsinformatie*, 2007; *Decreet van 27 April 2007 Betreffende Het Hergebruik van Overheidsinformatie*, 2007; *Décret Du 25 Janvier 2007 Portant Transposition de La Directive 2003/98/EC Du Parlement Européen et Du Conseil Du 17 Novembre 2003 Concernant La Réutilisation Des Information Du Secteur Public*, 2007; *Dekret von 18 Dezember 2006 Über Die Weiterverwendung Öffentlicher Dokumente*, 2006; *Décret Du 14 Decembre 2006 Portant Transposition de La Directive 2003/98/CE Du Parlement Européen et Du Conseil Du 17 Novembre 2003 Concernant La Réutilisation Des Information Du Secteur Public*, 2006; *Décret Du 14 Decembre 2006 Portant Transposition de La Directive 2003/98/CE Du Parlement Européen et Du Conseil Du 17 Novembre 2003 Concernant La Réutilisation Des Informations Du Secteur Public et Relatif à La Publicité de l'administration Dans Les Matiè*, 2006).

A similar situation presented itself also for the Revised PSI Directive of 2013. Indeed, although it had to be transposed by 18 July 2015, the Flemish as well as the German Language Community administrations were the only administrations that were ready within the foreseen time period (*Decreet van 15 Juni 2015 Tot Wijziging van Het Decreet van 27 April 2007 Betreffende Het Hergebruik van Overheidsinformatie En Het Decreet van 18 Juli 2008 Betreffende Het Elektronische Bestuurlijke Gegevensverkeer*, 2015; *Dekret von 29 Juni 2015 Zur Abänderung Des Dekrets Vom 18 Dezember 2006 Über Die Weiterverwendung Öffentlicher Dokumente*, 2015). All other administrations, including the federal administration were too late. In 2015, the European

Commission therefore decided to launch an infringement procedure against 17 Member States[22] "due to the late transposition of the revised PSI Directive" (European Commission, 2015). Belgium was, for the second time, also listed. The federal administration was the first to take action, in 2016, together with Brussels Capital Region administration. The Walloon Administration only transposed the Directive in 2017 (*Ordonnantie van 27 Oktober 2016 Ertoe Strekkende Een Opendatabeleid Uit Te Stippelen En Houdende Omzetting van de Richtlijn 2013/37/EU van Het Europees Parlement En de Raad van 26 Juni 2013 Tot Wijziging van Richtlijn 2003/98/EG van Het Europees Parlement*, 2016; *Wet van 4 Mei 2016 Inzake Het Hergebruik van Overheidsinformatie*, 2016; *Décret de 19 Juillet 2017 Conjoint de La Région Wallonne et de La Communauté Française Relatif à La Réutilisation Des Informations Du Secteur Public et Visant à l'établissement d'une Politique de Données Ouvertes*, 2017; *Décret de 12 Juillet 2017 Relatif à La Réutilisation Des Information Du Secteur Public et Visant à l'établissement d'une Politique de Données Ouvertes ("Open Data")*, 2017; *Décret de 12 Juillet 2017 Conjoint Relatif à La Réutilisation Des Informations Du Secteur Public et Visant à l'établissement d'une Politique de Données Ouvertes ("Open Data") Pour Les Matières Visées Par l'article 138 de La Constitution*, 2017).

The fact that all the administrations transposed the Directive too late is no co-incidence, but a sign of the resistance against the opening of the public sector information for re-use. Indeed, in contrast with the Inter-organisational Information Sharing, the Belgian administrations were not at all working on this topic. The general policy as well as the administrative tradition focused on keeping public sector information within the public sector. Opening the data for re-use, and thereby limiting the potential for profit making on this data, was the exception. From the interviews it can be understood that those late transpositions are the result of a combination of different factors. First of all, there was a lack of political attention for the topic, which created the possibility for the administrations to leave the topic aside. Second, there was also a lack of resources to fund Open Data. Some organisations sold their public sector information to companies and citizens, and partially fund(ed) their own activities in that way. This economic system was undermined by the EU actions. Finally, and most importantly, there was a lack of understanding on what Open Data is, and a resistance in some organisations towards opening up public sector data for re-use by non-public sector actors. However, it has to be recognised that some organisations had been willing to open their data for re-use, but lacked the necessary legal framework as long as the Directive was not transposed.

[22] The Member States are Austria, Belgium, Bulgaria, Cyprus, Estonia, Finland, France, Ireland, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia and Slovenia.

5.4.2.3 Analysing the Multi-level Governance Criteria

In line with the approach taken for the Inter-organisational Information Sharing, the four multi-level governance conceptual criteria will now be analysed on the basis of the above collected information on Open Data.

A first criterion refers to the "identification of discrete or nested territorial levels of decision making" (Bache & Flinders, 2004a, p. 197). In a multi-level governance context this identification is becoming more difficult as a result of the complex overlapping networks. This criterion appears to be met. The Belgian federal and regional administrations were required to undertake actions because of the EU legally binding Directives, which complicates the identification of decision-making levels. Furthermore, the Belgian federal state structure reinforces this even more. In theory there is a non-overlapping and non-hierarchical division of competencies between the federal administration and the different regional administrations. However, in practice, the different administrations – especially between the federal and regional administrations – influence each other's policies by the decisions they take and by the need to exchange information and data. This criterion seems to be fulfilled.

Secondly, it is assumed in a multi-level governance context that "the role of the state is being transformed as state actors develop new strategies of coordination, steering and networking to protect and, in some cases, enhance state autonomy" (Bache & Flinders, 2004a, p. 197). The involved state actors have indeed adapted their governance approach. In contrast to the multi-level governance criterium, this adaptation has not been undertaken in order to protect or enhance state autonomy. The interviews with the different involved actors revealed that within the federal administration a number of actors have been asked to ensure the implementation of the EU's requirements. However, there is no evidence that a specific group of actors within the federal administration has deliberately organised itself in order to protect or enhance the autonomy of the state concerning the topic of Open Data. As indicated, there has nevertheless been resistance towards the implementation of the Open Data policy within the federal administration. There is resistance in some organisations towards opening their data. This is because these organisations believe that opening data will not lead to more re-use of data by citizens or small and medium sized enterprises but rather by large multi-national corporations who have sufficient means to investigate the potential of the data. Given these reasons, this criterion can be considered to be only partially fulfilled.

The third criterion refers to the nature of democratic accountability. This accountability "has been challenged and needs to be rethought or at least reviewed" (Bache & Flinders, 2004a, p.

197). Accountability can be defined as "the need to control misuses of power for those who might not be able to directly participate in decision-making" (Suškevičs, 2012, p. 220). In a multi-level governance context, there are different actors involved in the policy-making process, making it hard for the accountability holder to understand how the different actors are handling the policy-making process. The accountability holder is the citizen. In the specific case of Open Data, it does indeed appear that the nature of the accountability is challenged. The policy-making process that led to the opening of public sector information for the re-use by actors outside of the public sector is highly complex, due to the involvement of different actors who have varying legal powers, whereby especially the European level is highly powerful and the Member States and related Member State public administrations are required to follow.[23] . This working structure complicates the possibility for citizens to hold national politicians and public administrations accountable for their decisions, and requires them to hold the European level accountable. The Belgian federal state structure further intensifies the complexity for citizens to hold elected politicians and public administrations accountable. Indeed, both the Belgian regions and federal administration are all affected by the decisions on Open Data coming from the EU level, and as the Council of Ministers structure allows only one representative from Belgium, the Belgian actors first need to agree and coordinate their positions towards one Belgian position. This situation also leads to a different required approach towards accountability, whereby the accountability is challenged and does need to be rethought and potentially be reviewed. This criterion can consequently be considered to be fulfilled.

A fourth criterion is the participation of non-state actors, and in particular whether or not the decision making at various territorial levels is characterized by their increased participation (Bache & Flinders, 2004b). Looking at the Belgian level teaches us that various private and public administration actors took steps to influence the decision-making process. It stems from the interviews that the private sector strongly favours Open Data and pushed the topic forward. Furthermore, there were/are strong connections between the private sector associations and public administration actors. There is, for example, an annual event organised in collaboration between the National Geographic Institute of Belgium and the main Information and Communication Technologies Sector Federation, AGORIA, on geo-information (National Geographic Institute of Belgium & AGORIA, 2019). Consequently, also this criterion can be considered to be fulfilled.

[23] It should of course be taken into account that the decision making process at EU level, for this policy and related legal instruments, allows for a role of the Member States via the Council of Ministers.

Table 5.5 – Multi-level governance – Open Data

Criteria	Status
Complexified identification of discrete or nested territorial levels of decision-making	Fulfilled
Transformed role of the state	Partially Fulfilled
Nature of democratic accountability	Fulfilled
Increased participation of non-state actors	Fulfilled

Source: Criteria from Bache & Flinders (2004a, p. 197)

Overall, it can be argued that there are clear indications that regarding the topic of Open Data, the Belgian policy has to a high degree been influenced by the EU decision-making process. As indicated in

Table 5.5, three criteria have been fulfilled and one is partially fulfilled. The multi-level governance context has consequently impacted the Belgian federal Open Data policy.

5.5 Discussion

As shown in the Results Section, there is a difference between the impact of multi-level governance on Inter-organisational Information Sharing and on Open Data. For the Open Data policy, the impact of the multi-level governance context on the Belgian federal policy has been clearly demonstrated. Regarding Inter-organisational Information Sharing, the picture is more nuanced. The EU actions mainly stimulated the Belgian federal administration to move forward with its policies, but only one out of four criteria was completely fulfilled, and another one was partially fulfilled. This begs the question of how this situation can be theorised. It is here that the concept of Europeanisation comes into play. Europeanisation has been defined and used in various ways, but as Olsen (2002) argues, the concept "may help us give better accounts of the emergence, development and impacts of a European, institutionally-ordered system of governance" (Olsen, 2002, p. 922). One of the specific Europeanisation forms that Olsen (2002) describes refers to the adaptation of domestic policies to actions undertaken by EU Institutions. This does indeed appear to be the case for Inter-organisational Information Sharing. The policy of the Belgian federal administration was already in development, and has been further influenced and developed once the EU Institutions started to undertake specific actions. The Open Data policy on the contrary has fully developed under influence of the EU.

This chapter looks specifically at two policies of the broader e-government policy of the Belgian federal administration. For those two policies, two different impacts of multi-level governance were observed. It is therefore expected that also for other specific policies within the e-government policy, there will be strong differences in the impact of multi-level governance on the Member States. This is an important finding and shows that even within one policy domain, there can be strong differences between the different sub-policies. Consequently, when public administrations aims for an e-government process – as indicated at the beginning of this chapter e-government is only seen as a process to achieve something else – the multi-level governance context has to be taken into account, as it can have strong consequences on the internal e-government process. Related to this, it is important to underline that the context of multi-level governance is not the only factor that explains differences between the two cases. Being part of this thesis, this chapter only looked at one possible factor that impacts those two policy domains. The other chapters also look at other factors that influence the e-government policies, think of public values, (the use of) internal coordination (instruments) and the role of user-participation, and besides those factors there are still other factors – e.g. role of political actors, availability of financial resources etc.

5.6 Conclusion

Through this work, we aimed to understand the impact of multi-level governance on the e-government policy of a central government, and especially its administration, within the EU. The following research question was thereby asked: **What is the impact of multi-level governance on the e-government policies of a public administration?** It was hypothesised that the e-government policy of an EU Member State is strongly influenced by actions taken at EU level. In various other policy areas, it is known that the EU has a strong impact on the policies conducted by Member States. The Member States administrations no longer function as monolithic and self-standing blocks. This potential impact of the EU on e-government policies of Member States does appear to be neglected in current e-government literature (Troshani et al., 2018). It is, however, important to understand why administrations are taking certain decisions in their e-government policy.

For this research, a qualitative methodological triangulation was applied, combining a document analysis with 35 interviews. The analysed documents are documents with a legal status from the EU and the Belgian administrations, as well as Ministerial and policy declarations of the EU and the Belgian administrations. The respondents to the interviews can

be divided in three groups: civil servants from the Belgian federal administration; civil servants from the sub-national regional and local administrations as well as supra-national EU civil servants; and representatives from the Belgian private sector. Four criteria, developed by Bache & Flinders (2004), were used to assess the impact of multi-level governance on the two selected areas.

The analysis focused on Inter-organisational Information Sharing, which takes place within the administration, and Open Data, which deals with the sharing of public sector data with external non-governmental actors such as citizens, businesses and other organisations in society. The results of this research show that there is a difference in the impact of the multi-level governance context on those two policies. Indeed, whereas the Open Data policy of the Belgian federal administration is clearly impacted by the decisions taken at the EU level, the situation is different for Inter-organisational Information Sharing. On the basis of the four multi-level governance criteria, it can be concluded that Inter-organisational Information Sharing is only partially impacted by multi-level governance. From the analysis, it can be deduced that the Belgian federal administration was already actively working on this topic, long before the EU undertook actions. Nevertheless, the EU activities stimulated the federal administration to move forward and this has impacted the activities of the federal administration. Without the EU actions, it seems unlikely that the federal government would have taken those actions – especially those related to interoperability and the once-only principle. Regarding the Open Data policies, the Belgian policy has, to a strong degree, been influenced by the European decision-making process. All criteria have been met, although it has to be underlined that there is no deliberately organised resistance from the federal public administration towards Open Data. Multi-level governance has, as such, impacted the Belgian federal Open Data policy. This is a highly interesting conclusion, and shows that for the broader topic of e-government, of which those two policies are part, there is already a discrepancy.

Although the research has focused on two sub-policies of e-government, making a generalisation to the wider e-government policy impossible, it has to be underlined that those results have important consequences. The results demonstrated that e-government, considered as a process, is not something organised by an individual public administration. It is a process that is influenced by other public administrations and those actors consequently need to be taken into account when working on e-government.

When linking this to future research, it would therefore be relevant to continue the research on the impact of the multi-level governance context on e-government, thereby researching other specific policies (identification and access management, blockchain use by public

administrations, artificial intelligence etc.) within the broader e-government policy. Furthermore, it would be good to gain a deeper understanding of the relation between the concept of multi-level governance and Europeanisation. Also, it might be highly relevant to conduct country comparison, focused on both countries with a centralised state system and a federalised state system. Countries such as France, Germany, Estonia or Switzerland would be worth studying. Finally, the authors believe that this research would benefit from a more narrowly defined concept of multi-level governance. The use of a concept and related criteria is always a test in itself for the concepts and those criteria. Although the concept proves to be highly useful to improve the understanding of the e-government policy – and specifically Inter-organisational Information Sharing and Open Data –, the concept has a number of weaknesses due to the various definitions used in academic literature. Therefore, as a final suggestion, the authors invite others to use the multi-level governance concept in their work in order to refine and rework the concept for future research.

Chapter 6 The Influence of Public Values on User Participation in e-Government: An Exploratory Study

Note

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6.1 Introduction

Public administrations increasingly use information and communication technologies in an attempt to improve the service delivery towards their users, whether these are citizens, businesses or other public bodies. This information and communication technologies use is qualified as 'e-government' in the existing literature (Andersen & Henriksen, 2006). In order to answer the concrete problems of their users and to be aligned with their requirements, the participation of users in the development of e-government services is often qualified as a good practice in this context (Axelsson et al., 2010). This participation can happen at different development stages and can be implemented by means of different participation methods, such as interviews, workshops or surveys. However, civil servant are sometimes reluctant to include the users in the development process. There can be several reasons such as a lack of knowledge about potential methods, a lack of time or other resources, or user input that is considered too complex. Another key challenge, related to the lack of knowledge on potential methods, is the wide variety in existing participation methods (Simonofski, Snoeck, et al., 2019b). Indeed, some methods are more relevant than others, depending on the specific context (users' characteristics, their motivation, the organisational culture, the project stage etc.). What is however often forgotten in both public administration and information systems literature, is the relation between the public values sought by the civil servants working on e-government projects and the inclusion of users in those projects. Public values are an important context factor that can be described as 'normative concepts that are used to give direction to public action and/or legitimize such action', they steer the direction and choices made by civil servants and are as such also expected to impact the choice on the type of user participation method (Jaspers & Steen, 2018, p. 1).

The objective of this chapter is to examine the impact of public values on the choice of user participation methods, thereby answering the following research question (see Chapter 1. Introduction): **How do public values impact civil servants in their selection of user participation methods for the development of e-government services?** Since the link between public values and user participation methods has not been documented yet in literature, we performed an exploratory study with the aid of qualitative and quantitative techniques. We selected four illustrative projects where user participation was applied in an e-government context. To help us understand this link qualitatively, we designed a semi-structured interview guide and conducted one interview per project to get a better understanding of the public values sought by the respondents as well as the participation

methods used in the respective projects. To help us understand this link quantitatively, we performed a ranking of the public values for each project. This combination of methods helps us to gain a deeper understanding of the complex phenomenon that is the influence of public values on user participation in an e-government context. This paper contributes at several levels. The examination of several cases where user participation methods were applied and brought benefits for the stakeholders depending on their drivers, allows us to understand the link between public values and participation. From this contribution, we derive a set of management recommendations to help the decision-makers choose which method to implement in their organization depending on the values they aim for.

Section 6.2 details the literature of user participation and its link with public values in the context of e-government. Section 6.3 explains the exploratory research method we applied. Section 6.4 presents the influence of the values on user participation which is then discussed in Section 6.5. Section 6.6 presents the limitations and further research leads to answer. Finally, Section 6.7 summarizes the contributions and provides closing comments.

6.2 Background

6.2.1 User Participation

User Participation has always been considered as a key success factor in information systems development as it allows the functionalities of the system to answer to the users' requirements (Hartwick & Barki, 1994). There exist different participation methods to collect the input of users in the development of information systems. These methods can range from offline techniques to online tools. In a time where citizen-centricity is advocated as the next step for e-government developments (Misuraca, 2009), the input from the users is essential to integrate. There are eight different participation methods reported in e-government research that are briefly described hereunder (Simonofski, Snoeck, et al., 2019a; Simonofski, Vanderose, et al., 2017):

- **Interviews**: This direct interaction method is used by software developers to gather input from users (often in the requirements engineering phase).
- **Representation in the project team**: Salient intermediary users can be considered as partners to give guidance to key public servants.
- **User workshops**: This method allows the interaction with a selected group of representative users.

- **Answer to surveys**: Online, phone or in-person surveys can be used to collect insights from a large number of users.
- **Dedicated Software**: This method, to be used via online platforms or applications, can be used to collect citizens' ideas and needs.
- **Social Media**: Social Media is considered as a lead to improve software development practices.
- **Innovation Ecosystem**: Insights from potential users can also be collected thanks to new user-driven open innovation ecosystems such as Living Labs or Hackathons.
- **Usability tests on prototypes**: This methods allows to present a non-finished software to its potential users to collect feedback and improve it.

User participation has been a key element in e-government research as e-government services affect a whole ecosystem of stakeholders that has to be taken into account during development (Lindgren, 2014). These stakeholders can have different degrees of impact in the development depending on the approach that is followed (Holgersson & Karlsson, 2011): user-centered design (low impact), participatory design (medium impact) and user innovation (high impact). However, despite this wide range of methods and approaches, user participation is not always implemented in practice due to some constraints (lack of time, lack of methodological expertise, or a too complex input to integrate) (Simonofski, Snoeck, et al., 2019a). On the other hand, these methods are sometimes used as a 'silver bullet' hoping that they will solve every development problem (Heeks, 1999). A further analysis of the contextual factors to reach a better situated user participation is thus needed.

6.2.2 Public Values

Different context factors impact the choice to make use of a participation method and the specific choice of a certain type of participation method. Indeed, context factors will impact the behaviour and choices made by the civil servants deciding on user participation methods. These context factors result, among others, from the users' characteristics and motivation (Wijnhoven et al., 2015) the functioning of the public administration (Simonofski, Ayed, et al., 2018) or the stage of the e-government project (Simonofski, Vanderose, et al., 2018). All those external factors will have an impact on the choices made in the development of information systems, so those factors can be considered to be contextual factors impacting the internal choices.

Previous studies focused on context factors such as the motivation of users (Wijnhoven et al., 2015) or the internal challenges of the organization (Simonofski, Ayed, et al., 2018). However, as indicated by Bannister and Connolly (2015) and demonstrated by Chantillon, Crompvoets, and

Peristeras (2018)[24], the relation between public values and e-government policies has been neglected by scholars, both from an organisational and individual, i.e. civil servant, perspective. Also, the relation between public values and participation methods in an e-government context has, to our knowledge, not been researched so far. What has however been researched is the relation between public values and the inclusion of citizens or other users in the co-creation of services. This research has, for example, been undertaken by Jaspers and Steen (2018) and Farr (2016). So, there is clearly an interest in the topic of public values and participation, but there is also a neglect of the relation between public values and participation methods in an e-government context. This constitutes an interesting research gap as participation is considered as key in information systems development. Therefore we decided to focus in this paper on the relation between the public values sought by civil servants and the influence of those public values on participation methods.

In 1951, Kluckhohn (1951) provided one of the first descriptions of a 'value'. The author argued that it is 'a conception, explicit or implicit, distinctive of an individual or characteristic of a group, of the desire which influences the selection from available modes, means and ends of actions' (Kluckhohn, 1951). Whereas this definition correctly points to the higher level rather than individual ideas and thought, the authors' focus lies however only on values in general and not on public values. Bozeman (2009) states that public values provide direction to three relations. It includes "(1) the rights, benefits and prerogatives to which citizens should (and should not) be entitled, (2) the obligations of citizens to society, the state and one another; and (3) the principles on which governments and policies should be based" (Bozeman, 2009, p. 371). This is a highly relevant description as it points to the relation between the public administration and its civil servant in relation to external users, here described as 'citizens'. This description as such makes the connection to new approaches on user participation methods. Indeed, public values do not only have an internal public administration meaning, but are highly important in steering and regulating the relation with society.

We define public values, in line with Bøgh Andersen et al. (2012) as "the ideals, coined as principles, to be followed when producing a public service or regulating citizens' behaviour, thus providing direction to the behaviour of public servants" (Bøgh Andersen et al., 2012, p. 293). In this sense, we distinguish ourselves from papers examining public value as an expected outcome of governmental bodies actions driven by citizens' expectations (Twizeyimana & Andersson, 2019). Our specific interest lies in the public values of the public servants involved

[24] The results were confirmed in the peer reviewed article Chantillon, Crompvoets, and Peristeras (2020), included in this thesis as Chapter 2.

in the development of information systems. Those public values steer the behaviour of public servants, and are as such also expected to influence their decisions on participation methods. Until now, however, and to the authors knowledge, no research has been conducted on what public values, and balances between those public values, influence decisions on participation methods. This paper aims to make a contribution to this fundamental missing link on the relation between the heart of public service and its relation to its users, as "the notion of public values is at the heart of good governance" (Bøgh Andersen et al., 2012, p. 293).

On the basis of recent public values research, a number of public values have been selected, emphasizing three clusters of public values which are expected to influence the decision on making use of user participation methods (Jaspers & Steen, 2018). The first cluster focuses on service delivery. The public servant might decide to include users in order to increase the quality of the service that is provided towards the users. Secondly, there is a cluster on a better relationship between public servants and the users. Focus lies hereby on the respect between both parties in the development of services. The third cluster focuses on the democratic quality and especially the perceived willingness of public servants to ensure better democratic quality. An overview of the different public values that are related to each of those three clusters can be found in Table 6.1.

Table 6.1 – Public Values

Better Services	Better Relationship	Better Democratic Quality
Efficiency	Mutual learning	Participation
Effectiveness	Trust	Empowerment
Quality	Being considerate of clients' needs: accountable, responsive, and transparent	Inclusion
Satisfaction	Being considerate of clients' capacities	Social capital
Sustainability	Reciprocity	
	Individual freedom	

Source: Jaspers and Steen (2018)

It was decided to make use of this typology for three reasons. First of all it is a concise typology which makes it suitable for an exploratory study. Secondly, the typology has been built from theory but has already been used in practice. Finally, and most importantly, the typology was used for research on participation by citizens in the development of services. This topic is closely

related to our research, which makes it highly suitable for application in this research (Jaspers & Steen, 2018).

6.2.3 Theoretical Model

As indicated above, the aim of this exploratory research is to gain a deeper understanding of the relationship between the public values that are sought in an e-government project and the types of user participation methods which are chosen. This logic is represented in Figure 6.1. Our research focuses on the assumption that the choice of a 'User participation Method' is influenced by the 'Public Values' that are sought in an e-government project. As explained above, we relied on the review of Simonofski, Snoeck, and Vanderose (2019b) for the user participation methods and on Jaspers and Steen (2018) for the public values. It is important to underline that within one project several user participation methods can be used. According to us, those different user participation methods can be influenced by the different public values clusters. In order to first explore this theoretical link, we chose to study the influence of public values on user participation methods by analysing quantitatively and qualitatively four projects.

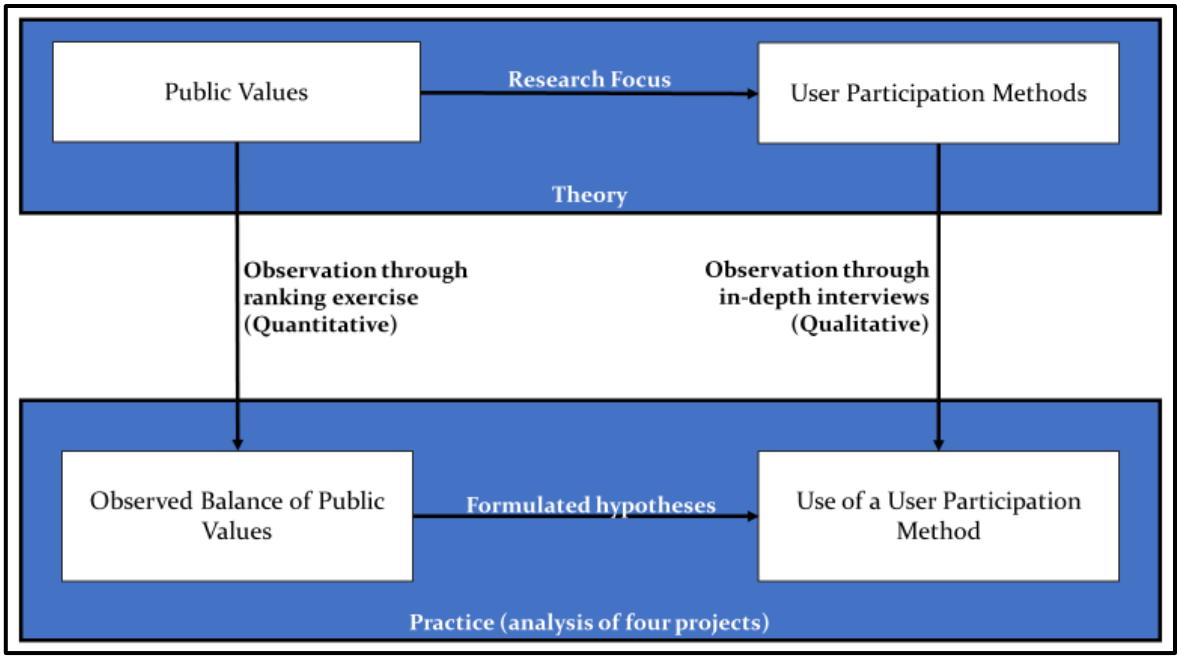

Figure 6.1 – Theoretical Model

6.3 Methodology

In order understand the influence of public values on user participation methods, we performed an exploratory study of four projects to validate the theoretical model previously described

(Stebbins, 2011). We chose these four projects based on three criteria: It is part of an ongoing e-government strategy, we had knowledge about the implementation of participation methods in the project and finally, we knew different members of all four projects.

A multi-case study research method was taken whereby each project was analysed qualitatively thanks to two research tools (1) an in-depth interview with a key stakeholder and (2) a quantitative ranking exercise. A multi-case study approach allows to look at various cases as we assume that there is a relation between public values and participation methods, so the same phenomenon but present in different ways, in various cases (Flyvbjerg, 2006; Yin, 2014). The exploratory nature of this study is a consequence of the lack of empirical research on the influence of public values on e-government service development. It can as such be said that an explanatory multi-case study research approach is taken for this research.

To understand the importance of public values within each project, we performed a quantitative ranking exercise where we presented the interviewees with the different values from Table 6.1 and asked them to rank them in function of their importance they had in the project (see Annex 6.2). We ensure consistency of understandings of the same concepts for all interviewees by providing a definition, based on Jaspers and Steen (2018), and answered questions when needed. To further complete this information, we applied a qualitative approach, with a focus on in-depth interviews. This qualitative information helped to understand the importance of public values, the user participation methods used and the relation between the two. In order to perform the interviews, we designed an interview guide (that can be found in Annex 6.1) following research best practices (Boyce and Neale, 2006). We first asked general questions about the public values and then specific questions about the participation methods. We made intensive use of probing questions in order to gain knowledge about the public values and avoid that the personal values from the interviewees overlapped with the ones driving the project. Furthermore, we also asked probing questions in order to understand the underlying values behind the choice of the methods, how it impacted the success of the project and the implementation of the methods. The interviews were analysed following simple open coding by the authors of this paper (Minichiello et al., 2008). To analyse the interviews, elements of the Grounded Theory approach as described in Mortelmans (2013) were used. Grounded Theory is a well-known research method in qualitative research. It allows for discovering concepts and a fine-grained analysis of the relationships between them, based on the coding of the interview transcripts. In short, it allows for an empirical analysis where data is coded using keywords. For each of the user participation decisions, the identified keywords were categorized into more general concepts (in this case: public values clusters defined by Jaspers and Steen (2018)).

Finally, relationships between these concepts and the participation decisions were induced from the examination of the four cases. In order to identify these relationships, we reported when the identified keywords were explicitly mentioned by the interviewees as having an impact on their decision about participation.

As stated by Johnson, Onwuegbuzie, and Turner (2007), this multi-case study approach applied two research tools (qualitative and quantitative) to have a more informed, complete, balanced and useful research results. The ranking exercise allowed us to have quantitative data about the public values whereas the interviews allowed us to have information about their impact on development practices and user participation methods (Boyce & Neale, 2006) This triangulation of sources improves the validity of the results (Bowen, 2009). The four projects are presented in Table 6.2.

Table 6.2 – Analysed projects

Governmental Body	Governmental Level	Interview date	Function of the Interviewee
Emergency Service ecosystem - National Geographic Institute (Belgium)	Belgian federal level	14/12/2018	Project Manager
City of Namur (Belgium)	Belgian local level	09/01/2018	Head of Data Office
City of La Louvière (Belgium)	Belgian local level	19/12/2018	E-Government Project Manager
City of Linkoping (Sweden)	Swedish Local level	07/12/2018	Head of Digitalization

Even though their number is limited to four, these projects offer an exploratory look in line with the objectives of this study as all participation methods were used and all public values were discussed by the respondents. The **first project** focuses on the analysis of the development process of an emergency service tool for high ranked officials during officials summits in the Brussels Capital Region (Belgium). As a result of the high amount of official summits of the North Atlantic Treaty Organization and the EU the Belgian Federal Public Service Interior Affairs asked for the development of a precise tracking tool to be used by all Belgian partners involved in the organization of those summits. This tracking tool would allow all involved organizing partners to follow the live movements of high ranked officials. The Belgian Crisis Centre, part of the Belgian Federal Public Service Interior Affairs, organized the development of the tool together with the Belgian National Geographic Institute, an external consultant specialized in agile methodologies and ASTRID, a semi-private organization responsible for emergency service communication coordination which is governed by the Belgian Federal Public Service Interior Affairs. The **second project** focuses on the digitalization of the city of

Linkoping in Sweden. The main goal of this project (running since early 2018) is to accelerate the digitalization of the municipality and the companies it owns. Three persons are responsible for this: One head of digitalization at strategic level and two business developers at operational level. At the time of this study, the focus was set on building a framework to ensure the development of a coherent strategy in order to answer to the requirements and needs of its users. The **third project** focuses on the digitalization of the city of La Louvière in Belgium, that is running since February 2017. This project aims at improving the internal functioning of the administration as well as the services offered to the users. Three persons are involved in this project: The head of digitalization, the e-government project manager and the process analyst. The focus lies on the development of an online portal for citizens to use. The **fourth project** focuses on the digitalization of the city of Namur in Belgium, that has been running for more than three year. Here also, the project aims to improve the internal functioning through the development of interoperable applications. The main focus currently lies on the improvement of an open data portal and an end-to-end rethinking of the data flow in the administration. This is handled by the Head of the Namur Data Office in collaboration with the IT department.

6.4 Results

In this section we present the balance between the different public values, both at a clustered and non-clustered level among the four projects. Afterwards, we analyse the user participation method(s) decisions made in the four projects and present the drivers between these decisions as explained by the different respondents.

6.4.1 The Balance of Public Values

In order to answer the research question, which focuses on the relation between public values and user participation methods, it is first important to understand how the different respondents balance the different public values: What are, according to the respondents, the key public values that were sought in the projects they worked on? The respondents were asked to rank the 15 public values, from most important to least important in the e-government project they were working on. By ranking the public values, the respondents also assigned a number of points to each public value: The first public values received 15 points, the second 14 points and so on for the next 13 values. The last value received 1 point. Before going into the public values cluster balance for each individual project, Figure 6.2 presents the aggregated percentages. We obtained this result by calculating the total sum of points for each of the value clusters for the

four projects and by dividing this by the total sum of all value points for the four projects (e.g. 'Better services' (BS) received 181 points in total, this was divided by 420 as this is the total number of points to be divided when ranking the 15 public values – this gives 37% in total). What is immediately clear from this balance is that the highest percentage (42%) is dedicated to the public values that fall in the cluster 'Better relationship' (BR). This is immediately followed by the BS cluster with 37%. The cluster 'Better democratic quality' (BD) only received 20% of the total points. There is as such, for the four projects together, a clear preference for the BR and BS clusters.

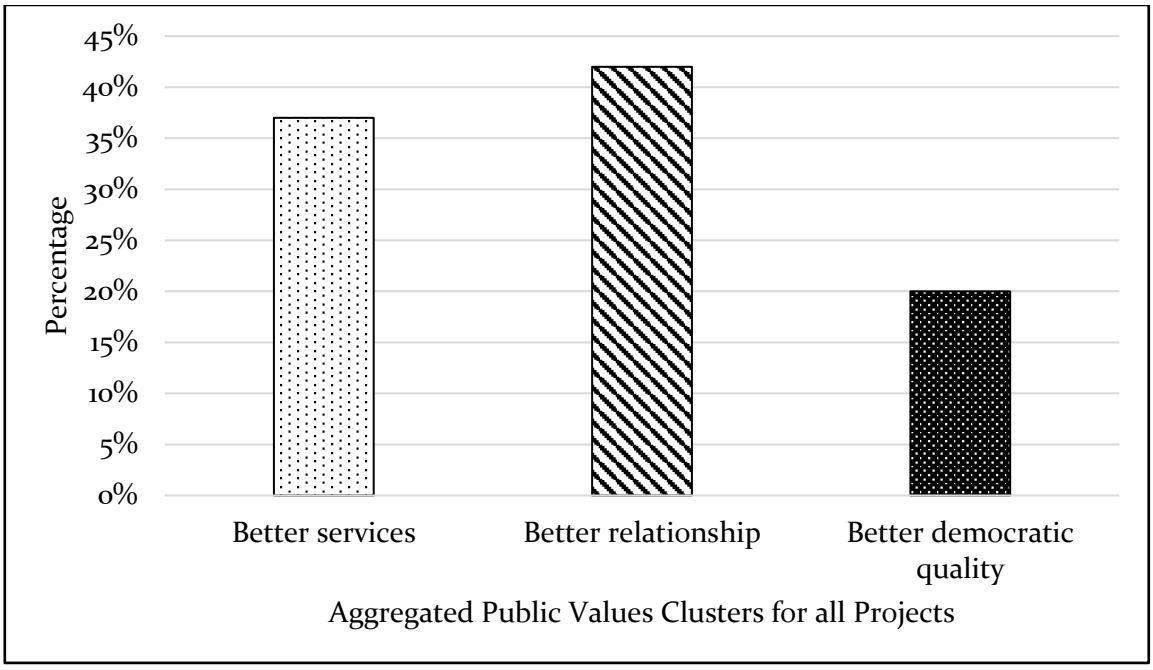

Figure 6.2 – Public Values Clusters

When looking in more detail at the balance of the public values clusters for the four individual projects, as presented in the boxes of Figure 6.3, then it appears immediately that there is not a single public values cluster that receives more than 50% of the points. Secondly, the Digitalization Linkoping project is the only one in which the BS cluster is the one with the highest percentage. The three other projects all three have BR as their main public values cluster. For the Digitalization Namur and the Digitalization La Louvière projects, this cluster is however immediately followed by the BS cluster. Those two projects have as such a more balanced public value approach than the other projects.

6.4.2 Influence of Public Values on User Participation Methods

This section analyses the influence of the public values previously identified on the choice of user participation methods. In Figure 6.3, the reader can find the four cases, the different participation methods that were used in the four projects, the public values cluster driving the

choices (represented by the labels on the arrows) and whether or not the interviewees considered that the chosen method successfully implemented the values they aimed for (**bold** for perceived success and not-bold for perceived failure). These drivers were extracted from the in-depth interviews thanks to the Grounded Theory approach that was used (see 6.3. Methodology). Regarding the implementation of the chosen values, a BD seems to be the hardest to reach as three methods failed to do so according to the interviewees. We won't expand further of the success or not of the methods to focus on why they were used. We must also note that all methods were used in a user-centered design manner where users could give their opinion but the decision-making power remained in the hands of the service provider. This ensured consistency to focus on the methods and not on the degrees of participation.

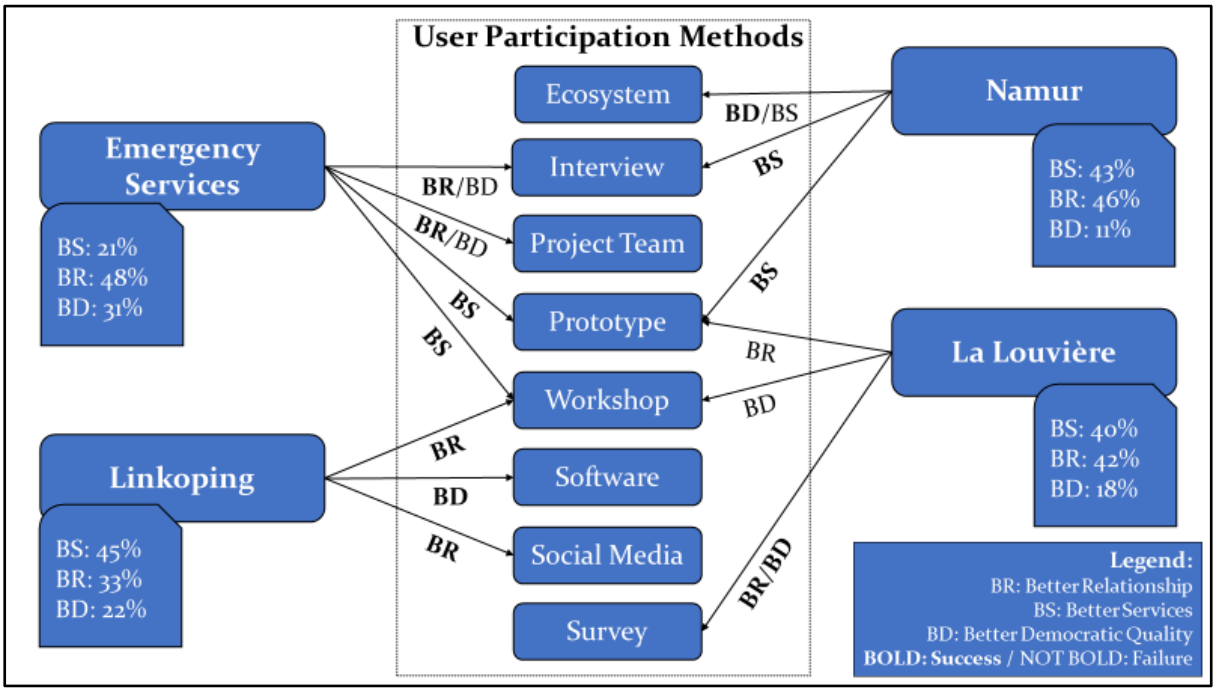

Figure 6.3 – Influence of Public Values on User Participation Methods

The Innovation Ecosystem method was only used by Namur as the city leveraged its open data portals so that students use it to develop applications. It was a mean to increase the participation of users in the public domain (BD) but also a way to collect feedback to improve it (BS). The Interview method was used by two projects. For Namur, it was a means to better understand the requirements of the public servants (BS). For the emergency services project, in contrast, it was performed to increase the participation and empowerment of the different stakeholders (BD), to improve their relationship with them (BR), to create more trust (BR) and to ensure that the team would sufficiently take into account client needs and capacities (BR). The Representation in project team was only used in the Emergency Services Project. It was deemed highly important to be accountable, responsive and transparent towards the users of the tool,

elements which are part of the public value 'being considerate of clients' needs' (BR). Besides being focused on the clients' needs, the team also wanted to be considerate of clients' capacities (BR). Finally, the project team representation allowed to ensure participation (BD) and inclusion (BD). Three projects applied Usability Tests on Prototypes but for different reasons. Namur and the Emergency Services used it as a way to improve the service (BS) whereas La Louvière used it as a way to show citizens that the e-government portal is a viable alternative to more traditional procedures (BR). Three projects applied User workshops but for different drivers. The Emergency Services project applied it to let requirements emerge (BS), Linkoping aimed at mutual learning between operational and strategical public servants for the digitalization strategy (BR) and La Louvière wanted to include people for each department so that they feel a part of the e-government strategy (BD). Only Linkoping used Social Media as a way to improve the information delivery to citizens (BR). Only Linkoping also used Dedicated Software to collect the ideas of citizens to improve the digital strategy (BD). La Louvière used Answer to surveys to let citizens give feedback on the portal and give ideas to improve their digitalization strategy (BD). We must also note discrepancies between the quantitative insights on public values and the drivers for the use of participation methods expressed in the interviews. For instance, the main public value category driving the project of Linkoping is to reach BS. However, in the interviews, they mostly used participation methods to improve the relationships with their users and the democratic participation of citizens.

6.5 Discussion

A first element for reflection is the discrepancy in results between the qualitative interviews in which the respondents made a connection between the public values and the user participation methods and the quantitative public values ranking. Indeed, the results show that the user participation methods used and the public values that were sought are not always connected to the results of the quantitative ranking exercise. This is rather surprising, and underlines the need for more research on this topic. At the same time, we try to provide a first potential explanation for this: The quantitative ranking exercise probes the importance of public values throughout the whole project, whereas the qualitative interviews look to the connection between certain user participation methods and public values, which is a more specific aspect of the project. For the project of La Louvière for example, the first public value to achieve within the overall project was 'effectiveness' (part of BS). In the user participation methods that were applied, emphasis was however put on prototype testing, workshops and surveys which fall,

according to our research results, in different value clusters, i.e. respectively BR, BD and BR/BD. This could partially explain the difference. Another potential explanatory factor is the fact that working on the realization of a certain public values can lead towards the realization of other public values. For example, more trust can lead towards greater effectiveness and / or service quality (Van Dyke, 1962). Finally, a third potential explanatory factor that has to be recognised as well – and that constitutes also a limitation of this research – is related to the possible existence of a social desirability bias related to the respondents answer concerning public values and user participation methods. There is indeed a risk that the interview respondents wanted to demonstrate that a connection exists/existed between the public values and the user participation methods. However, the chance that this social desirability bias played a role is expected to be limited as the interview questions did not point directly to public values, but were more general and included references to the overall project motivation. Secondly, the researchers did not take a position towards the respondents concerning the provided answer(s).

The results also revealed that for some interviewees such as the city of Linkoping, the user participation methods are not considered as an effective way to achieve the main public values driving their projects. However, we argue that it can be an effective way to reach it and we here suggest a decision aid to do so. Therefore, based on the alignment between the balance of values (quantitative) and the methods used (qualitative), we formulate recommendations about the use of specific methods depending on the values driving the organization. We based these recommendations on two sources of insights: (1) the reported success by the interviews in the use of the specific participation methods to reach the targeted cluster of public values and (2) the underpinning of these methods in the scientific literature to reach the targeted cluster of public values. In line with the exploratory nature of this study, these recommendations and 'one-to-one' mappings need to be further validated and by no means exclude other possible mappings between values and suggested methods.

If the organization aims at reaching BS, we recommend the use of interviews or prototyping as they constitutes easy-to-use methods that do not consume a lot of time. Namur, Linkoping and the Emergency Services used these methods to collect insights from the users at low cost quite fast. Interviews allow a better understanding of the business domain, allow to understand the requirements more easily and can be used in the requirements engineering phase easily (Billestrup & Stage, 2014). Prototyping allows a fast presentation of the e-government service to collect feedback on it. If the organization aims at reaching BR, we recommend the use of representatives in the project team, social media or workshops. These methods are more consuming in time but allow for more creative and individual insights gathering. Workshops,

as successfully used by Linkoping, allow to make users discuss with each other and truly express their voice with the aid of innovative techniques such as visualization tools or improvisation principles (Mahaux & Maiden, 2008). The representation in the team allows to give control over the process to lead users. and therefore enables the process to be transparent to them (Chan & Pan, 2008). In the emergency services case, it was an effective way to include representatives from key user groups in the project. Finally, Social Media allows to deliver the information also in a transparent way to the internal and external users. Bonsón et al. (2012) discuss the use of social media in software development. If the organization aims at reaching BD, we recommend the use of surveys, dedicated software or innovation ecosystems. Due to the larger scale of these methods, we formulate the hypothesis that they would be more appropriate to ensure a representativeness in the democratic participation of users. We must however note that some threats to inclusion would still be present (such as possible bias for the digital literacy). de Róiste (2013) provides an example of survey evaluation by users through online, telephone or in person means. The online survey method was used by La Louvière. In terms of dedicated software, Crowd-centric Requirements Engineering (CCRE) platforms can be used to elicit, negotiate and prioritize requirements of the users and could be applied to e-government service development (Snijders et al., 2015). Regarding innovation ecosystems, a lot of successful use cases can be found in literature (Briscoe & Mulligan, 2014). Namur used it successfully to improve its open data strategy. As a next step of the research, a diagnosis questionnaire to know whether or not to go towards participation and which method to use would be a useful decision support aid for practitioners.

6.6 Limitations and Further Research

As indicated at the beginning of this chapter, this work is an experimental study combining both qualitative and quantitative methods to understand the effect that public values have on the use of participation methods. One limitation to this study comes from the limited number of respondents and cases. A higher number of studied cases from different governance levels, countries and participation methods would be welcome to triangulate these results with other studies. Although we agree that a higher number of interviews would have been welcome, we wish to underline that each of those projects was conducted by a small number of stakeholders. As we especially wanted to interview project participants who had been involved since the start of the project and had been in the project 'cockpit', it was necessary to make some concessions on the number of interviews and potential respondents. Another treat to validity comes from

the potential overlap between personal values from the respondent and the public values driving the project. In order to limit this threat, we carefully explained the concept of public values to the respondent and used probing questions intensively.

We suggest that further research on this topic focuses on three aspects. First of all, it would be highly relevant to conduct a number of follow-up interviews. Not only with key figures from the projects, but also with people that were involved in the project as partner or end-user only. Secondly, what we also suggest is to further validate the logic of this study as well as the findings via extra projects in which user participation methods have been used. Thirdly, an extension of the theoretical model introduced in this paper would be welcome. We suggest to examine the possible relationship and mutual influence of the public values factor with other factors that might impact user participation decisions (such as users' characteristics or national culture). We also suggest to analyse the impact of participation methods on the creation of public value to evaluate the outcome of participation (Karunasena et al., 2011; Savoldelli et al., 2013). Finally, whereas this research focused on the impact of public values on the choice for certain types of user participation methods, it would be highly interesting to gain a deeper understanding on the effect of public values on the fact that user participation methods are used at all and to which degree users have gained decision-making power through these methods.

6.7 Conclusion

This Chapter aimed to examine the impact of public values on the choice of user participation methods. The following research question was thereby asked: **How do public values impact civil servants in their selection of user participation methods for the development of e-government services?** By exploring the influence of public values on the choice of user participation methods in an e-government context, this chapter contributes at several levels. We provide an understanding on the impact of three public values clusters (better services, better relationship and better democratic quality) on the use of participation methods. The results show that user participation methods can be implemented differently in function of the underlying drivers. Then, we derive recommendations to practitioners about the appropriate method to use depending on the context and the public values driving the organization. The recommendations can be summarized as follows. If the goal is to reach better services, fast and easy-to-use participation methods can be used. If the goal is to reach a better relationship with users, more creative methods that can extract individual insights can be chosen. If the goal is to reach a better democratic quality, large-scale participation methods with high

representativeness possibilities are advised to be favoured. These contributions will open new leads for further research on the relation between public values and user participation, on the crossroads between public administration research and information systems research.

Section III – Framework & Conclusion

Chapter 7 A governance framework facilitating a digital transformation of the public administration

7.1 Introduction

This chapter aims to provide an answer to the overall research question that was posed in Chapter 1. Introduction: **What governance framework and related factors facilitate a digital transformation of public administration in order to create public value?** A detailed explanation and introduction of the research question and the key concepts can be found in Chapter 1. In the previous chapters, a number of factors (and the relationships between those factors) related to e-governance and e-government policies have been studied. This chapter brings these factors together to create an overarching governance framework for digital transformation in public administrations. This governance framework can inform decision makers on how to further facilitate a digital transformation of public administrations, bearing in mind the overall objective of public administrations to create public value. The governance framework that is presented in this chapter can theoretically speaking be considered to be a *conceptual framework*, i.e. "a network [...] of interlinked concepts that together provide a comprehensive understanding of a phenomenon or phenomena" (Jabareen, 2009, p. 51). The framework provides governance for a digital transformation of the public administration. The framework is therefore named 'Governance Framework facilitating a Digital Transformation of Public Administration' (GoF-DiTPA).

As stated in Chapter 1. Introduction, until today public administrations can only be considered to have undertaken attempts to incorporate an e-government and, in some instances, an e-governance perspective (Scholta et al., 2019; Wouters et al., 2021). The empirical material gathered and presented in this thesis (Chapter 2 to 6) is collected in relation to public administrations undertaking efforts to incorporate an e-government and/or e-governance perspective. Those public administrations cannot be considered to be digitally transformed: While some projects, and the related delivered services and processes, could be thought of as being digitally transformed, it is hard to find any public administration that has a fully transformed governance and services because of the impact disruptive digital technologies have (had) on it (Barcevičius et al., 2019; Curtis, 2019; Gabryelczyk, 2020). Public administrations are, until today, only partially making use of the possibilities offered by disruptive digital technologies (Barcevičius et al., 2019; Curtis, 2019). While this situation makes it highly relevant to study a digital transformation of public administrations, it also leads to a necessary and unavoidable assumption: The fact that there is a lack of digitally transformed public administrations leads to the necessity to gather empirical material from public administrations that can only be considered to have implemented an e-government and/or e-governance

perspective and that are currently undergoing a digital transformation process. In order to be able to build a framework facilitating a digital transformation based on this material, this thesis builds as such on the assumption that a digital transformation is influenced by similar factors as those influencing the inclusion of an e-government and/or e-governance perspective.

Theoretically speaking, and as indicated in Chapter 1. Introduction, several factors are expected to influence a digital transformation of the public administration. Those factors can be related to three layers: The political and institutional layer, the (intra-)organisational and managerial layer, and the technology layer.[25] The factors studied in this thesis can be related to two of the three layers as well as the context in which a public administration functions. A detailed account for this layered approach can be found in Chapter 1. This theoretical perspective led to the theoretical conceptual model that was presented in Chapter 1 and that is reprinted in this chapter as Figure 7.1. The thesis took this theoretical conceptual model as a starting point for the research, and consequently, this model also influenced the conceptual framework GoF-DiTPA presented in this chapter.

For the first layer, the role of public values was studied (see Chapter 2 / Chapter 3), and for the second layer, the role of coordination mechanisms and instruments was studied (see Chapter 3 / Chapter 4). Also, the relationship between public values and coordination was examined to build a bridge between the two layers, as the layers cannot be considered to exists independently from each other (see Chapter 3). From a contextual point of view, the role of multi-level governance (see Chapter 5) and user participation (see Chapter 6) was examined. Figure 7.2 (see below) visually presents the conceptual framework developed in this chapter and includes the above mentioned factors and how they are related to each other. Given that this layered approach is only relevant from a theoretical point of view (see visualisation in Figure 7.1), but not from a practical decision-making perspective, it was decided not to include those layers in the conceptual framework GoF-DiTPA presented in this chapter (see visualisation in Figure 7.2).The layered approach visualised in Figure 7.1 is therefore not included in Figure 7.2.

[25] Ref. Chapter 1 (p. 20): "Given that the expertise concerning the technology layer of a digital transformation is limited, it was decided not to focus on this third layer. This is a limitation of the research that has to be recognised. Leaving this layer out of the research scope of this thesis impacts the governance framework that will facilitate a digital transformation (Gil-Garcia & Sayogo, 2016). However, conducting and including research on the technology layer would be a sign of overestimation of the own capacity. Furthermore, and as with all projects, certain choices need to be made in light of time and possibilities. Unfortunately, the research period has not allowed to devote more resources to the deepening of the capacity on the technology layer."

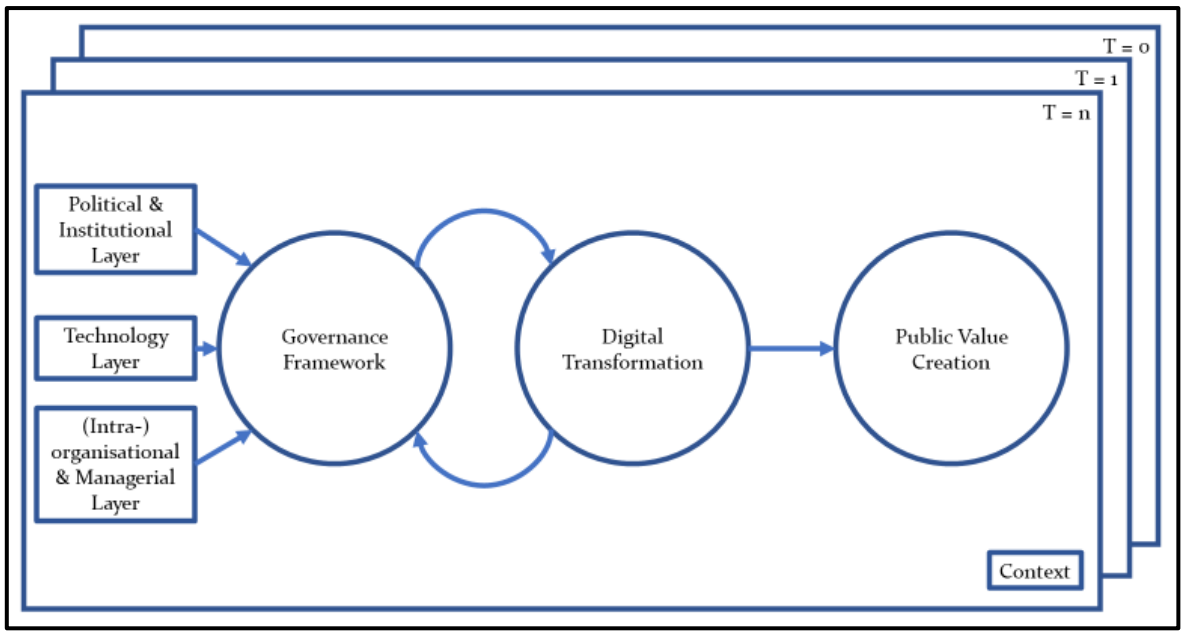

Figure 7.1– Theoretical conceptual model[26]

As demonstrated in the previous chapters, the literature makes a number of assumptions on these factors, albeit without conducting concrete/actual research on the topic. While GoF-DiTPA only focuses on the factors studied in this thesis, it is recognised that also other factors can play an important role in influencing a digital transformation. One can thereby think of factors related to resources – staff capacity and competences, or financial resources – as well as to factors related to the technology layer. Furthermore other contextual factors can influence a digital transformation of a public administration. A very recent example of this is the COVID-19 pandemic, which lead to an overhaul and rapid inclusion of disruptive digital technologies in the medical service provision.

While the academic literature provides numerous types of frameworks for different topics (e.g. theoretical frameworks, assessment frameworks, analytical frameworks, conceptual frameworks (Berman, 2012; Cesar Casiano Flores et al., 2020; Cesar Casiano Flores & Crompvoets, 2020; Coursey & Norris, 2008; Gray & Rumpe, 2017; Lucas & Goh, 2009; Rooks et al., 2017; Schallmo et al., 2017)), the precise meaning of what a conceptual framework is, is unclear. Many authors develop and write about frameworks but most avoid a conceptual clarification of the concept itself (Collins & Stockton, 2018). It is nevertheless important to explain what the concept refers to, as this will lead to conceptual clarity, set the same level of expectations for different readers and support the author in clearly stating the objective of the framework. A framework is defined in Binder et al. (2013) as providing "a set of assumptions, concepts, values and practices that

[26] Note that this figure is a reprint of Figure 1.2 of Chapter 1. Introduction.

constitute the way of viewing the specific reality" (Binder et al., 2013, p. 2). The definition has the strength of clearly stating what is included in a framework. It lacks, however, the relation between the different components that are referred to – e.g. what is the relation between values and practices, or between assumptions and values? While this lack of defined relationships might not be a difficulty for the concept of *framework*, these relationships are nevertheless important for a *conceptual framework* as this precisely aims to grasp a social reality (Jabareen, 2009). This need for conceptual connections in a conceptual framework is also confirmed by Lindgren and Jansson (2013), who argue that reflecting on a framework is not only important to identify the different elements present in a framework, but also to understand the relationships that exist between the elements present in a framework. Also Tan et al. (2021) state this – although in a more indirect way – by referring to a framework as providing "a holistic view", which can be considered to refer to both the components of the framework as well as the relationships between those components (Tan et al., 2021, p. 1). In this regard, the definition of Jabareen (2009) of a conceptual framework is highly pertinent. The author defines it as "a network [...] of interlinked concepts that together provide a comprehensive understanding of a phenomenon or phenomena" – entailing as such also the relation between the concepts (Jabareen, 2009, p. 51). A conceptual framework can provide an understanding of a social reality, without necessarily providing a causal relationship and it takes into account the variation that exists among the different contexts in which the framework can be applied (Jabareen, 2009).

The following sections of this chapter first introduce the approach that was applied to build and validate the conceptual framework, followed by the presentation of the conceptual framework itself.

7.2 Methodological approach

Methodologically speaking the development of this conceptual framework, which provides a comprehensive answer to the main research question, can be considered to follow the traditional path for the development of a conceptual framework (Jabareen, 2009). Four approaches exist for developing a conceptual framework: (1) knowledge based on experience, (2) existing theory/theories, (3) exploratory research, and (4) thought experiments (Collins & Stockton, 2018; Maxwell, 2013, p. 44). Those four approaches have been combined in the development of this conceptual framework, which provides an answer to the main research question of this thesis. In order to avoid a conceptual fragmentation that could inhibit future

theoretical advancements, it was decided to follow the advice advocated for by Trein et al. (2020) and Lieberman (2005) to bring together existing concepts instead of reinventing new ones.

The methodological approach applied for the development of the conceptual framework consisted of three steps. Table 7.1 connects the three research steps to the four theoretical approaches that exist for the development of a conceptual framework. Hereunder those three steps are briefly described.

Table 7.1 – Connecting conceptual framework development theory to the methodological research steps

Theoretical approach for the development of a conceptual framework (Maxwell, 2013, p. 44)	**Connections to the different research steps**
Knowledge based on experience approach	Step 1 / Step 3
Exploratory research approach	Step 1
Existing theory/theories approach	Step 2
Thought experiments approach	Step 3

7.2.1 Step 1: Bringing together research conclusions

In the first step the research results, and in particular the conclusions, of the Chapters 2 to 6 were brought together. Those research results contain the answers to the different sub-research questions presented in Chapter 1. Based on those results a first conceptual framework consisting of a text and visual representation was developed. Also the theoretical conceptual model, presented in Chapter 1 as Figure 1.2 served as a source of inspiration. As Attride-Stirling (2001) argued, such a visual representation helps the reader to gain a better understanding of the components and the relations between the components. This first conceptual framework consisted of the different elements as well as the relations that could be understood on the basis of the conducted research. For example, the research has strongly focused on the factors facilitating a digital transformation – public values, coordination, multi-level governance and user participation – but did not include specific research on the evaluation of the public value creation. Although the elements of public value creation and evaluation are indirectly included in the research presented in the previous chapters, no specific research activities were undertaken for those two elements, and consequently, no results were obtained regarding those concepts.

From a conceptual framework development point of view, this step can be considered as combining the 'Knowledge based on experience approach' and the 'Exploratory research approach' (Maxwell, 2013, p. 44).

7.2.2 Step 2: Supplementing with insights from the academic literature

Based on this first conceptual framework, step 2 was undertaken. The first conceptual framework was supplemented with insights from the academic literature combined with the experience and knowledge gained over the years as a researcher. The focus was specifically on further developing the elements of public value creation and evaluation. Furthermore, also additional literature was reviewed and applied to complement the knowledge on the factors and relationships included in Step 1. The result of this second step has been the development of a second, more refined and detailed, conceptual framework. The text and visualization of this second version were shared with the validation interview respondents in the third step.

From a conceptual framework development point of view, this step can be considered as the 'Existing theory/theories approach' (Maxwell, 2013, p. 44).

7.2.3 Step 3: Framework validation via validation interviews

As a final and third step the conceptual framework has been put to a test via a round of validation interviews. A validation interview can be defined as "a dialogue between interviewee and interviewer intended to confirm, substantiate, verify or correct researchers' findings" (Buchbinder, 2011, p. 107). The validation interview round was organized with six experts with a mixed academic – practitioner background.[27] Those experts were selected on the basis of their experience with the impact of disruptive digital technologies on public administrations. A seventh potential respondent was contacted but declined the invitation due to time limitations.

The six respondents received the text and visualization of the conceptual framework, the summary and the questionnaire for the validation interview. The summary and questionnaire can be found in Annex 7 of this thesis. From each of the interviews an extensive summary was prepared during and after the interview.

The interviews took place within a one week time period and were immediately followed by the coding of the interview data. The data coding started with an open coding approach – consequently no coding scheme was applied – followed by an axial coding approach to detect connections between the topics discussed and the different interviews (Bryman, 2016). This was

[27] The following respondents participated in the validation interview round: Dr. César Casiano Flores (KU Leuven), Mr. Roel Heijlen (Sciensano / KU Leuven), Mr. Rink Kruk (Nationaal Geografisch Instituut van België), Dr. Anthony Simonofski (UNamur), Mr. Jaap-Willem Sjoukema (Wageningen University / Kadaster Nederland) and Mr. Thomas Tombal (UNamur).

followed by an organization of the results on the basis of the different topics discussed (Buchbinder, 2011).

From a conceptual framework development point of view, this step can be considered as a combination of the "Knowledge based on experience approach" and the "Thought experiments approach" (Maxwell, 2013, p. 44).

In the next section, the conceptual framework is presented. In this framework the results of the validation interviews have been included, as a validation interview can not only be used to confirm, substantiate, verify findings, but also to correct findings (Buchbinder, 2011). Whenever there is a modification based on the validation interviews, this is indicated in the text. Also, after the presentation of the conceptual framework an overview of the validation interview results is provided. This overview allows the research to well understand the impact of the validation interviews on the conceptual framework.

7.3 A Governance Framework for a Digital Public Administration

The overall aim of any public administration is to create public value (Beck Jørgensen & Bozeman, 2007; Matt et al., 2015; Moore, 1995; Twizeyimana & Andersson, 2019). This public value can be created via the services offered to users. These services, and the governance processes and structures underpinning them, are thereby to undergo a process of digital transformation. As explained in Chapter 1. Introduction this digital transformation is triggered by the emergence of disruptive digital technologies that emerged and that are being used by society. These disruptive technologies refer to the internet, mobile applications, artificial intelligence, big data, blockchain, cloud computing, integration platforms etc. These disruptive technologies will possibly trigger the public administration actors to start a digital transformation of an already existing governance system and related services. It is this digital transformation that is being facilitated by GoF-DiTPA.

As the aim of the public administration is to create public value, the degree to which public value was/is created can be evaluated in relation to the digital transformation process. This digital transformation process implies a modification of the existing governance framework and related services. This is what Smith and Brooks (2013) consider to be the relation between the governance framework being developed and the *corporate* governance framework (Smith &

Brooks, 2013). It is the digital transformation of this corporate governance framework that is being facilitated by the conceptual framework presented below.

7.3.1 Internal and External Facilitating Factors

This thesis has focused on four factors that can facilitate a digital transformation of the public administration. In this, the alignment of public values as well as the alignment of the overall coordination, via the use of coordination mechanisms and instruments, plays an important role. Public values and coordination are considered to be two governance factors internal to the public administration. Furthermore, a digital transformation is impacted by multi-level governance as well as user participation. The latter two do not necessarily impact digital transformation in a direct way: Both factors can also indirectly influence digital transformation through their impact on the factors of public values and coordination. Multi-level governance and user participation are two governance factors that are external to the public administration. Therefore, and in order to make this differentiation, public values and coordination are labelled in the text as 'Internal Facilitating Factors', whereas multi-level governance and user participation are labelled as 'External Facilitating Factors'. The conceptual framework GoF-DiTPA starts from these four factors and the factors are visualised in the GoF-DiTPA visualisation (see Figure 7.2).

On the basis of the validation interviews, it became clear that the four different factors have a different level of importance in the facilitation of a digital transformation of the public administration. From the framework's perspective, and as **confirmed via the validation interviews**, the role of public values can be considered to be of higher importance than the role of coordination, multi-level governance and participation. The **validation interview respondents underlined** that public values provide direction to the digital transformation and have the possibility to influence the user participation, the use of coordination mechanisms and instruments, and the role of multi-level governance. The reason for this is that the public values are expected to be more fundamentally embedded in the public administrations, its organisations and among the staff. Furthermore, and also **underlined by one of the validation interview respondents**, while technologies can lead to a disruption and the need for a digital transformation, the public values need to steer the direction of the digital transformation.[28] The second most important factor is coordination as it does not only influence the digital transformation, but can also ensure an alignment of the public values.

[28] Among others, this point of view is also reflected in the 2020 EU Ministerial Berlin Declaration on Digital Society and Value-Based Digital Government (EU Ministers in charge of eGovernment Policy and Coordination, 2020).

The other two factors, i.e. user participation and multi-level governance, where deemed highly important as well, but with a lower facilitation degree for the digital transformation then public values and coordination. **Several reasons were mentioned during the validation interviews.** Firstly, the relevance of multi-level governance especially increases if there is an alignment with the striven for public values and/or coordination (Chantillon, Simonosfki, et al., 2020). Secondly, user participation can only take place if the public administration, from a public values perspective is aligned with the idea of user participation. Also, the choice to accept the results of the user participation, depends on a decision taken by the public administration decision makers. Finally, the role of multi-level governance can be considered to depend on the context itself. For example, **it was underlined during the validation interviews** that the effect of multi-level governance is expected to be higher in the Belgian context in comparison to other EU Member States due to the stronger administrative fragmentation. The EU Institutions have the possibility to fill a gap existing among the Belgian public administrations.

The first Internal Facilitating Factor refers to the **public values**, defined in Chapter 2 as "concepts, distinctive of an individual or characteristic of a group, of the desirable which influences the public services offered by the public administration" (Chantillon, Crompvoets, et al., 2020, pp. 281–282). Public values provide guidance to any activity of a public administration, and consequently also to a digital transformation of the public administration. This influence is indicated in Figure 7.2 by Arrow 5. In particular, public values are important for the strategy and vision of the digital transformation aimed for (Chantillon, Simonofski, et al., 2020). The research presented in Chapter 2 demonstrated that there is an overall eclectic balance of public values in the e-government policies of public administrations. Results presented in Chapter 2 demonstrate that, in contrast to what is often proclaimed, the currently striven for public values continue to be focused on what could be labelled mainly as e-government, and partially as e-governance (see also Dunleavy et al. 2006; Margetts and Dunleavy 2013; Torfs, Wayenberg, and Danneels 2021). A digital transformation, however, requires a specific focus on public values that are not only oriented towards New Public Management but also to New Public Governance and Digital Era Governance. Although the results presented in Chapter 2 and 3 demonstrate a shift towards this, the public values related to New Public Management remain to have an important role in the digital policies of public administrations.

While the eclectic presence of public values does not need to be perceived as a problem, but rather as a reality demonstrating the diversity and pluralism of what a public administration aims for, a digital transformation nevertheless requires a specific focus regarding the public values aimed for (Dunleavy et al., 2006, 2008; Margetts & Dunleavy, 2013). Public values provide

an insight in what the public administration strives for in the (near) future. As demonstrated by Jaspers (2021), potential value conflicts, and the need to deal with them, are inherent to a public administration's functioning. Nevertheless, it is important for a public administration to have a long-term perspective and view on the public values aimed for, as those public values will finally influence the offered public services (Bannister & Connolly, 2014; Chen et al., 2020). Furthermore, given that a digital transformation can influence a wide variety of policies (e.g. open data strategies vs. general service delivery strategies) there is need for an overarching view on what public values are aimed for when public administrations go through a digital transformation process. Therefore this might require a role for the political side, to set the boundaries of the public values to be striven for.

Also, and this brings in the connection to coordination, the use of coordination mechanisms and instruments can be useful in ensuring coherence between public values (indicated in Figure 7.2 by Arrow 1): When different organizations within a public administration strive towards a digital transformation of their governance and services, there is a chance for misalignment regarding the public values aimed for in relation to this digital transformation. Coordination, via coordination mechanisms and instruments, can be used for an alignment of the public values aimed for, and as such lead to a shared view on the digital transformation. An example is the Belgian Federal Public Service Policy and Support. This organization within the Belgian federal administration is tasked to coordinate the view on and the digital transformation process of the different organizations within the Belgian federal administration (Chantillon, Simonofski, et al., 2017, 2020). The use of coordination (and coordination instruments) to align the views on public values can be considered to be an indirect effect.

The second Internal Facilitating Factor is **coordination**[29], which has been described in Chapter 3, in line with Bouckaert, Peters, and Verhoest (2010) as "the instruments and mechanisms that aim to enhance the voluntary or forced alignment of tasks and efforts of organizations within the public sector" (Bouckaert et al., 2010, p. 16). Coordination is "used in order to create a greater coherence, and to reduce redundancy, lacunae and contradictions within and between policies, implementation or management" (Bouckaert et al., 2010, p. 16; Peters, 1998). A digital transformation requires an awareness of the need to rethink existing structures, and consequently, also an actual rethinking of the collaboration among organizations. This facilitation influence is indicated in Figure 7.2 by Arrow 6. The research presented in this thesis,

[29] In line with Bouckaert, Peters, and Verhoest (2010) collaboration is considered to be "a subset of coordination" (Bouckaert et al., 2010, p. 17).

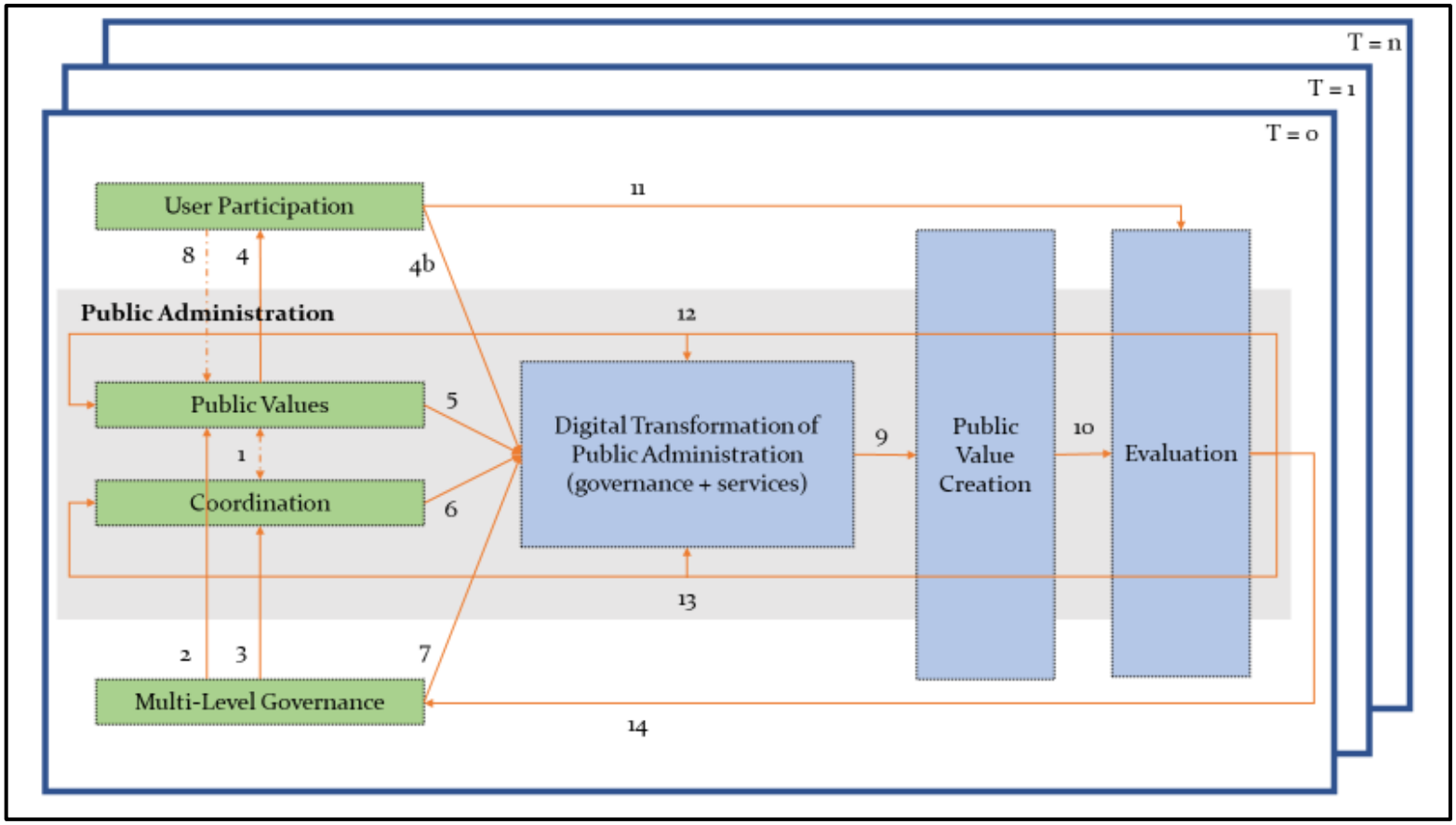

Figure 7.2 – Governance Framework for a Digital Transformation of Public Administration (GoF-DiTPA)

as well as other research (see also Crompvoets et al. 2019; Wouters, Janssen, and Crompvoets 2020), demonstrated that very often organizations within a public administration lack the necessary coordination among them. Therefore, a stronger coordination needs to be guaranteed that can ensure that the digital transformation can take place. As indicated by Chantillon, Crompvoets, and Peristeras (2017) coordination "implies the bringing into a relationship [of] otherwise disparate activities or events" (Chantillon, Crompvoets, et al., 2017, p. 3). GoF-DiTPA therefore advices decision makers to devote specific attention to the use of coordination mechanisms and instruments.

Those coordination mechanisms and instruments can support the overall coherence between different activities and events of the public administration, and can therefore be considered highly important for increasing the potential success of a digital transformation.

Concerning the digital transformation of information systems – for example the redevelopment of existing databases or the development of new e-services – a specific use of an enterprise architecture methodology can be applied. One of the most well-known and applied enterprise architecture methodologies is TOGAF, a methodology that becomes useful once there is an agreed focus on what kind of public values to be striven for (Desfray & Raymond, 2014). The use of TOGAF can facilitate the agreement and redesign of architectural practices within a public administration or among public administrations that align their architectural practices (Desfray & Raymond, 2014; Sidiq & Sumitra, 2019). One can thereby think of the exchange of information across different public administrations: The use of coordination mechanisms and instruments will thereby be relevant to agree on the more abstract elements of the exchange of information, whereas the use of an enterprise architecture methodology (e.g. TOGAF) will make it possible to reflect on and to (re)design the architecture required for the practical exchange of the information.

As indicated in relation to the Internal Facilitating Factor public values, the use of coordination mechanisms and instruments can be an important aspect to support the required coherence of public values. This relationship is visualized in Figure 7.2 by Arrow 1. This thesis, however, demonstrated that the use of coordination mechanisms and instruments on the one hand and the aimed for public values on the other hand are not necessarily aligned with the overall governance approach (see Chapter 3). Coordination mechanisms and instruments included in the digital policies of public administrations refer to what Smith and Brooks (2013) labelled as the corporate governance framework. Public administrations aim to achieve the public values striven for by making use of coordination and related coordination mechanisms and instruments, such as consultative/deliberative bodies, entities for collective decision making or

the regulated markets to name only a few (Bouckaert et al., 2010). While this might lead to a facilitation of the digital transformation, there is a risk for a mismatch between the aimed for public values and the used coordination mechanisms and instruments, undermining the digital transformation process to take place. Therefore, it is necessary that decision makers analyse the alignment between, on the one hand, the striven for public values and on the other hand, the coordination mechanisms and instruments, and reflect on potential needs for other coordination instruments and a broader governance redesign in a digital transformation process (Chantillon, Kruk, et al., 2020; Chantillon, Simonofski, et al., 2020).

Linked to coordination is the External Facilitating Factor **multi-level governance** – indicated in Figure 7.2 by Arrow 3. Multi-level governance refers to a "system of continuous negotiation among nested governments at several territorial tiers – supranational, national, regional and local" (Hooghe & Marks, 2003, p. 234). The increased complexity of society and the varying degree of complexity of state systems, requires coordination among different public administrations. A public administration does not function in isolation, but acts within a wider context compromising different actors, such as other public administrations, stakeholders etc. As discussed and analysed in Chapter 5, the concept of multi-level governance is highly relevant in this context. Also, in Chapter 4, the necessity of using coordination mechanisms and instruments among public administrations was demonstrated: A higher public administration, in the context of this thesis the EU, can impact and stimulate the coordination among public administrations in a national context. Both legally binding and non-legally binding requirements from a higher public administration can influence the coordination among public administrations at Member State level. Legally binding requirements will have a stronger impact. Furthermore, also without the influence of a higher public administration, it is advisable that an aligned approach in the use of coordination mechanisms and instruments is striven for among public administrations, as an alignment is expected to facilitate a digital transformation – of course, only if both administrations aim at a digital transformation (Chantillon, Crompvoets, et al., 2017). The higher the degree of interwovenness between public administrations, the more important coordination becomes. Also, a digital transformation process within one public administration can require the exchange of – for example – data and information with another public administration. Only setting-up tools based on digital technology to facilitate the exchange of data and information will thereby be insufficient: Coordination among the different public administrations is required to increase the success of the undertaken activities.

Besides the relation between coordination, and multi-level governance, there is also a connection between public values and multi-level governance. This is indicated in Figure 7.2 by Arrow 2. Other public administrations conduct similar exercises as the one described above concerning public values. Decisions on which public values to prioritize over others require an internal public administration consultation and deliberation process. As mentioned above, a digital transformation of the public administration will require a connection to (the) other public administration(s). Hence, a public administration needs to be aware of the balance in public values striven for by other public administrations and might consider taking this balance of public values into account as well. The degree of interwovenness between different public administrations as well as the legally binding status of (the) decision(s) taken by (an) other public administration(s) will thereby be important.

Concerning the first aspect (i.e. the relation between multi-level governance and coordination), it can be argued that the higher the degree of interwovenness between public administrations, the more important it is to take the balance of public values of the other public administration into account. Concerning the second aspect (i.e. the relation between multi-level governance and public values), it can be argued that a legally binding decision of a higher public administration provides a lower public administration only with limited leeway. Those two factors potentially impact the public values aimed for. Those public values can either be aligned or not, potentially leading to conflict and the need for conflict resolution in the latter case. For example, the public values striven for in the open data policy developed by the EU were questioned within the Belgian federal administration leading to a public values conflict. This conflict consequently caused a prolongation of the policy implementation (Chantillon, Simonofski, et al., 2017; Chantillon, Simonosfki, et al., 2020). Therefore, GoF-DiTPA advices that a public administration that will be impacted by policies of (an) other public administration(s) related to a digital transformation proactively seeks for an understanding of the public values aimed for by the other public administration(s). If needed, then an alignment can be found in the public values striven for. Thereby, it is advised that this process starts early onwards and that a close internal and external coordination is applied, making use of coordination instruments and mechanisms.

A final aspect related to multi-level governance is the direct impact it may have on the agenda-setting of a digital transformation in another public administration. Research presented in Chapter 4 and Chapter 5 demonstrated that a higher public administration can put (a) certain topic(s) – in this research geospatial data, open data and information sharing – on the agenda of a lower public administration, steering as such the digital transformation of this lower public

administration. A similar effect may take place among public administrations of the same level or lower levels. This is a direct effect of multi-level governance, indicated in Figure 7.2 by Arrow 7. As mentioned during the validation interviews, it has to be underlined that multi-level governance *can* lead to an agenda setting, but that this is not a certainty. Indeed, the public values striven for by a public administration can also be *not* aligned with the objectives set forward by the policy of the other public administrations, leading to a neglect or opposite reaction to this policy.

Another External Facilitating Factor considered to be important for the facilitation of a digital transformation is **user participation** (Hartwick & Barki, 1994; Misuraca, 2009; Simonofski, 2019; Tambouris, 2001). User participation is, in line with Simonofski (2019), defined as "a process that gives [users] the opportunity to influence the decision-making and (administrative) tasks of government" (Simonofski, 2019, p. 11). The involvement of users in the creation and delivery of services and the related governance is considered to have a positive impact on the creation of public value (Jansen & Ølnes, 2016; Lindgren & Jansson, 2013; Simonofski, Vanderose, et al., 2018). **As one of the validation interview respondents mentioned**, the public administration can mishit the ball and user participation can contribute to the avoidance of this problem. Given that the public administration aims to further improve the public value creation via a digital transformation of the public administration, the involvement of users is relevant for a digital transformation process (Sun, 2020). The research presented in Chapter 6 focused specifically on the influence of public values striven for by decision makers in the selection of user participation methods in an e-government context.[30] This influence is visualized in Figure 7.2 by Arrow 4. Given the positive effect that user participation can have on a digital transformation process, it is advised to not only apply user participation methods but also to reflect on what type of user participation methods are deemed relevant from an internal public administration point of view, based on the public values striven for (Chapter 6). The public values that influence a digital transformation process, can also influence the selection of user participation method(s), and consequently the participation, leading to an impact on the digital transformation process. This last relation is indicated in Figure 7.2 by Arrow 4b.[31] Therefore, GoF-DiTPA advises to involve the users in several phases of the digital transformation process, as this helps to ensure a closer alignment between user expectations and the digital transformation of the public administration.

[30] Also, a potential relation exists between participation and coordination. This relationship has not been studied in the thesis and is therefore not included in the GoF-DiTPA.

[31] It was decided to use 4b, and not a new number, to demonstrate the connection between public values, user participation and digital transformation of the public administrations.

A question that arises is whether or not user participation could also have an effect on the public values striven for by a public administration. **The results of the validation interviews indicate** that making use of user participation methods could also impact the balance of public values aimed for, but the impact of public values on the user participation methods is expected to be higher. This is also in line with the results of Chapter 6: It is possible that the user participation methods will influence the public values striven for (by applying a certain methods, the ex-post-user participation public values can indeed be influenced and be different from the ex-ante-user participation public values). However, given the fact that public values – are hard(er) to change, it is expected that the impact of public values on user participation methods is higher than visa-versa .

The impact will however depend on the influence allowed by the public administration for the results of the user participation (Arnstein, 1969). This relation is indicated in Figure 7.2 by Arrow 8. However, the impact of the user participation on the public values can also be indirect via the evaluation of the public value creation and the digital transformation process. This is explained in more detail in the below section of the text on evaluation.

7.3.2 Digital Transformation, Public Value Creation and Evaluation

The Internal Facilitating Factors and External Facilitating Factors can help to facilitate a **digital transformation of a public administration**, if dealt with by decision makers in line with what has been suggested above. Those factors can facilitate the impact and uptake of the disruptive digital technologies by the public administration, which has to rethink and rework the existing corporate governance framework. Again, it is reiterated that the connections in this conceptual framework are an understanding of the social reality, implying the need not to see those facilitating factors as having a causal impact but rather as providing an understanding of how those factors possibly can facilitate a digital transformation of a public administration (Jabareen, 2009).

The digitally transformed governance and services offered by the public administration via this governance framework, can lead to the creation of **public value** i.e. "added value created through activities of public organizations and officials and is 'sometimes presented in terms of normative aspirations for a 'good society'" (Hartley et al., 2017, p. 672; Jaspers, 2021, p. 40). This is indicated in Figure 7.2 by Arrow 9. It needs to be recognised, however, that the aforementioned factors do not unequivocally imply public value creation as many potential hurdles – or other factors – may still need to be dealt with by the public administration – indeed, also a digital transformation can lead to failure in public value creation or to a diminished public

value for some (Fuglsang & Rønning, 2014; Grönroos, 2011; van Acker, 2017). Among those other factors are (an) existing legal framework(s) that inhibit(s) change, cultural resistance within the public administration, a lack of (sufficiently) skilled staff within the public administration, a lack of financial resource, to name a few.

Public value can, theoretically speaking, be created in four domains. It can lead to (1) improved public services, (2) improved administration, (3) improved social value and (4) improved individual value (Osborne et al., 2021; Twizeyimana & Andersson, 2019). Whereas the first two dimensions are related to the digital transformation process of the corporate governance framework, the third dimension takes a broader outside-in perspective. In the third dimension, the attention goes to the social value being created, the trust and confidence in government and the overall well-being of citizens. The last dimension refers to the value being created for the individual, implying that the value can and will only be created if the user makes use of the service offered to him/her by the public administration. The third and fourth dimension are connecting the public administration to its context (Osborne et al., 2021; Twizeyimana & Andersson, 2019, pp. 170–171).

The **evaluation** of a digital transformation process of a public administration takes as the central evaluation objective the public value creation, with a connection to the digital transformation process of the public administration and the relation to the Facilitating Factors. This evaluation follows on the public value creation, indicated in Figure 7.2 by Arrow 10. The digital transformation process and the facilitation mechanisms can be evaluated via their connection to each other and to the public value creation (Castelnovo, 2013; Castelnovo & Simonetta, 2008; Twizeyimana & Andersson, 2019). In line with Gerston (1997) and Howlett, Perl, and Ramesh (2009), evaluation is here defined as an assessment of the approach taken via the facilitating factors to support the digital transformation of the public administration in terms of the perceived intentions and results (i.e. the public value created), taking into account the invested means. **As indicated by some of the validation interview respondents** and by Howlett, Perl, and Ramesh (2009), the evaluation *may* be supported by user participation as the inclusion of users can lead to an improved understanding of the extent to which the digital transformation process lead to value creation for the users. This is indicated in Figure 7.2 by Arrow 11.

Once evaluation has taken place, there is a feedback loop to the digital transformation process as well as to three out of the four Facilitating Factors: the Internal Facilitating Factor public values, the Internal Facilitating Factor coordination and the External Facilitating Factor multi-level governance. This is indicated by the Arrows 12, 13 and 14 in Figure 7.2. Theoretically

speaking, there can be three results from this evaluation. First, the approach taken via the Facilitating Factors continues to facilitate the digital transformation without any change. Second, the approach taken via the Facilitating Factors continues, thereby taking into account any change perceived necessary on the basis of the evaluation. And, third, the approach taken via the Facilitating Factors is abandoned and a new approach is developed.

From an evaluation point of view, it could be argued that an evaluation following as a sequential stage after a digital transformation process is insufficient. As Broucker, Hondeghem, and Steen (2016) as well as Estevez, Lopes, and Janowski (2016) argue, constant monitoring has to be part of the evaluation. It is necessary to not only reflect on an evaluation in retrospect but also to ensure monitoring during the process itself. In this case, the latter relates to the digital transformation process in relation to the Facilitation Mechanisms. Monitoring can be organized during several steps of the digital transformation process and when the digital transformation leads to the creation of public value. If necessary, a modification of the relation between the digital transformation process and the Facilitating Factors might be necessary. From a digital public service perspective, this constant monitoring would be considered to be part of an agile approach (Janssen & van der Voort, 2016; Margetts & Dunleavy, 2013; Mergel, 2016).

Finally, before closing the presentation of GoF-DiTPA, it is important to underline that the digital transformation process of the corporate governance framework, facilitated by the above described Facilitating Factors is a constantly ongoing and endless process. This is indicated in Figure 7.2 by the three time frames, i.e. T = 0, T = 1 and T = n.

7.3.3 Validation Interview Results

As indicated in the methodological section of this Chapter, the results of the validation interviews were included in the conceptual framework presented above. In order for the reader to well-understand the changes made to the conceptual framework on the basis of the validation interviews, an overview of the validation interview results is included here.

Overall, there was an agreement among the different validation interview respondents with the presented conceptual framework. All respondents agreed with the different facilitating factors, the relationships with the other elements (i.e. digital transformation of public administration, public value creation and evaluation) and the various relationships indicated in the framework. Some of the respondents indicated that also other factors, such as unforeseen events or the availability of resources, can facilitate a digital transformation. One of the respondents referred specifically to the COVID-19 pandemic.

Based on the interview results, three refinements have been undertaken to the conceptual framework. First of all, it was indicated by the different respondents that the four facilitating factors can have a different level of importance concerning the facilitation of a digital transformation. There was a general agreement that the Internal Facilitating Factor public values can be considered to be most important. This differentiation in the degree of importance has been included in the conceptual framework.

Secondly, it was indicated by some of the validation interview respondents that the External Facilitating Factor multi-level governance is strongly connected to the Belgian context. In other European Member States, the effect might not be the same. Therefore, this differentiation has also been included in the conceptual framework.

Thirdly, the relation of user participation to the other elements of the model was refined. The validation interview respondents indicated that the External Facilitating Factor user participation will not only be impacted by the Internal Facilitating Factor public values, but that also the user participation can have an impact on the public values striven for in a digital transformation process of the public administration. According to the respondents, and confirmed by the literature, the impact will however depend on the influence allowed by the public administration for the results of the user participation (Arnstein, 1969). Also, it has to be underlined that public values are more fundamental and more strongly enshrined in the organisation, and are therefore more complex to change. This relation has been indicated in Figure 7.2 by Arrow 8 as a dotted arrow. Also related to the user participation is the role that this can have on the evaluation: User participation is expected by the respondents to have an impact on the evaluation. In the conceptual framework visualization this is indicated by Arrow 11 in Figure 7.2.

7.4 Concluding Remarks

While this chapter does not include – on purpose – a conclusion, three final remarks are nevertheless included here. First of all, it is important to underline that the conceptual framework GoF-DiTPA does not imply that a public administration first starts with the Facilitating Factors, impacting a digital transformation process, leading to public value creation and then to the evaluation. A digital transformation is expected to lead to public value creation, requiring an evaluation. However, a public administration can also decide to start with an evaluation of the current situation, leading to the start of a digital transformation process (Lucas

& Goh, 2009). There is as such a cyclical approach included in GoF-DiTPA, but the framework does not describe where to start.

Secondly, a conceptual framework allows to understand social reality, but includes and requires at the same time also a simplification of reality. This simplification implies, for example, that also other factors can facilitate this reality, but that those are not included. This is a shortcoming, but also a reflection of the tension between social reality and academic understanding (Jabareen, 2009). The factors included in the conceptual framework are the factors that have been studied in this thesis. Those factors have received, until today, only limited attention from an academic point of view but can, because of their fundamental importance for a digital transformation, be considered to be highly important. Indeed, other factors could also have been included – such as the role of financial resources, the technical infrastructure or data standards. However, there is already a substantial amount of knowledge on those factors, while the factors studied in this research have only received limited attention.

Thirdly, as this conceptual framework aims to inform decision makers on how to further facilitate a digital transformation of public administrations, a number of practical recommendations are included here. Those practical recommendations are derived from the presentation of the conceptual framework GoF-DiTPA in the previous sections of this chapter.

1. **Related to public values:**
    a. Reflect on the current public values striven for, and how those values are aligned with the objective(s) of a digital transformation process. If required, set-up a trajectory to change the public values within the organisation.
    b. Reflect not only on the public values required for a digital transformation process, but also on how those public values conflict and/or align with other public values steering the behaviour/direction of other policies.
    c. Ensure that there is a coordination approach in the public administration to work on the alignment of public values.
2. **Related to coordination:**
    a. Rethink the organisational structures and collaboration among organisations to ensure that a digital transformation process can be facilitated and reached, thereby working on the structures that define the strategic and practical aspects of a digital transformation.

b. Reflect on the possibility of achieving the public values related to a digital transformation via the available coordination instruments. If the public values cannot be achieved via the coordination instruments, develop strategies to change the available coordination instruments.

3. **Related to multi-level governance:**

   a. Ensure that, as a public administration, the activities of (an)other public administration(s) is/are monitored and that coordination instruments are available for the relation with the other public administration(s). The higher the degree of interwovenness, the stronger the need for coordination.

   b. When possible, set-up sustainable coordination systems, between strongly interwoven public administrations as a digital transformation will require the exchange of data and/or information, or the alignment of public values to be striven for.

4. **Related to user-participation and user-participation methods:**

   a. Ensure that service users are involved in a digital transformation process, as they can contribute to a more suitable digital transformation that aims for the creation of public value.

   b. Reflect on the to-be used user participation methods on the basis of the public values striven for, taking into account the orientation of the public values in relation to the digital transformation process.

5. **Relation to digital transformation, evaluation and public value creation:**

   a. Ensure a well-functioning and suitable evaluation approach, when possible with the input of service users, which allows for an open discussion and, when needed, an impact on the facilitating factors and the digital transformation process.

   b. Develop a monitoring approach (e.g. making use of an agile project approach) that complements the evaluation and that allows for a rapid intervention when desired results are not achieved.

Those recommendations are derived from the previous sections of this chapter, and summarise the main take-aways. They should consequently be considered as guidelines. Finally, it is important to underline that those recommendations have been developed after the validation

interviews and where consequently not tested with experts or decision-makers on their practical use.

Chapter 8 Conclusion

This concluding chapter provides a reflection of the rational and research objective of this thesis, followed by an answer to the main research question as well as the sub-research questions. In addition a reflection on the research and its results are included in this concluding chapter. Finally, this chapter concludes with a number of recommendations for future research as well as for policy and practitioners.

8.1 Reflection on the research

8.1.1 Rationale and research objective

In Chapter 1. Introduction, the overall rational and research objective behind this thesis was introduced and explained. The possibilities offered by technology have been embraced by public administration. When interacting with public administrations as an average citizen requiring a service, one can easily note that public administrations have been working on the inclusion of information and communication technologies in the services offered and the processes used (Chantillon, Kruk, et al., 2020; Chantillon, Simonofski, et al., 2017; Van Veenstra, 2012; Wimmer, 2002). Also a closer look and interaction with public administrations learns that the internal functioning has been redesigned on the basis of the possibilities offered by those technologies (Affisco & Soliman, 2006). More has happened over the years than just a simple rebranding of the (online) office window (Kattel & Mergel, 2019; Mergel et al., 2019). From a service delivery point of view the answer to why this inclusion and consequential redesign of the public administration on the basis of technologies is taking place is simple and complex at the same time. The public administration strives to the creation of public value on the basis of the activities it undertakes and as such makes use of the possibilities offered by digital technologies (Bannister & Connolly, 2018; Hartley et al., 2017; Moore, 1995). Given that the digitalization is also changing the societal context, the societal expectations on this public value are also changing (Simonofski, 2019). A digital transformation of the public administrations arises as such from the changing context in which public administrations find themselves.

Crucial in this logic, is the necessity to understand how a digital transformation process can be facilitated (Karunasena et al., 2011; Luna-Reyes et al., 2016; Moore, 2013; Savoldelli et al., 2013). Like any other change or transformation, also a digital transformation process requires governance (Barcevičius et al., 2019; Nabatchi, 2018; Pollitt & Bouckaert, 2017; Wouters et al., 2020). Important to clarify here is the relation between a digital transformation and public value creation. While public value creation is the overall objective and digital transformation is the

process that contributes to this objective, this thesis has considered a digital transformation as the objective of the study (Van Veenstra, 2012). Nevertheless, and this has been underlined several times, a digital transformation has to be recognised as a process supporting the creation of public value.

As indicated in Chapter 1. Introduction, the problem for current public administrations is that (1) too little is known on what kind of governance and factors can facilitate a digital transformation, and (2) how those factors can facilitate this digital transformation (Barcevičius et al., 2019; Kruk et al., 2019; Mergel et al., 2019; Wouters et al., 2020, 2021). Many factors have been identified as having a potential impact on the transformation of the public administration, but it remains a challenge for public administrations. A digital transformation process will lead to a fundamental revision of the corporate governance framework. This increases the need within any public administration to make use of a governance framework that can facilitate this digital transformation. A number of factors that can facilitate a digital transformation have been extensively studied and described in the academic literature. However, a number of other factors are much less understood. This thesis has focused on acquiring an improved understanding of those factors. In particular attention was devoted to public values, coordination within a public administration, multi-level governance and user participation. As indicated in Chapter 1. Introduction, those factors could be connected to the political and institutional layer, the (inter-)organisational and managerial layer and the context influencing a digital transformation process.

On the basis of this rationale and research objective, the following research question was formulated and studied in this thesis:

What governance framework and related factors facilitate a digital transformation of public administration in order to create public value?

As indicated in Chapter 1 and Chapter 7, this thesis includes an important assumption concerning the factors that can facilitate a digital transformation process and the relation to e-governance and e-government. Given that public administrations can only be considered to have implemented an e-government and/or e-governance perspective and are currently only undergoing a digital transformation process, the empirical material has been gathered from public administrations that have not (yet) went through a digital transformation process. Also the academic literature is strongly focused on e-government and e-governance (Mergel et al., 2019). In order to be able to build a framework facilitating a digital transformation, this thesis builds as such on the assumption that a digital transformation is influenced by similar factors

as those influencing the inclusion of an e-government and/or e-governance perspective. The Chapters 2 to 6 are consequently focused on e-governance and e-government policies, whereas the conceptual framework presented in Chapter 7 is focused on a digital transformation.

In the following section, the answer to this research question will be provided, together with the answers to the different sub-research questions.

8.1.2 An answer to the sub-research questions

In order to provide a detailed and well-grounded answer to the main research question, a number of sub-research questions were formulated in Chapter 1. Introduction. Those questions, and related answers are presented below. First the answers to those different sub-research questions are presented, thereafter, the main research question is answered.

The following sub-research questions were formulated:

1. **What public values are prioritized in the e-government policies of public administrations? (Chapter 2)**
2. **What is the connection between public values and coordination instruments in the e-governance policy of a public administration? (Chapter 3)**
3. **What governance, and specifically what type of coordination, is used in the sector of geospatial data and e-services? (Chapter 4)**
4. **What is the impact of multi-level governance on the e-government policies of a public administration? (Chapter 5)**
5. **How do public values impact civil servants in their selection of user participation methods for the development of e-government services? (Chapter 6)**

In what follows, an answer is provided to the five sub-research questions.

The **first sub-research question focused on the prioritisation of public values in the e-government policies of public administrations**. The research related to this research question was presented in Chapter 2. This research question focused on the facilitating factor public values and can be connected to the political and institutional layer (see Chapter 1). Based on the available literature a public values typology was developed, structured around the three dominant governance approaches: Hierarchy, market and network (Bouckaert et al., 2010; Meuleman, 2008, 2014). This typology was applied to e-government policy documents published by the Belgian federal administration, the United Kingdom central administration and the EU

Institutions in the period 2000 to 2018. The results indicate that market related public values play an important and often dominant role in e-government policy documents. In some e-government policy documents also network related public values have a dominant role, but to a much lower degree compared to the market related public values. Secondly, hierarchy related public values are seldom dominant and are typically the third category of public values found in the e-government policy documents. At the national level, and based on the analysis of the e-government documents from the Belgian federal administration and the United Kingdom central administration, four factors emerged as having an effect on the balance of public values in the policy documents: The emphasis on the overarching governance approach at a given time, the influence of politics, the specific topic of the e-government policy document and the role of the authors. The first two factors were crucial in the Belgian e-government policy documents, the latter two factors were decisive for the UK policy documents. At the EU level, the power distribution among the different actors seems to be of crucial importance. In conclusion, and contrary to what is often claimed in the literature, the public values associated with market related governance have not disappeared, but these values no longer dominate the balance of public values striven for. The e-government policies studied in this Chapter are not focused on a single type of public values related to one governance approach, but include a rather pluralistic public values balance. Misuraca & Viscusi (2015) "expected that the role of government will shift from being a central steering entity to that of a moderator of collective decision-making processes" – which is also expected in a public administration that has undergone a digital transformation process (Misuraca & Viscusi, 2015, p. 318). It can be argued on the basis of those results that this is partially the case. Finally, the balance of public values striven for by public administrations, can provide input in understanding the public value created on the basis of a digital transformation.

Secondly, and following on the first sub-research question, research was conducted to **understand the connection between public values and coordination instruments in the e-governance policy of a public administration**. The results were presented in Chapter 3. This research question focused on the facilitating factor public values and the facilitating factor coordination, and can be connected to both the political and institutional layer and the (intra-)organisational and managerial layer (see Chapter 1). The research focused on the Belgian federal administration and focused on the time period 2004 to 2020. The research results indicate that the balance of public values that is striven for by the public administration on the one hand, and the coordination instruments referred to by the public administration on the other hand, are likely not connected. The results of this case study are as such not aligned with

theoretical expectations. The research findings point in the direction of two influencing factors. The different time perspective of the public values striven for and the coordination instruments seems to have played a key role in relation to those two factors: Public values aim at the future, coordination instruments are grounded in the present. A first influencing factor is the degree of embeddedness of currently used coordination instruments in the public administration and its organisations. Within the Belgian federal administration, this embeddedness was high. Consequently, the willingness to change them was low. A second influencing factor relates to the relationship between the political elite on the one hand and the public administration on the other hand. Both are dependent on each other's support. Modifying how the public administration functions requires the support of the federal organisations and its civil servants. In contrast, deciding on the overall balance of public values to be striven for by the public administration is likely less impactful if sufficient autonomy is allowed for the public administration. At least within the Belgian federal administration e-governance policy, the political elite has likely more impact on the public values to be strived for, whereas the public administration has more influence on the coordination instruments to be used. The central role of those two factors has to some extent been recognised by other authors working on the e-governance of the Belgian federal administration (De Bot, 2015; Kruk et al., 2019; Pollitt & Bouckaert, 2017; Wouters et al., 2020, 2021).

From a digital transformation process perspective, those results contributed to an understanding of the relationship between public values and coordination instruments. A digital transformation leads to a fundamental revision of the public administration, and requires as such an alignment on the public values to be striven for. Coordination can thereby be applied to align those values, but it can also inhibit that values striven for in a digital transformation process are realised.

The **third sub-research question** aimed to **uncover the governance, and specifically the type of coordination, that is used in the sector of geospatial data and e-services**. The results are presented in Chapter 4. The research focused on the Belgian administrations, taking into account the EU context. A connection can therefore also be made to multi-level governance – the concept guiding the research of Chapter 5. This research question can be connected to the (intra-)organisational and managerial layer and the context (see Chapter 1). The theoretical governance model, consisting of three coordination approaches (hierarchy, market and network) of Bouckaert et al. (2010) was used to analyse the current situation. The research demonstrated that the transposition of the INSPIRE Directive (2007) had a rather strong effect on the governance model of the administrations in the Walloon Region, the Brussels Capital

Region and at the federal level. The Flemish Region is an exception as a well-developed governance model already existed since the start of the 21st century, consisting of a mixture of hierarchical and network governance. The Brussels Capital Region administration is characterised by its hierarchical working methods, although the INSPIRE Directive (2007) led to the inclusion of network governance via the GeoBru Committee. In the Walloon administration cooperation slowly started to develop and progress towards a common strategy has been made. A form of network governance can be observed. Although the federal administration was influenced by the INSPIRE Directive (2007), it is still struggling with the strong separation between geospatial data and e-services.

From an intergovernmental perspective, a clear governance model between these four administrations is lacking. Agreements between the three Belgian regions and the federal level have been concluded, but the only effective agreement seems to be the one on patrimonial information (FEDWEB, 2017). The other agreements and related structures have resulted mainly in information-sharing groups.

Geospatial data are exchanged between organisations in the four public administrations and also between organisations of the different public administrations. The National Geographic Institute of Belgium and the Federal Public Service Finance play a key role in the more traditional types of geospatial data, whereas the Agency Digital Flanders takes a central position in sharing and exchanging almost all types of data between organisations. In the Walloon administration, however, there is no organisation that takes such a central position: Data exchange is much less centralised. Also concerning data exchange the INSPIRE Directive (2007) had a strong effect as the transposition has led to governmental obligations to create geoportals. The transition to the development of geospatial e-services across different organisations, however, is still partially lacking within the federal and Walloon public administrations, as the governance models of the Walloon Region and the federal administration can be considered to be immature. The administrations of the Brussels Capital Region and the Flemish Region have well-developed governance structures and are thus able to develop and maintain more well-functioning geospatial e-services.

The intergovernmental situation can be explained by the fact that there is a problem of awareness about what the other administrations and organisations within those administrations are doing. Furthermore, the three regions only work together when they see a clear need for this: There is a strong notion among the regions that they can function separately, without coordinating their policies. Particularly important at the federal level is the lack of political support for geospatial e-services and data, leading to a lack of vision and strategy. Finally, the

federal public administration is characterised by strong organisational independence, leading to a lack of cooperation and coordination among the federal organisations.

Linking those results to a digital transformation process, it has to be underlined that there is an increased recognition of the importance of geospatial data and e-services for the digital transformation of public administrations. It is recognised that location data plays a crucial role in the service delivery of public administrations (Barbero et al., 2019; Latre et al., 2013). While the geospatial domain can be considered as a specific domain, the understanding of the coordination in this domain can contribute to an improved understanding of the importance of coordination for a digital transformation process of a public administration.

The **fourth sub-research question** focused on multi-level governance, and in particular **the impact of multi-level governance on the e-government policies of a public administration**. This research focused on the facilitating factor multi-level governance, and can be connected to the context. A connection can thereby also be made to the political and institutional layer, and the (intra-)organisational and managerial layer (see Chapter 1). The research, presented in Chapter 5, was executed via a qualitative methodological triangulation, combining a document analysis with 35 interviews. The analysis focused on the Belgian federal administrations' inter-organisational information sharing policy and the open data policy.

The results demonstrate that there is a difference in the impact of multi-level governance on those two policies. Whereas the open data policy of the Belgian federal administration is clearly impacted by the decisions taken at the EU level, the situation is different for inter-organisational information sharing. Inter-organisational information sharing is only partially impacted by multi-level governance. From the analysis, it can be deduced that the Belgian federal administration was already actively working on this topic, long before the EU undertook actions. Nevertheless, the EU activities further stimulated the Belgian federal administration to move forward and this has impacted the activities of the Belgian federal administration. Without the EU activities, it seems unlikely that the federal government would have taken action to improve the inter-organisational information sharing. Regarding open data, the Belgian policy has to a strong degree been influenced by the EU activities: The legally-binding EU activities led to the development of an open data policy within the federal administration, although there was strong resistance from within this administration. Multi-level governance has, as such, impacted the Belgian federal policy on open data.

The results demonstrate that within the e-governance policy domain, there is a clear impact of the multi-level governance context in which Belgium, as a EU Member State, functions. The

study of the two specific policies demonstrates that there is however a discrepancy of the impact that multi-level governance has on different domains, whereby the legally binding status of the activities of the EU institutions plays a strong role as well as the possible resistance and/or disagreement at the national Member State level with the policy pushed forward by the EU Institutions. Given that a digital transformation process has a more fundamental impact on the public administration and the relation with the wider environment, the importance of multi-level governance has to be taken into account and can facilitate a digital transformation process.

The **fifth sub-research question** aimed to understand **how public values impact policy makers in their selection of user participation methods for the development of e-government services**. This research question focused on the facilitating factors user participation and public values, and is as such connected to both the context and the political and institutional layer (see Chapter 1). Given the inexistence of research on this relation in the domain of e-governance, the research took a strong exploratory approach. The research started from the realisation that public values are an important factor steering the direction and choices made by civil servants. Therefore, these public values are expected to impact the choice on the type of user participation method. A multi-case study research method was applied, with four case studies being studied via a combination of qualitative and quantitative research methods. A public values typology consisting of three categories, i.e. Better Services, Better Relationship and Better Democratic Quality, was used for the research (Jaspers & Steen, 2018).

The results demonstrate that in the four studied projects, there is a general tendency to strive towards a balance of public values with a dominant focus on a Better Relationship, followed by Better Services. Public values related to Better Democratic Quality generally receive the lowest attention. Concerning the relation between the public values and the user participation methods, it was firstly demonstrated that different public values can lead to the selection of similar user participation methods. Secondly, the respondents did not always perceive the use of certain participation methods to lead to success in relation to the public values that were striven for in the project they worked on. A number of recommendations for practitioners where derived: If the goal is to reach Better Services, fast and easy-to-use participation methods are advised to be used. If the goal is to reach a Better Relationship with users, more creative methods that can extract individual insights are advised to be chosen. Secondly, if the goal is to reach a Better Democratic Quality, large-scale participation methods with high representativeness possibilities are to be favoured. These contributions will open new leads for further research on the relation between public values and user participation, on the crossroads between public administration research and information systems research.

Understanding the relation between public values and user participation methods can facilitate a digital transformation process for decision makers, as they can select specific user participation methods on the basis of the public values they strive for. By making use of user participation methods, a digital transformation process can be facilitated as undesired aspects of the digital transformation can be mitigated via the inclusion of users.

8.1.3 An answer to the main research question

On the basis of the research results presented in the previous chapters (and summarised above), the expertise build up over the years as a researcher, the insights of the academic literature, and the validation interviews with experts with an academic and practitioner background, an answer to the main research question was formulated in Chapter 7 via the presentation of the conceptual framework 'Governance Framework facilitating a Digital Transformation of Public Administration' (GoF-DiTPA). Consequently, this concluding chapter will only briefly present the answer to this main research question.

A public administration functions according to a certain governance approach and delivers services to users with the aim of creating public value (Cordella & Bonina, 2012; Luna-Reyes et al., 2016; Meijer & Bekkers, 2015; Sundberg, 2016). This has been named the corporate governance framework (Smith & Brooks, 2013). Increasingly attention is devoted to a digital transformation of public administrations. Public administrations, and in particular decision makers, require governance to facilitate a digital transformation of the corporate governance framework (Pollitt & Bouckaert, 2017; Steen et al., 2016; Wouters et al., 2020).

The framework that has been suggested in Chapter 7 and that can facilitate a digital transformation of a public administration consists of four interacting facilitating factors, i.e. two internal facilitation factors and two external facilitation factors. The two internal facilitation factors are public values and coordination (and the related coordination mechanisms and coordination instruments). The two external facilitation factors are user participation and multi-level governance. Those facilitating factors can have a direct and indirect effect on the facilitation of a digital transformation. A digital transformation of the public administration is expected to support the creation of public value. This public value creation can have an external (improved social value and improved individual value) and an internal component (improved public services and improved administration) (Moore, 1995; Osborne et al., 2021; Twizeyimana & Andersson, 2019). An evaluation has to take place in order to understand to what extent public value was created, what the role of the digital transformation was in the creation of this public value and how the facilitating factors contributed to this digital transformation (Howlett et al.,

2009). At the same time, it has to be underlined that the evaluation has to contain a monitoring component, to understand already during the digital transformation process and the public value creation if certain aspects require an improvement. Another aspect of GoF-DiTPA is the inclusion of a time perspective: A digital transformation process of the corporate governance framework, facilitated by the four facilitating factors is a constantly ongoing and endless process that strongly depends on the emergence and impact of disruptive digital technologies.

Finally, it is important to underline that it has been recognised from the beginning of this research – and also reflected in the research question via the verb *to facilitate* – that various other factors can facilitate a digital transformation of a public administration. Chapter 1 makes reference to a number of other factors that influence a digital transformation process (Chen & Lee, 2018; Gil-Garcia & Sayogo, 2016; Jonathan, 2020; Klievink & Janssen, 2009; Mergel et al., 2019; Troshani et al., 2018; Wouters et al., 2020). Also in Chapter 7, reference was made to other factors, such as resources and overall capacity but also unforeseen events, such as a pandemic.

Related to this effect of other factors, is the concept of "good enough governance", referred to in Chapter 1 (Grindle, 2004; Rijke et al., 2012). Grindle (2004) understands good enough governance as "accepting a more nuanced understanding of the evolution of institutions and government capabilities; being explicit about trade-offs and priorities for [policies] in a world in which all good things cannot be pursued at once; learning about change from what's working rather than focusing solely on governance gaps; taking the role of government in [policies] seriously; and grounding action in the contextual realities of each country" (Grindle, 2004, p. 526). Bringing the concept of good enough governance in relation to a digital transformation process, has as a consequence that public administrations do not need to hesitate to work on a digital transformation, but should also realise that other policies are important and require action and attention. This makes a digital transformation only one of the many policies. Besides public administrations, also other (external) actors, such as researchers, citizens and business, need to be aware of this reality and accept the possibility for failure in a public administration.

The research results related to public values, coordination and multi-level governance demonstrate that public administrations are indeed – as indicated by the concept of good enough governance – constantly making trade-offs between public values to be striven for, the use of coordination instruments and the inter-related objectives set by different public administrations. Changes in how public administrations function and what public values are striven for will be required to facilitate a digital transformation. However, those changes will only appear incrementally and sometimes not lead to the desired success, which brings in the need for monitoring and evaluation. The conceptual model presented in Chapter 7 has aimed

to bring in this concept of good enough governance, by recognising the interconnectivity between factors, the need for monitoring and evaluation, and the existence of other potentially influencing factors. A digital transformation of public administrations can take place, but is has to be accepted both by public administrations and other (external) actors that this change will be incremental, sometimes also not successful and related to other policies that also require evolution.

8.1.4 Reflections on the research results

This conceptual framework, together with the studies on the different factors and their relations, contributes to an improved understanding of how a digital transformation process in a public administration can be facilitated. The results are relevant from an academic point of view as they contribute to closing a gap in the current knowledge on digital transformation. Furthermore, the results contribute to the work and world of practitioners as they provide insights on often forgotten but crucial factors when it comes to a digital transformation process.

Before discussing, in the next section of this chapter, a number of limitations related to the overall research results, there are furthermore two general reflections that will be discussed in this section. This research has focused on a *digital* transformation of the public administration, leading to two reflection questions: (1) **What makes a digital transformation digital?** and (2) **Can a transformation in public administration, in these times, still be non-digital?** Those reflections and the related questions are the results of working for several years with both researchers and practitioners.

The answer to the first question (**What makes a digital transformation digital?**) consist of two aspects. Firstly, there is the role that the disruptive digital technologies have. Those technologies are triggering public administrations and particularly decision makers to act by undertaking actions to start a digital transformation process. Those disruptive digital technologies are a necessity to speak of a digital transformation (Curtis, 2019; Pollitt, 2010; Van Veenstra, 2012). Secondly, there is the impact of those disruptive digital technologies on the possibilities offered to decision makers in transforming the services offered to users by the public administration(s). Using those technologies in the public administration offers possibilities for redesigning services or for improved monitoring of societal or environmental events, in turn requiring more and different data, the development of authentic/authoritative

data sources, the set-up and agreement on common standards[32], the implementation of interoperability requirements etc. (Wouters & Crompvoets, 2020).

A digital transformation is as such digital because of the disruptive digital technologies. The digital technologies are a crucial factor: Without digital technologies, it would be hard to speak of a digital transformation. The digital technologies are however a trigger for change and not necessarily a direct solution to the difficulties faced by a public administration. The degree to which the digital technologies can be considered to be part of the solution for the difficulties faced by a public administration, depends on the interaction with and between the four facilitating factors – public values, coordination, user participation and multi-level governance. As indicated in Chapter 1, the three layers ((intra-)organisational and managerial layer, political and institutional layer and technology layer), the wider context, and the related factors can influence each other. This relation has been further develop in relation to the factors public values and coordination, the factors public values and multi-level governance, the factors coordination and multi-level governance and the factors public values and user-participation. Also, the validation of the conceptual framework learned that the factor public values is considered to be most important among the different studied factors. Overall, and coming back to the question of what makes a digital transformation digital, the public value creation and especially the evaluation/monitoring of the process to create public value via a digital tranformation, can help in understanding what the role of the digital technology has been.

The answer to the second question (**Can a transformation in public administration, in these times, still be non-digital?**) could simply be that this requires further research. However, a broader reflection on this topic is welcome. As Bannister and Connolly (2014) argued, conducting research on the relation between public values and e-governance is highly important because of the possible impact that this horizontal policy domain has on other policy domains. Bringing this together with the realisation that disruptive digital technologies are influencing many different domains of society as well as public administration policies, it would be hard to argue that a transformation can be non-digital. This brings in the complexity of answering this second question – the effect that the disruptive digital technologies can have on a particular policy domain can differ, depending on factors related to the public administration and the context in which a public administration functions. Instead of considering it as a dichotomy, it is therefore more useful to consider this relation between digital and non-digital

[32] Concerning common standards one could argue that in some cases the lack of common standards is safer – e.g. in order to protect military data(bases) and the information contained in it, it could be better not to work with common standards or to work only with partial common standards.

as a scale: In some instances the transformation will be more digital then in others, and it is most likely not a *yes-or-no situation*.

The conceptual framework developed in this thesis and presented in Chapter 7, is built on research conducted in the e-government/e-governance policy domain. Therefore, the reflections provided in the previous paragraphs should also be read as reflections that can be studied in future research.

8.2 Limitations: Reflections on the study design and research approach

The answers provided to the two questions posed in the previous section also opened the more reflective direction of this concluding chapter. In what follows, a number of general limitations related to the study design and research approach of this thesis are included. As the Chapters 2 to 6 are all published or currently under review[33], they all include a number of specific chapter limitations and reflections. Therefore, no chapter specific limitations and reflections are included here and the focus lies on a number of general reflections related to the thesis.

A first general reflection is related to the **methodological approach** applied for the research of this thesis. As indicated in Chapter 1, the research conducted in the Chapters 2 to 7 followed a mixed methods approach or a qualitative approach. One could argue that a more balanced approach, including also a pure quantitative approach would have strengthened the research. However, the application of those research approaches has always been a deliberate choice resulting from the combined critical realist – pragmatic philosophical approach taken for the research of this thesis: A real-world problem presents itself and requires a studied and researched answer (Bryman, 2016; Saunders et al., 2019).[34] The rather dominant qualitative research logic has also led to a research scope mainly oriented to the Belgian federal administration embedded in the EU. Consequently, questions could be asked about the generalizability of the research results (Guba & Lincoln, 1994; Yin, 1981). Indeed, the combination of a strong qualitative approach with an overall focus on the Belgian federal administration, leads to a lower degree of generalizability.

[33] From those chapters all are published, except for Chapter 3 that is currently under review.

[34] As a reminder, and as indicated in Chapter 1, the different chapters of this thesis are research publications published in light of practice oriented research projects, and in particular BELSPO BRAIN-be FLEXPUB (2016-2020) and BELSPO BRAIN-be DIGI4FED (2020-2021).

Furthermore, the focus on the geospatial domain in Chapter 4 also contributed to this: Geospatial data can be considered as both critical for public administrations and special as "they refer to a location on the earth" (Masser & Crompvoets, 2015; Sjoukema et al., 2017; Vancauwenberghe et al., 2014b, p. 156). It leads however to the question on how special geospatial data and the related e-services and governance are compared to the other types of data that the public administration works with. Concerning the governance of geospatial data, it can be argued that the 2007 INSPIRE Directive has been an important factor for differentiation with other types of data and the related governance, as it provides a legally binding direction for the data and governance (Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 Establishing an Infrastructure for Spatial Information in the European Community (INSPIRE), 2007). Indeed, this legally binding direction provided by a higher public administration is not something to be found for other types of data. Secondly, also within a public administration the governance of geospatial data is often organised more independently from the governance of other types of data. At the same time however, most (e-)services offered by public administrations make use of geospatial data. Also, from a digital transformation point of view there is an increased recognising of the relevance of geospatial data and services as well as the possibilities created by it for the overall digital transformation (Barbero et al., 2019; Latre et al., 2013). Finally, organisations specialised in geospatial data and its management often face similar difficulties (e.g. lack of resources, skilled staff) as those working on other types of data. Overall, it could be argued that the geospatial domain is different from the other types of data and related (e-)services and governance, but this differentiation does not need to be exaggerated and an integration of the geospatial domain into the broader e-governance policy can be observed.

When looking specifically at the GoF-DiTPA, presented in Chapter 7, the four facilitating factors were mainly studied from this Belgian perspective. A generalization of the research results towards other EU countries would still be defendable, but an even broader generalization of the results becomes difficult and questionable. Several reasons exist for this, firstly, there is the theoretical background applied for the research. Most of the research on e-government, e-governance and digital transformation takes a European and/or Western perspective, and the research is consequently expected to be applicable to this European and/or Western context (Drechsler, 2015, 2017). The research conducted in this thesis has built on this European and Western academic literature to gain an improved understanding of a digital transformation. Secondly, from a practical point of view, the various EU Member State public administration have also been influenced by similar logics when it comes to the functioning of public

administration and the e-government and e-governance developments (Pollitt & Bouckaert, 2017). As such, one could argue that the research outcomes from this thesis are relevant from an EU perspective, recognising however the possible dangers enshrined in such (a) generalization(s). For example, when it comes to the facilitating factor of multi-level governance, it was underlined by the respondents that from a Belgian perspective it is highly relevant to include this as a facilitating factor. From a Dutch perspective for example, the validation interview respondents indicated that the relevancy declines. At the same time however, it has to be underlined that legally binding actions of the European Union Institutions will also impact the Dutch public administration(s).

Secondly, and this is a limitation that has already been referred to several times in this thesis, there is the **assumption on the connection between the concept of digital transformation and the concepts of e-government and e-governance** (see Chapter 1 and Chapter 7). Examples from public administrations have demonstrated that until now public administrations are only partially making us of the possibilities offered by disruptive digital technologies, leading to the realization that – until today – no public administration can be considered to have went through a process of digital transformation (Barcevičius et al., 2019; Curtis, 2019). While this was an argument to further study the role that factors can play in facilitating a digital transformation, it also implied that the research and the data collection can only be executed in an environment that went through or is going through what could be called an e-governance or e-government process. Consequently, the assumption was made that a digital transformation process is strongly influenced and facilitated by similar factors as an e-governance or e-government process. Given the more fundamental impact that a digital transformation process has on a public administration and its relations with external non-public administrations actors (see Chapter 1), the attention was therefore devoted to those more fundamental and until now mainly neglected topics – especially when it comes to public values, multi-level governance and user participation.

Thirdly, this thesis takes a **particular and specific view by focusing on a number of factors that can facilitate a digital transformation**. By taking this view, and via the conceptual framework GoF-DiTPA, the image could be created as if those are the only factors that can facilitate a digital transformation. This is not the case. As was indicated in Chapter 1 and Chapter 7, there are various other factors that can also facilitate such a process within a public administration (Klievink & Janssen, 2009; Luna-Reyes et al., 2016; Troshani et al., 2018; Wouters et al., 2020, 2021). By focusing on only some factors that facilitate a digital transformation, a specific and detailed contribution to the academic literature could be made for those factors.

This leads to the question if not more attention had to be devoted to the relations between the four facilitating factors of GoF-DiTPA. However, the individual relations between the different elements have been studied, except for the relation between coordination and user participation. The relation and the interaction between all four factors together has however not been subject to specific research. This could indeed be considered as a shortcoming of this research. Also, and related to this is the role of evaluation in the conceptual framework GoF-DiTPA. Evaluation has an important role in the framework, especially via the impact it has on the digital transformation and the facilitating factors, but has not been studied in great detail in one the chapters of this thesis. At the same time however, the conceptual framework is underpinned not only by the research presented in the previous chapters, but also by the academic literature and validation interviews conducted with experts. Furthermore, not including evaluation in the conceptual framework would have been an even stronger shortcoming, as it constitutes a fundamental part of the public administration functioning (Howlett et al., 2009; Pattyn et al., 2018)

A fourth limitation of this thesis is the **strong public administration orientation** that is taken in the research. Public values, coordination and multi-level governance are three factors focused on (the) public administration(s). Also methodologically speaking those three factors were mainly studied from a public administration point of view: The interviews, focus groups and document analyses were mainly underpinned by material collected via public administrations and civil servants. During the interviews conducted for the research of the Chapters 4 and 5 as well as in the survey of Chapter 4, also private sector actors where involved. Furthermore, Chapter 6 is focused on the role that public values play in deciding on user participation in the domain of e-government, whereby the bridge is also build between the public administration and the non-public administration actors, in particular users of public administration e-services. However, it has to be recognised that the external non-public administration orientation of this thesis, both from a thematic and research perspective is limited.

Fifthly, and this is a more general reflection on the development process of a thesis, it has to be recognised that the **writing of thesis is a process of progression**. The thesis is the result of research conducted over several years. Over the years knowledge, expertise and insights grow, leading to new perspectives and ideas, changes in the research approach and thoughts about methodology. A thesis is, from this perspective, not so much a picture of a certain time but more of an time period, reflecting as such also this growth (or presumed growth?) in knowledge and expertise.

8.3 Recommendations for future research

In line with the previous sections of this chapter, a more general perspective will be given here on recommendations for future research. Specific chapter recommendations are included in the Chapters 2 to 6. The recommendations included in this concluding chapter are therefore all focused on the overall applicability of the conceptual framework GoF-DiTPA. As indicated above, a generalization of the research results towards other EU Member States would still be defendable – although certain risks (for example on the role of multi-level governance) need to be taken into account. An even broader generalization of the results becomes difficult and questionable. Therefore a further testing and expansion of the conceptual framework GoF-DiTPA would be welcome. One can thereby think of a number of tests and expansions, presented hereunder as research recommendations.

A first research recommendations is related to the **contextual and administrative applicability level**. Currently, the framework has been built on research results related to (a) national government(s) and, partially, regional governments, with a dominant focus on the Belgian federal administration (see Chapter 4).[35] The conceptual framework would however benefit from a broader applicability and requires as such also a more general testing and refinement, for example at the local level. Given the lower position of local public administrations in the administrative system, it would be expected that the factor multi-level governance, looked at from a national perspective, is highly relevant at the local level (Gupta, 2007; Hooghe & Marks, 2003). Also, given the closeness of the local administration to the service users, the factor user participation is expected to have a different, and possibly more direct impact at the local level then at higher levels of public administrations (Rodriguez Müller & Steen, 2019; Simonofski, Asensio, et al., 2017). Related to this contextual and administrative applicability is also the European and/or Western perspective – including a non-European and/or Western perspective on this research would be highly beneficial for the general applicability of the conceptual framework (Drechsler, 2015, 2017).

A second domain for expanding the research is related to the **factors**. Multi-level governance is strongly related to the context of the EU and also within the EU the applicability differs as indicated in Chapter 7. The overall use of the concept of multi-level governance could be further studied, both in relation to EU Member States and non-EU Member States, whereby the

[35] Three out of the four case studies in Chapter 6 are related to the local level, so there is a limited connection to the local level as well. However, the conceptual framework GoF-DiTPA is in general underpinned by a national perspective on public administration.

influence of other international organisations on the digital transformation process of public administrations could be studied. One can thereby, for example, think of the impact of the so-called digital government policy of the Organisation for Economic Co-operation and Development or the United Nations (OECD, n.d.; United Nations Department of Economic and Social Affairs, n.d.). Also relevant is the study of public values in relation to the digital transformation of public administrations in non-democratic countries or countries that have a questionable reputation when it comes to democratic standards. While certain countries have a non-democratic nature, they have also undertaken efforts to start a digital transformation process of their public administration. Rwanda for example has undertaken efforts to incorporate disruptive digital technologies in its public administration, with the support of the international community, but the democratic standards of the country can be questioned (Deutsche Gesellschaft für Internationale Zusammenarbeit, 2021; Government of Rwanda, 2019).

Thirdly, also more extensive research on **other factors** facilitating a digital transformation process of public administrations is welcomed. This thesis has focused in particular on four factors, while recognising that also other factors can have an impact on the digital transformation process of public administrations. While most of the factors referred to in Chapter 1 have received substantial attention in the literature, it would be especially relevant to study the possible facilitating role of unexpected (societal) events. Related to the study of those other factors, is also the study of the relation between the factors studied in this thesis and those other factors.

Fourthly, and in line with the limitations referred to above, this thesis took mainly a public administration perspective. The conceptual framework GoF-DiTPA was, consequently, also developed from this point of view. It would therefore be recommended that future research takes a **different research perspective**, by looking at the conceptual framework and in particular the four facilitating factors, from two angles. The first one being a non-public administration perspective on the digital transformation process of public administrations, including citizens, private sector actors and other societal actors. Secondly, it would be relevant to understand those facilitating factors from an individual decision maker perspective and especially how those individual decision makers handle possible conflicts and difficulties, internally and in relation to other decision makers.[36]

[36] This individual decision maker perspective has been partially included in this thesis via the research of Chapter 6, but it remains limited.

Finally, now that a conceptual framework has been developed and given the need – as indicated in the previous paragraphs – to enlarge the scope of its applicability, **a quantitative approach** to further develop and test how the different elements of the conceptual framework are causally related to each other, would be welcomed. As mentioned in Chapter 7, the conceptual framework provides an understanding of a social reality and does not imply causality – which is, from a qualitative research point of view difficult to provide (Jabareen, 2009; Maxwell, 2012). Testing the conceptual framework by making use of quantitative research methodologies would provide a possibility to understand the existence of those causal relationships.

8.4 Recommendations for policy and practice

Besides the research related recommendations, also a number of more policy and practice oriented recommendations are included in this thesis. Also here a more general perspective is taken, as practical recommendations have also been included in the other chapters – especially in Chapter 7, Section 7.4 Concluding Remarks, were a list of practical recommendations related to the conceptual framework GoF-DiTPA was included.

Firstly, it has to be underlined towards decision makers that **a digital transformation process has a wide and far reaching impact on a public administration**. It impacts the governance and services, and as such also the human resources and the external relations of a public administration. A digital transformation requires as such a serious and conscious reflection on the function of a public administration and its relation to society. A digital transformation can be considered as a step towards an improved functioning of the public administration as well as the delivery of services towards users, such as citizens, private sector actors and societal actors. This requires a fundamental reflection on the public values aimed for and the public value to be created: Again, and in line with the concept of good enough governance, it has to be recognised that public administrations also need to deal with and develop other policies than the one focused on digital transformation. However, and as resulted from the public values analysis conducted in this thesis, the results demonstrate that the public values striven for are currently strongly balanced, while a digital transformation process requires a clear focus on a specific set of public values. Related to this is the reflection on (and required need for change regarding) coordination and the use of coordination mechanisms and instruments as those will also steer and facilitate a digital transformation process – not only from an intra-public administration perspective but also from an inter-public administration perspective (i.e. related to multi-level governance). Also, and this requires again an extra effort from public administrations, there is

the need to further invest in the inclusion of service users in the process of a digital transformation, as those can support the transformation process and make it more sustainable. Finally decision makers in EU Member States are advised to closely monitor the activities taking place at the level of the EU, as those activities can strongly influence the digital transformation in Member States.

Secondly, decision makers are advised to **consider a digital transformation as an ongoing and never ending process**, depending on the development and uptake of new disruptive digital technologies in and by society. Certain factors can facilitate such a digital transformation, but decision makers – and service users, citizens, business and societal actors – need to realise that not all factors can be controlled. A total and full control of the digital transformation is not possible, and does not need to be aimed for (ref. good enough governance). Crucial in this regard is the need to recognise that some factors cannot be changed and/or influenced (or it becomes highly difficult), such as the effect of the EU on the Member States.

A third recommendation is not oriented towards decision makers, but towards user – think of citizens, societal organisations or businesses. While societal organisations and business have, generally speaking, a stronger tradition in liaising with public administration on the services desired by them, citizens are much less inclined to participate in user participation activities organised by public administrations. Therefore, and if citizens aim for an improved public value creation via a digital transformation process, it is advised that **citizens take up an active user participation role** via user participation methods – of course, if made possible by public administrations.

Finally, it has to be underlined and reiterated that the **research included in this thesis is strongly connected to practice oriented research projects** conducted for the Belgian federal administration and the European Commission. Those practice oriented research projects have been executed with the specific aim of providing public administrations and civil servants with practical recommendations and advice on how to organize the governance and services of the public administration in an era dominated by disruptive digital technologies. Whereas the connection between on the one hand this thesis and its academically oriented research, and on the other hand the practice oriented research projects might not always be directly visible, there has been a strong cross-pollination between the two. Therefore, it is not only relevant to include recommendations for policy and practice in this thesis, but also to make a specific reference to this practice oriented research, in particular BELSPO BRAIN-be FLEXPUB project (2016-2020), BELSPO BRAIN-be DIGI4FED project (2020-2021), European Commission ISA² – Directorate General CONNECT European Interoperability Framework for Smart Cities

and Communities project (2020-2021), European Commission Joint Research Centre ELISE – Public Service & Public Value(s) project (2021) and European Commission ISA² Legal Interoperability project (2019-2020). Those different projects led to tangible and directly usable recommendations for public administration decision makers that are, among others, underpinned by the research results presented in this thesis.

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Annexes

Annexes to Chapter 2. Prioritizing public values in e-government policies: A document analysis

Annex 2.1 – List of Selected and Analysed Belgian federalised Documents

Analysed	ID	Document Title	Status [37]	Author	Publication Year
Yes	BE2000	Algemene Toelichting Begroting voor 2001	NL	Government / Administration	2000
Yes	BE2001	Algemene Toelichting Begroting voor 2002	NL	Government / Administration	2001
No		Algemene Toelichting Begroting voor 2003	NL	Government / Administration	2002
No		Algemene Toelichting Begroting voor 2004	NL	Government / Administration	2003
Yes	BE2004	Algemene Toelichting Begroting voor 2005	NL	Government / Administration	2004
Yes	BE2004(2)	Beleidsnota informatisering	NL	Cabinet / Administration	2004
Yes	BE2005	Beleidsnota informatisering	NL	Cabinet / Administration	2005
Yes	BE2006	Beleidsnota informatisering	NL	Cabinet / Administration	2006
No		Algemene Beleidsnota van de minister voor Ondernemen en Vereenvoudigen	NL	Cabinet / Administration	2008
No		Algemene Beleidsnota van de minister voor Ondernemen en Vereenvoudigen	NL	Cabinet / Administration	2008
No		Algemene Beleidsnota Ondernemen en Vereenvoudigen	NL	Cabinet / Administration	2009
Yes	BE2011	Verantwoording uitgaven FOD FEDICT	NL	Cabinet / Administration	2011

[37] The abbreviations in the column 'Status' refer to legally binding documents = L and non-legally binding documents = NL.

Yes	BE2011(2)	Beleidsnota Administratieve Vereenvoudiging	NL	Cabinet / Administration	2011
Yes	BE2012	Beleidsnota Administratieve Vereenvoudiging	NL	Cabinet / Administration	2012
No		Algemene Beleidsnota Administratieve Vereenvoudiging	NL	Cabinet / Administration	2013
No		Algemene Beleidsnota Digitale Agenda, Telecommunicatie en Post	NL	Cabinet / Administration	2014
No		Algemene Beleidsnota Internationale Ontwikkeling - Digitale Agenda	NL	Cabinet / Administration	2015
No		Algemene Beleidsnota Digitale Agenda 2017	NL	Cabinet / Administration	2016
Yes	BE2017	Algemene Beleidsnota Digitale Agenda, Telecom en Post 2018	NL	Cabinet / Administration	2017

Annex 2.2 – List of Selected and Analysed United Kingdom Documents

Analysed	ID	Document Title	Status[38]	Author	Publication Year
Yes	UK2005	Connecting the UK: the Digital Strategy	NL	Government / Administration	2005
Yes	UK2005(2)	Transformational Government Enabled by Technology	NL	Government / Administration	2005
No		Digital Britain - The Interim Report	NL	Government / Administration	2009
No		Working Together - Public Services on your side	NL	Government / Administration	2009
Yes	UK2011	Government ICT Strategy	NL	Government / Administration	2011
No		Government ICT Strategy - Cloud Strategy	NL	Government / Administration	2011
Yes	UK2011(2)	Government ICT Strategy - Government End User Device Strategy	NL	Government / Administration	2011
No		Government ICT Strategy - Government ICT Capability Strategy	NL	Government / Administration	2011
No		Government ICT Strategy - Greening Government - ICT Strategy	NL	Government / Administration	2011
No		UK Open Goverment Action Plan 2011-2013 – Enhancing public service delivery through open government	NL	Government / Administration	2011
Yes	UK2013	Government Digital Strategy	NL	Government / Administration	2013
Yes	UK2013(2)	Open Government Partnership UK National Action Plan 2013 to 2015	NL	Government / Administration	2013
Yes	UK2016	UK Open Government National Action Plan 2016-2018	NL	Government / Administration	2016

[38] The abbreviations in the column 'Status' refer to legally binding documents = L and non-legally binding documents = NL.

Annex 2.3 – List of Selected and Analysed EU Documents

Analysed	ID	Document Title	Status	Author[39]	Publication Year
No		Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information	legal	EC / CoM / EP	2003
No		Proposal for a Decision of the European Parliament and of the Council on Interoperable Delivery of pan-European eGovernment Services to Public Administrations, Businesses and Citizens (IDABC)	non-legal	EC	2003
Yes	EU2004	Decision 2004/387/EC of the European Parliament and of the Council of 21 April 2004 on interoperable delivery of pan-European eGovernment services to public administrations, businesses and citizens (IDABC)	legal	EC / CoM / EP	2004
Yes	EU2006	Communication from the Commission to the Council and the European Parliament Interoperability for Pan-European eGovernment Services	non-legal	EC	2006
Yes	EU2007	Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)	legal	EC / CoM / EP	2007
No		Proposal for a Decision of the European Parliament and of the Council on interoperability solutions for European public administrations (ISA)	non-legal	EC	2008
No		Decision no 922/2009/EC of the European Parliament and of the Council of 16 September 2009 on interoperability solutions for European public administrations (ISA)	legal	EC / CoM / EP	2009

[39] The abbreviations in the column 'Author' refer to: European Commission = EC, Council of Minister = CoM and European Parliament = EP.

No		Ministerial Declaration on eGovernment approved unanimously in Malmö, Sweden, on 18 November 2009	non-legal	EU Member States	2009
Yes	EU2010	Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – Towards interoperability for European public services (+ Annex 1 / Annex 2)	non-legal	EC	2010
No		Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – The European eGovernment Action Plan 2011-2015 – Harnessing ICT to promote smart, sustainable & innovative Government	non-legal	EC	2010
Yes	EU2013	Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information – Amended by: Directive 2013/37/EU of the European Parliament and of the Council of 26 June 2013	legal	EC / CoM / EP	2013
Yes	EU2014	Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC (eIDAS Regulation)	legal	EC / CoM / EP	2014
No		Decision (EU) 2015/2240 of the European Parliament and of the Council of 25 November 2015 establishing a programme on interoperability solutions and common frameworks for European public administrations, businesses and citizens (ISA2 programme) as a means for modernising the public sector	legal	EC / CoM / EP	2015
Yes	EU2016	Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – EU eGovernment	non-legal	EC	2016

		Action Plan 2016-2020 –Accelerating the digital transformation of government			
No		Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)	legal	EC / CoM / EP	2016
Yes	EU2017	Tallinn Declaration on eGovernment at the ministerial meeting during Estonian Presidency of the Council of the EU on 6 October 2017	non-legal	EU Member States	2017

Annex 2.4 – Public Values Analysis – Coding Scheme

	Public Value (English)	Public Value (Dutch)	Description	Origin
Hierarchy-related Public Values				
	Responsibility to the citizen	Verantwoordelijkheid ten aanzien van de burger	The state or fact of having a duty to deal with citizens or of having control over citizens	Bannister & Connolly (2014)
	Responsibility to the elected politicians of the day	Verantwoordelijkheid ten aanzien van de op dat ogenblik verkozen politici	The state or fact of having a duty to deal with elected politicians or of having control over elected politicians	Bannister & Connolly (2014)
	Compliance with the law	Naleving van de wet	The state or fact of according with or meeting rules or standards of a particular country or community which regulate the actions of its members and which may be enforced by the imposition of penalties	Bannister & Connolly (2014)
	Accountability to government	Verantwoordelijkheid ten aanzien van de regering	The fact or condition of being responsible to government	Bannister & Connolly (2014)
	Rectitude	Rechtschapenheid	Morally correct behaviour or thinking.	Bannister & Connolly (2014)
	Responsibility to the enterprises	Verantwoordelijkheid ten aanzien van de ondernemingen	The state or fact of having a duty to deal with enterprises or of having control over enterprises	Personal Addition
	Responsibility to societal organizations	Verantwoordelijkheid ten aanzien van maatschappelijke organisaties	The state or fact of having a duty to deal with societal organizations or of having control over societal organizations	Personal Addition

	Protecting citizens from exploitation	Beschermen van burgers tegen uitbuiting	Keeping citizens safe from potential harm or injury as a result of treating them unfairly in order to benefit from their work	Bannister & Connolly (2014)
	Protecting citizen security	Beschermen van burgerveiligheid	Keeping citizens safe from harm or injury due to danger or threat	Bannister & Connolly (2014)
	Protecting enterprise security	Beschermen van ondernemingsveiligheid	Keeping enterprises safe from harm or injury due to danger or threat	Personal Addition
	Protecting societal security	Beschermen van de maatschappelijke veiligheid	Keeping society safe from harm or injury due to danger or threat	Personal Addition
	Impartiality	Onpartijdigheid	Equal treatment of all equals or fairness	Vrangbæk (2009)
	Political loyalty	Politieke loyauteit	Giving or showing firm and constant support or allegiance to the political level	Vrangbæk (2009)
	Judicial values / due process	Juridische waarden / gepast process	The value of fundamental fairness requiring procedures designed to protect individual from malicious, arbitrary, erroneous, capricious, or unconsitutional deprivation of life, liberty, or property by the government.	Vrangbæk (2009)
	Accountability towards society in general	Verantwoordelijkheid & aansprakelijkheid ten aanzien van de gehele maatschappij	The fact or condition of being responsible to society in general	Vrangbæk (2009)
Market-related Public Values				
	Efficient use of public funds	Efficiënt gebruik van publieke fondsen (OF kapitaal OF geld OF middelen)	Achieving maximum productivity of public funds with minimum wasted effort or expense of public funds	Bannister & Connolly (2014)

	Economy/parsimony	Zuinigheid	A careful management of available resources	Bannister & Connolly (2014)
	Service to the citizen in his/her different roles	Dienen van de burger in zijn/haar verschillende rollen	The action of helping or doing work for citizens	Bannister & Connolly (2014)
	Respect for the individual	Respect voor het individu	Due regard for the feelings, wishes, or rights of others	Bannister & Connolly (2014)
	Responsiveness	Ontvankelijkheid	The quality of reacting quickly and positively	Bannister & Connolly (2014)
	Effectiveness	Doeltreffendheid	The degree to which something is successful in producing a desired results	Bannister & Connolly (2014)
	Efficiency	Efficiëntie	Achieving maximum productivity with minimum wasted effort or expense	Bannister & Connolly (2014)
	Service to the enterprises	Dienen van de ondernemingen	The action of helping or doing work for enterprises	Personal Addition
	Service to the societal organizations	Dienen van de maatschappelijke organisaties	The action of helping or doing work for societal organizations	Personal Addition
	Satisfying user's needs	Voldoen aan de gebruikersnoden	Giving fulfilment of user's needs	Vrangbæk (2009)
	Productivity	Productivteit	The state or quality of achieving a significant amount or result	Vrangbæk (2009)
	Innovation orientation	Innovatiegericht	The action or process of making changes in something established, especially by introducing new methods, ideas, or products.	Vrangbæk (2009)
	Service orientation	Dienstgericht	Oriented towards the action of helping or doing work for someone.	Vrangbæk (2009)

Network-related Public Values				
	Inclusiveness	Inclusiviteit	The quality of covering or dealing with a range of subjects or areas	Bannister & Connolly (2014)
	Equality of treatment and access	Gelijkheid van behandeling en toegankelijkheid	The state of being equal with regards to treatment and access to the administration, and its services in particular	Bannister & Connolly (2014)
	Consulting the citizen	Raadplegen van de burgers	Seeking information from citizens	Bannister & Connolly (2014)
	Consulting enterprises	Raadplegen van de ondernemingen	Seeking information from enterprises	Personal Addition
	Consulting societal organizations	Raadplegen van de maatschappelijke organisaties	Seeking information from societal organizations	Personal Addition
	Balancing different interests	Balanceren van verschillende belangen	Ensuring that different interest are equal or in correct proportions	Vrangbæk (2009)
	Develop networks	Ontwikkelen van netwerken	Creation and growing of an arrangement of intersecting horizontal and vertical lines between organizations and actors	Vrangbæk (2009)
	Consulting other administrative levels	Raadplegen van andere administratieve niveau(s)	Seeking information from other administration(s).	Personal Addition

Annex 2.5 – Public Values Analysis – Data

The below tables includes the references to public values per analysed document.

Belgium:

	Case ID									
	BE2000	**BE2001**	**BE2004**	**BE2004 (2)**	**BE2005**	**BE2006**	**BE2011**	**BE2011(2)**	**BE2012**	**BE2017**
Hierarchy-related Public Values										
Accountability to government	0	0	0	1	0	2	0	1	0	1
Accountability towards society in general	0	0	4	1	1	2	0	0	0	1
Compliance with the law	0	2	2	4	0	0	0	2	1	4
Impartiality	0	0	1	0	0	0	0	0	0	0
Judicial values / due process	0	0	1	0	0	0	0	0	0	0
Political loyalty	0	1	0	0	0	0	0	1	0	0
Protecting citizen security	2	2	6	5	7	9	0	0	2	10
Protecting citizens from exploitation	0	0	2	1	3	6	0	0	1	5
Protecting enterprise security	2	2	4	5	3	4	0	0	1	10
Protecting societal security	2	2	5	1	3	5	0	0	1	9
Rectitute	0	0	3	0	0	2	0	0	0	1
Responsibility to societal organizations	2	2	5	3	3	5	0	0	0	6
Responsibility to the citizen	2	4	7	4	8	10	0	2	1	6
Responsibility to the elected politicians of the day	0	0	1	1	0	0	0	0	0	0
Responsibility to the enterprises	2	4	5	3	4	6	0	3	4	7
Total	**12**	**19**	**46**	**29**	**32**	**51**	**0**	**9**	**11**	**60**

Market-related Public Values										
Economy/parsimony	0	0	0	0	0	0	0	0	0	0
Effectiveness	4	1	3	1	0	1	0	1	0	0
Efficiency	8	3	17	4	1	9	0	6	3	7
Efficient use of public funds	2	0	2	2	0	0	0	1	0	3
Innovation orientation	1	5	24	7	3	8	0	3	2	12
Productivity	1	0	6	1	2	4	0	1	1	1
Respect for the individual	0	0	3	0	0	2	0	0	0	0
Responsiveness	0	1	1	0	0	0	0	0	0	0
Satisfying user's needs	3	7	27	15	1	15	0	9	7	12
Service to the citizen in his/her different roles	2	6	19	7	5	12	0	7	2	9
Service to the enterprises	2	4	9	11	6	9	0	8	6	8
Service to the societal organizations	2	0	7	4	2	4	0	2	0	4
Total	**25**	**27**	**118**	**52**	**20**	**64**	**0**	**38**	**21**	**56**
Network-related Public Values										
Balancing different interests	0	0	0	0	0	1	0	0	1	3
Consulting enterprises	1	0	4	1	4	5	0	2	6	9
Consulting other administrative levels	0	0	0	0	0	11	0	2	2	9
Consulting societal organisations	0	0	3	1	0	7	0	1	1	3
Consulting the citizen	0	0	2	1	2	1	0	1	0	1
Develop networks	8	5	17	9	5	10	0	4	11	20
Equality of treatment and access	0	0	2	0	0	2	0	0	0	1
Inclusiveness	0	0	12	0	6	10	0	1	0	2

Total	**9**	**5**	**40**	**12**	**17**	**47**	**0**	**11**	**21**	**48**

United Kingdom:

	Case ID						
	UK2005	**UK2005(2)**	**UK2011**	**UK2011(2)**	**UK2013**	**UK2013(2)**	**UK2016**
Hierarchy-related Public Values							
Accountability to government	0	1	8	0	3	0	4
Accountability towards society in general	0	1	8	0	3	21	15
Compliance with the law	2	2	1	5	3	6	8
Impartiality	0	0	0	1	0	0	4
Judicial values / due process	1	0	4	0	1	5	6
Political loyalty	0	3	1	0	0	1	0
Protecting citizen security	6	3	6	2	2	3	1
Protecting citizens from exploitation	4	0	1	1	0	0	0
Protecting enterprise security	5	2	6	2	2	2	1
Protecting societal security	5	2	6	2	1	2	1
Rectitute	5	4	3	0	7	14	11
Responsibility to societal organizations	6	2	0	5	5	7	9
Responsibility to the citizen	16	6	0	5	11	12	10
Responsibility to the elected politicians of the day	1	1	0	3	2	0	2
Responsibility to the enterprises	7	4	1	4	7	10	9
Total	**58**	**31**	**45**	**30**	**47**	**83**	**81**
Market-related Public Values							

Economy/parsimony	3	6	11	19	8	0	2
Effectiveness	3	12	7	4	9	3	4
Efficiency	9	12	10	8	16	4	5
Efficient use of public funds	3	9	13	20	12	6	4
Innovation orientation	20	18	16	8	16	10	22
Productivity	1	0	4	5	2	0	2
Respect for the individual	6	5	0	0	2	0	0
Responsiveness	7	0	4	1	2	0	0
Satisfying user's needs	9	15	19	2	25	4	11
Service to the citizen in his/her different roles	10	7	7	0	9	8	9
Service to the enterprises	5	8	17	4	13	10	10
Service to the societal organizations	2	0	0	0	4	1	8
Total	**78**	**92**	**108**	**71**	**118**	**46**	**77**
Network-related Public Values							
Balancing different interests	0	3	3	4	7	2	3
Consulting enterprises	12	7	16	4	13	14	16
Consulting other administrative levels	4	6	4	1	0	8	6
Consulting societal organisations	1	3	6	0	8	17	22
Consulting the citizen	0	4	7	0	8	18	19
Develop networks	5	9	21	16	28	4	15
Equality of treatment and access	0	0	9	0	6	1	0
Inclusiveness	28	4	15	0	19	7	1
Total	**50**	**36**	**81**	**25**	**89**	**71**	**82**

European Union:

	Case ID							
	EU2004	**EU2006**	**EU2007**	**EU2010**	**EU2013**	**EU2014**	**EU2016**	**EU2017**
Hierarchy-related Public Values								
Accountability to government	0	0	0	1	0	2	0	0
Accountability towards society in general	0	0	0	0	0	1	3	0
Compliance with the law	7	2	13	17	11	40	9	5
Impartiality	0	0	1	2	1	0	0	0
Judicial values / due process	0	0	1	1	4	7	1	0
Political loyalty	0	0	0	4	0	1	0	0
Protecting citizen security	1	0	0	6	0	13	7	4
Protecting citizens from exploitation	0	0	0	4	0	1	1	4
Protecting enterprise security	1	0	0	7	0	13	6	4
Protecting societal security	1	0	0	5	0	13	5	4
Rectitute	0	0	1	0	3	0	3	1
Responsibility to societal organizations	0	3	0	2	1	2	4	0
Responsibility to the citizen	0	3	0	2	2	2	5	3
Responsibility to the elected politicians of the day	0	0	0	2	0	0	1	0
Responsibility to the enterprises	1	3	0	2	4	2	4	3
Total	**11**	**11**	**16**	**55**	**26**	**97**	**49**	**28**
Market-related Public Values								
Economy/parsimony	1	2	1	3	0	0	4	2
Effectiveness	2	2	0	9	0	3	4	0

Efficiency	2	5	5	14	1	6	13	3
Efficient use of public funds	3	1	2	4	1	0	6	6
Innovation orientation	7	6	0	8	0	11	24	5
Productivity	1	0	0	0	0	1	1	0
Respect for the individual	0	0	0	1	1	0	2	1
Responsiveness	1	0	0	0	0	0	0	1
Satisfying user's needs	2	1	1	12	6	3	19	6
Service to the citizen in his/her different roles	4	5	2	3	8	7	11	4
Service to the enterprises	5	9	3	4	16	11	21	5
Service to the societal organizations	2	1	2	0	8	2	2	2
Total	**30**	**32**	**16**	**58**	**41**	**44**	**107**	**35**
Network-related Public Values								
Balancing different interests	0	6	2	8	2	1	0	0
Consulting enterprises	2	7	2	7	0	3	7	0
Consulting other administrative levels	3	7	5	6	0	0	1	4
Consulting societal organisations	1	6	2	4	0	1	6	1
Consulting the citizen	2	5	2	3	0	0	8	0
Develop networks	7	17	7	26	3	2	9	6
Equality of treatment and access	0	0	0	3	2	1	2	0
Inclusiveness	1		0	2	2	1	5	4
Total	**16**	**48**	**20**	**59**	**9**	**9**	**38**	**15**

Annexes to Chapter 3. Unravelling the relation between Public Values and Coordination Instruments – A Case Study of e-Governance

Annex 3.1 – Public Value Analysis – Coding Scheme

Please see Annex 2.4 – Public Values Analysis – Coding Scheme.

Annex 3.2 – Public Value Analysis – Data

The below table includes the references to public values per analysed document.

	Case ID														
	2004	**2005**	**2006**	**2008**	**2008_2**	**2009**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2020**
Hierarchy-related Public Values															
Accountability to government	0	1	2	0	0	0	1	0	0	0	0	0	1	0	0
Accountability towards society in general	4	1	2	1	2	0	0	0	0	0	0	0	1	0	1
Compliance with the law	2	4	0	0	6	6	2	1	4	3	5	7	4	4	5
Impartiality	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Judicial values / due process	1	0	0	1	0	0	0	0	0	5	4	3	0	0	0
Political loyalty	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Protecting citizen security	6	5	9	1	3	4	0	2	2	6	4	4	10	5	4
Protecting citizens from exploitation	2	1	6	0	0	1	0	1	0	0	1	0	5	1	2
Protecting enterprise security	4	5	4	1	2	2	0	1	2	5	3	4	10	4	1
Protecting societal security	5	1	5	1	2	2	0	1	2	3	3	4	9	4	1
Rectitute	3	0	2	0	0	0	0	0	0	0	0	0	1	2	6
Responsibility to societal organizations	5	3	5	0	0	0	0	0	0	0	0	0	6	5	2
Responsibility to the citizen	7	4	10	1	2	2	2	1	0	3	0	2	6	9	3
Responsibility to the elected politicians of the day	1	1	0	2	4	3	0	0	1	9	6	5	0	1	0
Responsibility to the enterprises	5	3	6	2	2	2	3	4	0	7	1	4	7	4	4
Total	**46**	**29**	**51**	**10**	**23**	**22**	**9**	**11**	**11**	**42**	**27**	**33**	**60**	**39**	**29**
Market-related Public Values															

Economy/parsimony	0	0	0	0	0	1	0	0	0	0	0	2	0	0	1
Effectiveness	3	1	1	1	0	1	1	0	0	2	0	2	0	1	2
Efficiency	17	4	9	5	9	5	6	3	3	3	8	5	7	7	5
Efficient use of public funds	2	2	0	2	3	1	1	0	0	3	2	2	3	4	2
Innovation orientation	24	7	8	2	13	18	3	2	2	6	2	8	12	11	10
Productivity	6	1	4	1	1	1	1	1	0	0	0	0	1	0	0
Respect for the individual	3	0	2	1	0	3	0	0	0	1	1	1	0	0	0
Responsiveness	1	0	0	0	0	1	0	0	1	2	0	7	0	3	1
Satisfying user's needs	27	15	15	4	14	17	9	7	5	4	4	10	12	6	2
Service to the citizen in his/her different roles	19	7	12	4	12	12	7	2	9	4	8	8	9	12	7
Service to the enterprises	9	11	9	3	3	3	8	6	1	1	3	2	8	9	6
Service to the societal organizations	7	4	4	3	10	12	2	0	4	2	5	10	4	4	2
Total	**118**	**52**	**64**	**26**	**65**	**75**	**38**	**21**	**25**	**28**	**33**	**57**	**56**	**57**	**38**
Network-related Public Values															
Balancing different interests	0	0	1	2	0	0	0	1	0	1	1	1	3	0	0
Consulting enterprises	4	1	5	0	1	0	2	6	1	1	0	2	9	7	4
Consulting other administrative levels	0	0	11	0	3	3	2	2	2	5	6	9	9	9	5
Consulting societal organisations	3	1	7	1	2	3	1	1	2	6	2	4	3	4	3
Consulting the citizen	2	1	1	0	1	0	1	0	1	2	5	2	1	3	3
Develop networks	17	9	10	2	2	1	4	11	4	2	5	15	20	13	3
Equality of treatment and access	2	0	2	0	0	0	0	0	0	0	0	0	1	1	1
Inclusiveness	12	0	10	0	6	6	1	0	0	8	5	4	2	2	4
Total	**40**	**12**	**47**	**5**	**15**	**13**	**11**	**21**	**10**	**25**	**24**	**37**	**48**	**39**	**23**

Annex 3.3 – Coordination Instruments Analysis – Coding Scheme

	Coordination Instrument	Description	Origin
Hierarchy-related Coordination Instruments			
	Top-down and unilateral strategic management	"the alignment of activities of public organizations according to a system of interconnected levels of plans, objectives, and targets" "there different levels of plans are inked to one another in order to avoid duplication, gaps and to enhance the pursuit of overarching goals" "plans are monitored and evaluated, after which plans can be adjusted and fine-tuned"	Bouckaert, Verhoest & Peters (2010)
	Traditional input-oriented financial management systems	"defines clearly what resources should be spent on, and in great detail" "there is not much autonomy for organizations to spend the budget as they see fit" "through the budget, policy priorities are set and communicated afterwards"	Bouckaert, Verhoest & Peters (2010)
	Reshuffling of competencies: organizations merger or splits; centralization (decentralization)	"coordination is enhanced by bringing related activities together by merging organizations or by separating them from other organizations with completely different activities" "this reflects the basic principle of work division or departmentalization in organization theory"	Bouckaert, Verhoest & Peters (2010)
	Reshuffling of lines of control	"changing these lines of control may also improve coordination, like letting one minister control several ministries with common or related competencies" "establishing cross-cutting lines of control may increase coordination"	Bouckaert, Verhoest & Peters (2010) Bouckaert, Verhoest & Peters (2010)
Network-related Coordination Instruments			
	Bottom-up and interactive strategic management	Type 1: "a detailed common planning instrument, integrating policy objectives in terms of effects with the specific contributions of individual agencies to these objectives in terms of inputs, activities	Bouckaert, Verhoest & Peters (2010)

		and outputs" - "provide clear, explicit guidelines for organizations involved and enable a transparent accountability system" - Negative elements o "policy objectives are not always easily chopped into pieces and tasks for individual organizations" o "such a system may suffer from a lack of ownership" o "may constrain innovation and creativity at the level of the individual organization" Type 2: "cascade system" - "general policy objectives are linked to more concrete objectives at the level of the individual organization" - The individual organizations make the link themselves, which is then reviewed by some central department" Type 3: "allow organizations themselves to develop strategic partnerships with other organizations in order to achieve objectives for which these organizations are collectively responsible" - "organizations have to deliver as chain-partner" - "stimulates ownership and creativity" - "also assumes substantial autonomy, a strong strategic vision, and sufficient goodwill and capacity at organizational level to make collaboration possible" - "role of central department is more facilitating than directive" Type 4: "sets out a broad collective mission for the whole government, which acts as guidance for the day-to-day work of public sector organizations" - "most loosely couples" - "no monitoring systems are attached, which makes it dependent purely on the goodwill of individual organizations"	
	Results-oriented financial management systems oriented towards information exchange and consolidation according to policy portfolios	"emphasis is on information consolidation and exchange, new budget formats, geared towards horizontal policies" "will usually include great flexibilities for budget shifts between organizations and years, a limitation of input controls, as well as a longer time-span"	Bouckaert, Verhoest & Peters (2010)

	Systems for information exchange	"through new or reoriented flows and systems of information, decision-making organizations can be better informed about the latest developments and activities of other organizations "this helps them to adjust their activities in line with those of other organizations"	Bouckaert, Verhoest & Peters (2010)
	Advisory bodies and consultative/deliberative bodies	"represent a higher level of cooperation between organizations [then consultation or negotiation bodies]" "these entities can make binding decisions" "enable joint planning and joint working more easily than weaker forms of cooperation"	Bouckaert, Verhoest & Peters (2010)
	Entities for collective decision-making	"representative of different organizations exchange information in one or both directions, and organizations can mutually adjust their activities based on the information exchanged" "issues relevant to the different organizations can be discussed and negotiated, and even joint strategies can be elaborated" "decisions made by such bodies have to be ratified and implement by the member organizations or by a higher body before the decision takes effect" "such bodies may be permanent or temporary" "their advice can be binding to differing degrees (legally, morally, politically)"	Bouckaert, Verhoest & Peters (2010)
	Common organizations	"two or more organizations create a common organization controlled by the different 'parent' organizations in order to perform joint tasks" Examples: - Project-linked joint ventures - Satellites - Unions - Public-private partnerships - Organizations for shared services (HR, ICT, financial management)	Bouckaert, Verhoest & Peters (2010)
	Chain-management structures	"structural devices used to coordinate a network of different organizations involved in subsequent steps of the production of a good, a service or a policy" Examples: - Policy chains	Bouckaert, Verhoest & Peters (2010)

		- Implementation chains - Product creation chains - Logistic chains - Information or knowledge chains "besides self-organization, there is 'relay'-coordination, with each individual organization gearing its actions to those of organizations before and after it in the chain" "the consultation body may monitor the preparation, implementation and evaluation of the policy" "all actors are involved as 'equal' partners, although one actor may take the strategic lead as chain manager"	
Market-related Coordination Instruments			
	Results-oriented financial management systems focused on incentives for units	"heavy emphasis on organizational incentives for performance" "focus of the financial management system is on providing incentives to organizational units to increase their performance" "budget is linked to the expected or past performance of the organizations" "financial sanctions in case of underperformance are possible"	Bouckaert, Verhoest & Peters (2010)
	Regulated market	"create stimuli and sanctions that induce appropriate behaviour by public organizations" "coordination [...] is done through mechanisms of price and competition, offer and demand" "money and incentives are crucial" Market levels: - Internal market - Quasi-market - Voucher market - External market	Bouckaert, Verhoest & Peters (2010)
Network-Hierarchy-related Coordination Instruments			
	Procedural instruments concerning mandated consultation and review	"some countries use forced points of passage during preparation of policy initiatives" "review procedures of draft legislation" "policy audits and evaluation"	Bouckaert, Verhoest & Peters (2010)

	Establishment of a specific coordinating function or entity; lines of control	"a coordinator, respectively an individual or unit whose only or main function is to coordinate the activities of the different organizations in an inter-organizational system" "a lead organization which has, besides its coordinating function, some line functions" "their coordinating power is mostly stipulated and enforced by laws and statutes" "their task is often to streamline, monitor and control the implementation of a centrally decided specific objective, goal or policy"	Bouckaert, Verhoest & Peters (2010)
Network-Market-related Coordination Instruments			
	Inter-organisational learning culture by job rotation, training and internal job market	"fostering shared visions, values, norms and knowledge between organizations" "could be done by means of the development of cross-cutting skills among staff, common education or common training; management development; mobility of staff between organizations; collocations; and the creation of systems for inter-organizational career management and competence management"	Bouckaert, Verhoest & Peters (2010)

Annex 3.4 – Coordination Instruments Analysis – Data

The below table includes the references to coordination instruments per analysed document.

	Case ID														
	2004	**2005**	**2006**	**2008**	**2008_2**	**2009**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2020**
Hierarchy-related Coordination Instruments															
Top-down and unilateral strategic management	8	2	3	2	11	9	2	3	2	4	5	2	1	0	0
Traditional input-oriented financial management systems	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3
Reshuffling of competencies: organizations merger or splits; centralization (decentralization)	1	0	0	0	1	0	1	4	4	1	3	6	6	4	0
Reshuffling of lines of control	3	0	0	0	0	0	0	0	0	0	1	2	3	2	0
Total	0	2	3	2	12	9	3	7	7	7	9	10	10	6	3
Network-related Coordination Instruments															
Bottom-up and interactive strategic management	1	3	6	0	2	1	1	0	0	2	0	0	0	0	2
Results-oriented financial management systems oriented towards information exchange and consolidation according to policy portfolios	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
Systems for information exchange	7	1	6	1	4	8	2	7	3	4	3	2	2	1	1
Advisory bodies and consultative/deliberative bodies	3	2	5	0	0	2	0	0	1	1	3	2	4	3	6

Entities for collective decision-making	4	1	1	0	2	0	0	0	1	0	0	5	10	11	1
Common organizations	1	0	0	0	0	0	0	0	0	0	3	4	1	2	1
Chain-management structures	0	0	0	0	0	1	0	0	0	0	1	6	4	4	2
Total	16	7	18	1	8	12	3	7	5	7	11	20	21	21	13
Market-related Coordination Instruments															
Results-oriented financial management systems focused on incentives for units	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
Regulated market: internal markets, quasi-markets, voucher markets and external markets	1	0	0	0	1	1	0	0	0	2	2	3	1	1	0
Total	1	0	0	0	1	1	0	0	0	3	2	3	2	1	0
Network-Hierarchy-related Coordination Instruments															
Procedural instruments concerning mandated consultation and review	1	0	2	2	2	2	1	4	2	4	2	2	1	2	1
Establishment of a specific coordinating function or entity; lines of control	6	8	14	3	5	4	7	9	5	4	2	6	1	3	0
Total	**7**	**8**	**16**	**5**	**7**	**6**	**8**	**13**	**7**	**8**	**4**	**8**	**2**	**5**	**1**
Network-Market-related Coordination Instruments															
Inter-organisational learning culture by job rotation, training and internal job market	1	0	0	0	0	0	0	0	0	0	3	1	4	5	2
Total	1	0	0	0	0	0	0	0	0	0	3	1	4	5	2

Annexes to Chapter 4. The Governance Landscape of Geospatial E-Services: The Belgian Case

Annex 4 – Online Survey (Dutch version)

First Screen

Bedankt om deze vragenlijst in te vullen! Hou er rekening mee dat er geen juist of fout antwoord is, aangezien we u beschouwen als een expert binnen uw organisatie.

Second screen

1. Welk type interactie dat gebruik maakt van elektronische netwerken, beschouwt u als een publieke e-service? Kruis de passende vakjes aan.

   More than one answer possible.

   a. Overheid naar Overheid (G2G)

   b. Overheid naar Ondernemingen (G2B)

   c. Overheid naar Burgers (G2C)

   d. Burgers naar Overheid (C2G)

   e. Ondernemingen naar Overheid (B2G)

   f. Burgers naar Burgers (C2C)

2. Welke publieke e-services[40], aangeboden door de federale administratie, worden gebruikt door uw organisatie? Gelieve slechts één publieke e-service per vakje in te vullen en het vakje ernaast aan te kruisen als je gelooft dat deze publieke e-service steunt op het gebruik van geografische data[41].

   This is an open question – 10 boxes appear, the respondent can enter one service per box. If the respondent has entered an e-service, he/she also has to indicate if it is an e-service that relies on location based data. Only if the 10 options are filled in, the respondent can ask for other boxes. Those extra boxes will appear via another question (as this is required by the programming).

[40] Interactie, via het gebruik van elektronische netwerken, tussen een dienstenaanbieder en een dienstenconsument om zo een dienst te leveren, met als doel aan noden met een algemeen karakter te voldoen.

[41] Alle data die is gelinkt aan een locatie op Aarde (vb. adressen, 'points of interest' etc.).

3. *If Q2 is not filled in, then question:* Waarom maakt uw organisatie geen gebruik van federale e-services?

   Answers have to appear randomized, except for j. (remains last one). More than one answer is possible.

   a. Niet op de hoogte van hun bestaan
   b. Het is te complex om te gebruiken
   c. Het vraagt te veel tijd om te gebruiken
   d. Wij zien de toegevoegde waarde van e-services in vergelijking met traditionele diensten niet
   e. Het is irrelevant voor ons beleid
   f. Het verhoogt de coherentie en consistentie van ons beleid niet
   g. Het helpt niet om onze doelen te bereiken
   h. Ontbreken van vertrouwen in het functioneren van de e-service
   i. Om privacyproblemen te vermijden
   j. Ander: …

4. *If Q2 is filled in, then question*: Waarom maakt uw organisatie gebruik van federale e-services?

   Answers have to appear randomized, except for j. (remains last one). More than one answer is possible.

   a. Om te voldoen aan wettelijke bepalingen
   b. Het past in het beleid van onze organisatie
   c. Het is deel van de cultuur in mijn organisatie, ook al is er geen administratieve of wettelijke verplichting om het te doen
   d. Het bespaart tijd
   e. Het vermindert de kosten
   f. Het helpt mijn organisatie haar doelen te bereiken
   g. Het is beter aangepast aan de wijzigende gebruikersnoden
   h. Het bevordert de interoperabiliteit

i. Het verhoogt de transparantie van mijn organisatie

j. Ander: …

5. *If Q2 is filled, but no 'location based data'-box is ticked in Q2 (comes after Q4) , then question:* Waarom gebruikt uw organisatie geen federale e-services die steunen op het gebruik van geografische data?

   Answers have to appear randomized, except for l. (remains last one). More than one answer is possible.

   a. Niet op de hoogte van hun bestaan

   b. Het is te complex om te gebruiken

   c. Het vraagt te veel tijd om te gebruiken

   d. Wegens een inbreuk op de privacy

   e. Wij hebben nog nooit gehoord van geografische data

   f. Zien de toegevoegde waarde van e-services gebaseerd op geografische data in vergelijking met traditionele e-services niet

   g. Het is irrelevant voor ons beleid

   h. Het verhoogt de coherentie en consistentie van ons beleid niet

   i. Het help niet om onze doelen te bereiken

   j. Ontbreken van vertrouwen in het functioneren van de e-service

   k. Wij zijn niet zeker dat het een e-service is die gebruik maakt van geografische data

   l. Ander: …

Third screen

6. Welke e-service(s) worden door uw organisatie aangeboden? Gelieve één e-service per vakje in te vullen. Gelieve het vakje ernaast aan te kruisen als je gelooft dat het een e-service is die steunt op het gebruik van geografische data.

   10 boxes appears and allows respondent to type the names of e-services. If an e-service is given, the respondent has to tick the box on the right side of it when it is an e-service with a location based component. (same structure as Q2 – respondent can get more boxes as in Q2)

7. *If Q6 is not filled, then question*: Waarom biedt uw organisatie geen e-service(s) aan?

   Answers have to appear randomized, except for i. (remains last one). More than one answer is possible.

   a. Tekort aan capaciteit (tijd, personeel, IT kennis)
   b. Tekort aan financiële middelen
   c. Tekort aan technische infrastructuur
   d. De overheidsstructuur is te complex om een e-service te ontwikkelen
   e. Mijn organisatie ziet de toegevoegde waarde van e-services niet in vergelijking met traditionele diensten
   f. Mijn organisatie heeft vragen bij de betrouwbaarheid van de e-services
   g. Mijn organisatie is niet op de hoogte van potentiële gebruikers
   h. De publieke e-services aangeboden door andere administraties volstaan om de behoeften van onze gebruikers te dekken
   i. Ander: …

8. *If Q6 - one or several e-services filled in by respondent, then question:* Waarom heeft uw organisatie (een) e-service(s) ontwikkeld?

   Answers have to appear randomized, except for j. (remains last one). More than one answer is possible.

   a. Om te voldoen aan wettelijke bepalingen
   b. Het past in het beleid van mijn organisatie
   c. Het is deel van de cultuur van mijn organisatie, ook al is er geen administratieve of wettelijke verplichting om het te doen
   d. Het bespaart tijd
   e. Het vermindert de kosten
   f. Het helpt mijn organisatie haar doelen te bereiken
   g. Het is beter aangepast aan de wijzigende gebruikersnoden
   h. Het bevordert de interoperabiliteit
   i. Het verhoogt de transparantie van mijn organisatie

j. Ander: …

Fourth screen

9. Wat zijn de huidige en/of voorziene publieke e-service projecten waarbij uw organisatie betrokken is, die verband houden met geografische data? Gelieve deze vraag open te laten indien uw organisatie op dit moment geen projecten heeft.

   10 boxes appear, the respondent can ask for more boxes when the 10 others are filled in – those boxes appear in another question (required for the programming).

Fifth screen

10. *If Q6 – one or several e-services filled in by respondent, then question:* Maakt uw organisatie gebruik van de volgende processen om (een) e-service(s) tot stand te brengen?

    More than one answer possible.

    a. "Agile" software ontwikkelingsmethode
    b. Coproductie / Co-creatie
    c. Geen van de bovenstaande
    d. Ik weet het niet

11. *If Q6 – one or several e-services filled in by respondent, then question:* Maakt uw organisatie gebruik van de volgende infrastructuur bij het aanbieden van haar e-service(s)?

    Answers have to appear randomized, except for g. and h.. (remains last one). More than one answer is possible.

    a. Service Oriented Architecture
    b. Cloud Computing
    c. Micro-services
    d. Internet of things
    e. Voorstelling van e-services aan de hand van levensgebeurtenissen (bv. geboorte, overlijden etc.)
    f. Sensoren / mobiele apparaten
    g. Ander: …

h. Ik weet het niet

12. *If Q10 is a., then question:* Welke van de volgende methodes heeft uw organisatie gebruikt?

Answers have to appear randomized, except for g. and h. (remains last one)

a. Extreme Programming (XP)

b. SCRUM

c. Feature Driven Development

d. Dynamic Systems Development Method (DSDM)

e. Lean Development/Management

f. Een speciaal daartoe ontwikkelde methode

g. Ander: …

h. Ik weet het niet

Sixth screen

13. Hoe identificeert uw organisatie de behoeften/vereisten van de belanghebbenden voor e-services?

Answers have to appear randomized, except for f. (remains last one). More than one answer is possible. If d. – e. is ticked, respondent gets the question to specify the answer.

a. Door gebruikers te betrekken bij de creatie van e-services

b. Door gebruik te maken van interne ondersteuning

c. Door een dienstenintegrator[42]te betrekken

d. Door de 'requirements engineering' uit te besteden aan een derde partij

e. Door 'best practices' van de industrie te hergebruiken als een basis voor de behoeften/vereisten

f. Andere: …

[42] Infrastructuur verantwoordelijk voor het verzekeren van, binnen het netwerk van publieke overheden, de elektronische uitwisseling van informatie van verschillende bronnen (bv: FEDICT, Kruispuntbank Sociale Zekerheid, Centrum voor Informatica voor het Brusselse Gewest – Centre d'Informatique pour la Région Bruxelloise, e-Wallonie-Bruxelles Simplification, Agentschap Informatie Vlaanderen).

13 – bis. *If Q13 d. is ticked, then question*: Aan wie heeft uw organisatie de 'requirements engineering' uitbesteed?

Open question.

14. *If Q10 is b. or if Q13 is a., then question*: Waarom betrekt uw organisatie gebruikers bij de creatie van e-services?

More than one answer is possible. Answers have to appear randomized, except for h. (remains last one).

a. Om de kwaliteit van de dienstverlening te verbeteren
b. Om de effectiviteit en output te verbeteren
c. Om het vertrouwen van gebruikers in mijn organisatie op te bouwen
d. Om het betrokkenheidsgevoel van gebruikers te verhogen
e. Om de productiviteit te verhogen
f. Om budgetuitgaven en kosten te verminderen
g. Omdat er politieke druk is om dit te doen
h. Ander: …

15. *If Q13 is a., then question:* In welke fase betrekt uw organisatie de gebruikers bij de creatie van e-services?

More than one answer is possible.

a. Projectinitiatie (beslissing om een e-service te ontwikkelen)
b. Analyse van de behoeften/vereisten (resulterend in lijst met behoeften/vereisten van de belanghebbenden)
c. Ontwerp (gebruikersinterface en software architectuur)
d. Implementatie van de e-service (resulteert in software)
e. Testen van de e-service
f. Onderhoud (evaluatie van de e-service)

16. *If Q13 is a., then question:* Hoe verzamelt uw organisatie de behoeften / vereisten van gebruikers?

More than one answer is possible. Answers have to appear randomized, except for j. (remains last one).

a. Vertegenwoordiging in het projectteam
b. Betrokkenheid bij gebruikersworkshop
c. Onlineplatform waar ideeën, commentaren en feedback kunnen gegeven worden
d. Interactie via sociale media kanalen
e. Via (online) surveys
f. Via interviews / groepsdiscussies
g. Deelname aan een Living Lab[43]
h. Via een gebruikerstest met e-service prototypes
i. Door gebruik te maken van een bestaande 'requirement engineering' methode
j. Ander: …

17. *If Q13 is not a., then question*: Waarom betrekt uw organisatie geen gebruikers bij de creatie van e-services?

More than one answer possible. Answers have to appear randomized, except for j. and k. (remains last one).

a. Moeilijkheden om vrijwilligers te betrekken
b. Tekort aan methodologie
c. Meerwaarde om gebruikers te betrekken is onduidelijk
d. Duidelijke en representatieve steekproef van gebruikers is moeilijk te identificeren
e. Tekort aan financiële middelen
f. Tekort aan adequate technische infrastructuur
g. Tekort aan capaciteit (tijd, personeel, IT kennis)
h. Niet in de cultuur van mijn organisatie

[43] Innovatief ecosysteem dat nieuwe concepten en ideeën exploreert door de overheid, bedrijven en burgers te betrekken.

i. Tekort aan coördinatie tussen verschillende overheidsniveaus

j. Ander: …

k. Ik weet het niet

Seventh screen

18. Hoe vaak verwerkt[44] uw organisatie geografische data?

If Q18 is f., then go directly to Q20.

a. Nooit

b. Op maandelijkse basis

c. Op wekelijkse basis

d. Op dagelijkse basis

e. Mijn organisatie verwerkt er maar ik weet niet hoe vaak

f. Ik weet niet of mijn organisatie er verwerkt

19. *If question Q18 is* a.*, then question:* Waarom verwerkt uw organisatie geen geografische data?

More than one answer possible. Answers have to appear randomized, except for h. and i. (remains last one).

a. Geen potentieel toegevoegde waarde voor mijn organisatie

b. Geen potentieel toegevoegde waarde voor onze gebruikers

c. Tekort aan financiële middelen

d. Wettelijke beperkingen verhinderen ons dit te doen

e. Tekort aan capaciteit (tijd, personeel, IT kennis)

f. Tekort aan adequate technische infrastructuur

g. Geen toegang tot dat type data

h. Ander: …

[44] Een bewerking of een geheel van bewerkingen met betrekking tot persoonsgegevens of een geheel van persoonsgegevens, al dan niet uitgevoerd via geautomatiseerde procedés, zoals het verzamelen, vastleggen, ordenen, structureren, opslaan, bijwerken of wijzigen, opvragen, raadplegen, gebruiken, verstrekken door middel van doorzending, verspreiden of op andere wijze ter beschikking stellen, aligneren of combineren, afschermen, wissen of vernietigen van gegevens

i. Ik weet het niet

20. *If Q18 is b.-e., then question:* Waarom verwerkt uw organisatie geografische data? *More than one answer possible. Answers have to appear randomized, except for j. (remains last one).*

    a. Om te voldoen aan wettelijke bepalingen

    b. Het past in het beleid van mijn organisatie

    c. Het is deel van de cultuur van mijn organisatie, ook al is er geen administratieve of wettelijke verplichting om het te doen

    d. Het bespaart tijd

    e. Het vermindert de kosten

    f. Het helpt mijn organisatie haar doelen te bereiken

    g. Om aan de wijzigende gebruikersnoden te voldoen

    h. Het bevordert de interoperabiliteit

    i. Het verhoogt de transparantie van mijn organisatie

    j. Ander: …

Eight screen

21. Gelieve aan de duiden welk van de volgende types geografische datasets uw organisatie momenteel 'gebruikt', 'produceert' of 'nodig heeft maar niet bezit'.

    Types of datasets will appear randomly to avoid biased selection by respondents, only categories "Other:…" and "I don't know" remain at the two last rows of the table. Only the underlined concepts appear at first sight. The definition and examples only appear if the respondent point the mouse on the concept.

	Gebruikt	Produceert	Nodig heeft maar niet bezit
Landbouw (kweken van dieren en/of verbouwen van planten. Bv. Landbouw, plantages, veeteelt,…)			
Biota (flora en/of fauna in natuurlijke omgeving. Bv. fauna, vegetatie, habitat)			

Grenzen (wettelijke landbeschrijvingen. Bv. politieke en administratieve grenzen)			
Klimaat/Meteorologie (processen en fenomenen van de atmosfeer. Bv. weer, klimaat, atmosferische omstandigheden)			
Economie (economische activiteiten, voorwaarden en tewerkstelling. Bv. handel, industrie, toerisme, exploitatie van bronnen)			
Hoogte (hoogte boven of onder het zeeniveau. Bv. hoogtemeting, dieptemeting)			
Milieu (natuurlijke bronnen, bescherming en conservatie. Bv. verontreiniging, afvalopslag en behandeling, natuurlijke reserves)			
Geo-wetenschappelijke informatie (informatie met betrekking tot aardwetenschappen. Bv. geofysica, geologie, aardbevingen)			
Gezondheid (gezondheid, gezondheidsdiensten, menselijke ecologie, en veiligheid. Bv. ziektes, hygiëne, gezondheidsdiensten)			
Basiskaarten (Bv. bodembedekking, topografische kaarten)			
Beelden van de aarde (Bv**.** satellietbeelden, luchtfoto's, LIDAR)			
Militaire inlichtingen (militaire basissen, structuren, activiteiten. Bv. militaire gebouwen en transport)			
Binnenwateren (binnenwaterkenmerken, drainagesystemen en hun karakteristieken. Bv. rivieren, watergebruiksplannen, dammen, overstromingen)			
Locatie (informatie en diensten over een positie. Bv. adressen, geodetische netwerken, controlepunten, postzones en diensten, plaatsnamen)			
Oceanen (kenmerken en karakteristieken van zoutwatermassa's. Bv. getijden, kustinformatie, riffen)			
Kadastrale plannen (informatie gebruikt voor gepaste acties betreffende het toekomstige gebruik van land. Bv. bodemgebruikskaarten, plankaarten, kadastrale bevragingen, landeigenaarschap)			

Samenleving (kenmerken van de samenleving en culturen. Bv. archeologie, onderwijs, demografische data, recreatiegebieden en activiteiten, criminaliteit en justitie)			
Structuur (door de mens gemaakte constructies. Bv. gebouwen, musea, religieuze gebouwen, fabrieken, huizen, monumenten, winkels, torens)			
Transport ((hulp)middelen om mensen en/of goederen te vervoeren. Bv. wegen, luchthavens, tunnels, zeekaarten, vaartuiglokalisatie, luchtvaartkaarten, spoorwegen)			
Communicatiemogelijkheden (energie-, water- en afvalsystemen en communicatie-infrastructuur en diensten. Bv. zonne- en nucleaire energie, watervoorzieningen, rioolwater, elektriciteit- en gasverdeling, telecommunicatienetwerken)			

21 – bis. *If for a certain category of Q21, the 'use'-box is ticked, but not the corresponding 'produce'-box, then question:* Van welke organisatie(s) krijgt uw organisatie de dataset(s)?

Only the categories that fulfill those two conditions will appear, and a box next to each of the categories that appears, allows the respondent to specify where respondent can fill in from whom he/she got the dataset(s).

22. *If Q21 reveals that one or several types of datasets is 'necessary but unavailable', then question:* Waarom heeft uw organisatie geen toegang tot de datasets die het 'nodig heeft maar niet bezit'?

More than one answer possible. Answers have to appear randomized, except for g. (remains last one).

a. Mijn organisatie vermoedt dat de dataset(s) bestaat / bestaan maar we weten niet waar ze te vinden

b. De dataset(s) is / zijn geheim of privacy gevoelig

c. Tekort aan financiële middelen

d. Tekort aan adequate technische infrastructuur

e. De overheidsstructuur is te complex

f. Tekort aan capaciteit (tijd, personeel, IT kennis)

g. Ander: …

Ninth screen

23. Beschouwt uw organisatie één of meerdere van zijn databases als authentieke bronnen van data?

    a. Ja

    b. Nee

    c. Ik weet het niet

24. Hoe worden de data die uw organisatie verwerkt bewaard?

    More than one answer possible. Answer c. allows the respondent to write down who is storing the data.

    a. In fysieke dossiers

    b. Digitaal in huis (in mijn eigen organisatie, hoewel de fysieke locatie elders kan zijn dan ons kantoor)

    c. Digitaal uitbesteed (organisatie uit de publieke of de private sector is verantwoordelijk voor het opslaan van onze data).

    d. Ander: …

    e. Ik weet het niet

24 – bis. *If Q24 is c., then question*: In welke organisatie(s) worden uw data bewaard?

Open question. A box has to appear where the respondent can fill in the name of the organization.

25. Bewaart uw organisatie metadata over de datasets die ze verwerkt?

    More than one answer possible.

    a. Ja, over de conformiteit van de datasets met de technische interoperabiliteitsmodaliteiten

    b. Ja, over de toegang en de gebruiksvoorwaarden van de datasets

    c. Ja, over de kwaliteit en de validiteit van de datasets

d. Ja, over de publieke autoriteiten verantwoordelijk voor de organisatie van de datasets

e. Ja, over de redenen van de toegangsrestricties

f. Nee

g. Ik weet het niet

Tenth screen

26. Wat is, binnen uw organisatie, de meest voorkomende financiële overeenkomst om geografische data geproduceerd door de publieke sector te verwerven?

    a. Mijn organisatie koopt geen geografische data van de publieke sector

    b. Mijn organisatie koopt ze aan tegen de transactiekost

    c. Mijn organisatie koopt ze aan tegen de complete kostprijs (niet-marktgerelateerde prijs)

    d. Mijn organisatie koopt ze aan tegen de marktprijs

    e. Mijn organisatie krijgt de data gratis

    f. Ander: …

    g. Ik weet het niet

27. Wat is, binnen uw organisatie, de meest voorkomende financiële overeenkomst om geografische data geproduceerd door de private sector te verwerven?

    a. Mijn organisatie koopt geen geografische data van de private sector

    b. Mijn organisatie koopt ze aan tegen de transactiekost

    c. Mijn organisatie koopt ze aan tegen de complete kostprijs (niet-markt gerelateerde prijs)

    d. Mijn organisatie koopt ze aan tegen de marktprijs

    e. Mijn organisatie krijgt de data gratis

    f. Ander: …

    g. Ik weet het niet

28. *If in Q21 at least one category of data is ticked in the 'produce'-column, then question:* Deelt uw organisatie geografische data die ze produceert met andere organisaties?

a. Ja

b. Nee

c. Ik weet het niet

29. *If Q28 is b., then question:* Waarom deelt uw organisatie geen geografische data die ze produceert met andere organisaties?

More than one answer possible. Answers appear in a random order except h. (remains last one)

a. Om privacyredenen

b. Omdat er onvoldoende capaciteit is (tijd, personeel, IT kennis)

c. Om aansprakelijkheidsredenen

d. Om redenen verbonden aan intellectueel eigendomsrecht

e. Omdat mijn organisatie de toegevoegde waarde niet ziet

f. Om interoperabiliteitsredenen

g. Omdat er onvoldoende adequate technische capaciteit is

h. Ander: …

30. *If Q28 is a., then question:* Waarom deelt uw organisatie de geografische data die ze produceert?

More than one possible. Answers appear in a random order except j. (remains last one)

a. Om te voldoen aan wettelijke bepalingen

b. Het past in het beleid van mijn organisatie

c. Het is deel van de cultuur van mijn organisatie, ook al is er geen administratieve of wettelijke verplichting om het te doen

d. Het bespaart tijd

e. Het vermindert de kosten

f. Het helpt mijn organisatie haar doelen te bereiken

g. Het is beter aangepast aan de wijzigende gebruikersnoden

h. Het bevordert de interoperabiliteit

i. Het verhoogt de transparantie van mijn organisatie

j. Ander: …

31. *If Q28 is a., then question:* Wat is, binnen uw organisatie, de meest voorkomende financiële overeenkomst om geografische data te delen met organisaties uit de publieke sector?

    a. Mijn organisatie verkoopt ze tegen de transactiekost

    b. Mijn organisatie verkoopt ze tegen de complete kostprijs (niet-markt gerelateerde prijs)

    c. Mijn organisatie verkoopt ze tegen de marktprijs

    d. Mijn organisatie stelt de data gratis ter beschikking

    e. Ander: …

    f. Ik weet het niet

32. *If Q28 is a., then question:* Wat is, binnen uw organisatie, de meest voorkomende financiële overeenkomst om geografische data te delen met organisaties uit de private sector?

    a. Mijn organisatie verkoopt ze tegen de transactiekost

    b. Mijn organisatie verkoopt ze tegen de complete kostprijs (niet-markt gerelateerde prijs)

    c. Mijn organisatie verkoopt ze tegen de marktprijs

    d. Mijn organisatie stelt de data gratis ter beschikking

    e. Ander: …

    f. Ik weet het niet

33. *If Q28 is a., then question:* Gebruikt uw organisatie, als aanbieder van data, een online overheidsplatform of website om haar geografische data te delen?

    If respondent ticks a., then a box opens that allows respondent to write down the platform or website.

    a. Ja

    b. Nee

    c. Ik weet het niet

33 – bis. *If Q33 is a., then question*: Welk online overheidsplatform of website wordt gebruikt om geografische data te delen?

Open question. Respondent gets a box to write down the name of the platform or website.

Eleventh screen

34. Gelieve aan te duiden in welke mate u, als een expert van uw organisatie, akkoord gaat met de volgende beweringen.

Statement appear in random order. Likert scale with 5 points.

	Helemaal oneens	Eerder oneens	Noch eens, noch oneens	Eerder eens	Helemaal eens
Mijn organisatie verschaft, op een duidelijke en gestructureerde manier, instructies over hoe gebruik te maken van geografische data in mijn werk (i.e. via werkgroepen, klassen etc.).					
Mijn organisatie wordt geconfronteerd met moeilijkheden in verband met het juist lokaliseren van evenementen, personen of objecten.					
Mijn organisatie zou graag meer betrokken zijn in de creatie van e-services die een directe impact hebben op mijn werk.					
Mijn organisatie zou graag hebben dat de federale overheid meer betrokken is bij de creatie van e-services op het gewestelijke en lokale niveau.					
Mijn organisatie zou graag samen met andere federale administraties geo-software verwerven.					
De gebruiksvriendelijkheid van een e-service is sterk afhankelijk van de federale administratie die het ontwikkeld heeft.					

Mijn organisatie maakt gebruik van een 'management framework' om het aanbieden van zijn e-services te verbeteren.					
Mijn organisatie maakt gebruik van het "European Interoperability Framework" om het aanbieden van zijn e-services te verbeteren.					
Mijn organisatie gaat akkoord met het principe dat data van de publieke sector open moeten zijn voor hergebruik.					
Mijn organisatie gelooft dat het efficiënter is om zijn e-services op zichzelf te ontwikkelen, zonder de participatie van andere partners.					
In de toekomst zou mijn organisatie graag actiever samenwerken met andere administraties binnen hetzelfde overheidsniveau.					
In de toekomst zou mijn organisatie graag meer diversiteit bieden in de manier waarop e-services worden aangeboden (smartphones, website etc.).					
In de toekomst zou mijn organisatie graag actiever samenwerken met andere administraties over verschillende overheidsniveaus heen.					
Mijn organisatie gelooft dat de huidige wetgeving aangepast dient te worden om samenwerking met andere administraties te vereenvoudigen.					
Mijn organisatie maakt gebruik van een dienstenintegrator om de data te verkrijgen die het nodig heeft.					
Mijn organisatie voelt de nood aan een gezaghebbende instelling op het terrein van de e-services.					

In de toekomst wenst mijn organisatie betrokken te zijn in een netwerk om gemeenschappelijke bezorgdheden gelinkt aan e-services te bespreken.					
Mijn organisatie is goed op de hoogte van de rol van het Nationaal Geografisch Instituut.					
Mijn organisatie gaat akkoord met het idee dat publieke sector data gratis beschikbaar moeten zijn voor hergebruik.					
Mijn organisatie maakt gebruik van producten en diensten aangeboden door het Nationaal Geografisch Instituut.					

Twelfth screen

Wat is uw geboortejaar? *Provide them with a list of years – starting in 1900*

Wat is uw functie in de organisatie? *Provide them with a box to fill in their function.*

Hoeveel jaar werkt u al in totaal? *Provide them with a list of numbers (counting from 1 – 70)*

U bent een:

a. Vrouw
b. Man
c. X

Wat is het hoogte diploma dat u behaald hebt?

a. Geen diploma
b. Basisonderwijs (tot 12 jaar)
c. Lager secundair onderwijs (tot 15 jaar)
d. Hoger secundair onderwijs (tot 18 jaar)
e. Hogeschool
f. Universitair

Final screen

Wat zijn volgens u de belangrijkste uitdagingen die aangepakt moeten worden wat het aanbieden van e-services in België betreft?

Open question – provide a box where the respondent can write his/her answer.

Het FLEXPUB team wenst u te danken voor uw medewerking. Vergeet het niet – u vulde deze vragenlijst niet in voor ons, maar voor uzelf, uw werk en uw organisatie.

Indien u een laatste opmerking wil maken, dan kan u dit doen in het vakje hieronder:

Provide a big box where the respondent can write his comments

Annexes to Chapter 5. Analysing e-government through the Multi-Level Governance lens: An exploratory study in Belgium

Annex 5 – Overview of Analysed Documents

Note: The document are sorted first by administrative level and then by date. Concerning documents of the Belgian federal administration and the Brussels Capital Region administration, only the Dutch title has been included.

EU Institutions	
European Commission Communications, European Commission Decisions & Other European Commission Documents	
Communication – eEurope 2002: Impact and Priorities	13/03/2001
Other document – European Interoperability Framework for Pan-European eGovernment Services	2004
Decision – Re-use of Commission Information	07/04/2006
Communication – Re-use of Public Sector Information – Review of Directive 2003/98/EC	07/05/2009
Communication – The European eGovernment Action Plan 2011-2015: Harnessing ICT to promote smart, sustainable & innovative Government	15/12/2010
Decision – Reuse of Commission documents	12/12/2011
Communication – EU eGovernment Action Plan 2016-2020: Accelerating the digital transformation of government	19/04/2016
Other document – Evaluation accompanying the document Proposal for a Directive of the European Parliament and of the Council on the re-use of public sector information	25/04/2018
European Council and European Parliament Documents	
Decision – A Community contribution for telematic interchange of data between administration in the Community (IDA)	06/11/1995
Directive – The protection of individuals with regard to the processing of personal data and on the free movement of such data	23/11/1995
Decision – A series of guidelines, including the identification of projects of common interest, for trans-European networks for the electronic interchange of data between administrations	03/08/1999
Decision – Adopting a series of actions and measures in order to ensure interoperability of and access to trans-European networks for the electronic interchange of data between administrations	03/08/1999
Decision – A series of guidelines, including the identification of projects of common interest, for trans- European networks for the electronic interchange of data between administration, amended version (2045/2002/EC)	20/11/2002

Decision – A series of guidelines, including the identification of projects of common interest, for trans- European networks for the electronic interchange of data between administration, amended version (2046/2002/EC)	20/11/2002
Directive – Re-use of public sector information, amended version (2013/37/EU)	27/06/2013
EU Ministerial Declarations	
European Ministerial Conference – Global Information Networks: Realising the Potential	06-08/07/1997
Tallinn Declaration on eGovernment	06/10/2017
Belgian Federal Administration	
Ontwerp van Koninklijk besluit tot vaststelling van de criteria op basis waarvan gegevens als authentiek gekwalificeerd worden in uitvoering van de wet van 15 augustus 2012 houdende oprichting en organisatie van een federale dienstenintegrator	No Date
Wet tot regeling van een Rijksregister van de natuurlijke personen	08/08/1983
Wet houdende oprichting en organisatie van een Kruispuntbank van de sociale zekerheid	15/01/1990
Wet tot omzetting van de richtlijn 2003/98/EG van het Europees Parlement en de Raad van 17 november 2003 inzake het hergebruik van overheidsinformatie	07/03/2007
Koninklijk besluit tot uitvoering van artikel 73 van de wet van 16 januari 2003 tot oprichting van een Kruispuntbank van Ondernemingen, tot modernisering van het handelsregister, tot oprichting van erkende ondernemingsloketten en houdende diverse bepalingen en tot wijziging van de besluitwet van 7 februari 1945 betreffende de maatschappelijke veiligheid van de zeelieden ter koopvaardij	25/04/2014
Wet inzake het hergebruik van overheidsinformatie	04/05/2016
Brussels Capital Region Administration	
Ordonnantie houdende omzetting van de Richtlijn 2003/98/EG van het Europees Parlement en de Raad van 17 november 2003 inzake het hergebruik van overheidsinformatie	06/03/2008
Ordonnantie betreffende de oprichting en organisatie van een gewestelijke dienstenintegrator	08/05/2014
Ordonnantie ertoe strekkende een opendatabeleid uit te stippelen en houdende omzetting van de Richtlijn 2013/37/EU van het Europees Parlement en de Raad van 26 juni 2013 tot wijziging van Richtlijn 2003/98/EG van het Europees Parlement en de Raad van 17 november 2003 inzake het hergebruik van overheidsinformatie	27/10/2016
Flemish Regional Administration	
Decreet betreffende het hergebruik van overheidsinformatie	27/04/2007
Decreet houdende de oprichting en organisatie van een Vlaamse dienstenintegrator	13/07/2012
Decreet tot wijziging van het decreet van 27 april 2007 betreffende het hergebruik van overheidsinformatie en het decreet van 18 juli 2008 betreffende het elektronische bestuurlijke gegevensverkeer	12/06/2015
Walloon Regional Administration	

Décret portant transposition de la Directive 2003/98/CE du Parlement européen et du Conseil du 17 novembre 2003 concernant la réutilisation des informations du secteur public	14/12/2006
Décret relatif à la réutilisation des informations du secteur public et visant à l'établissement d'une politique de données ouvertes ("Open Data")	12/07/2017
Décret conjoint relatif à la réutilisation des informations du secteur public et visant à l'établissement d'une politique de données ouvertes ("Open Data") pour les matières visées par l'article 138 de la Constitution	12/07/2017
Inter-federal Agreements	
Samenwerkingsakkoord tussen de Federale Staat, de Vlaamse, de Franse en de Duitstalige Gemeenschap, het Vlaamse Gewest, Het Waalse Gewest, het Brusselse Hoofdstedelijk Gewest, de Vlaamse Gemeenschapscommissie, de Franse Gemeenschapscommissie en de Gemeenschappelijke Gemeenschapscommissie betreffende de bouw en exploitatie van een gemeenschappelijk e-platform	08/08/2001
Samenwerkingsakkoord tussen de Federale Staat, de Vlaamse, de Franse en de Duitstalige Gemeenschap, het Vlaamse Gewest, het Waalse Gewest, het Brusselse Hoofdstedelijke Gewest, de Franse Gemeenschapscommissie en de Gemeenschappelijke Gemeenschapscommissie betreffende de Principes voor een geintegreerd e-government en de bouw, het gebruik en beheer van ontwikkelingen en diensten van een geintegreerd egovernment.	28/09/2006
Accord de coopération entre la Région wallonne et la Communauté française portant sur le développement d'une initiative commune en matière de partage de données et sur la gestion conjointe de cette initiative	23/05/2013
Samenwerkingakkoord tussen de federale, gewestelijke en gemeenschapsoverheden voor het harmoniseren en uitlijnen van de initiatieven die de realisatie van een geïntegreerd e-government beogen	26/09/2013

Annexes to Chapter 6. The Influence of Public Values on User Participation in e-Government: An Exploratory Study

Annex 6.1 - Semi-Structured Interview Guide (Qualitative)

- When were you first involved with project X? How did you get involved ?
- What motivated you to participate in the project?
- What does the project/organization mean to you?
- Which goals are the most important to achieve in the project?
- What did you expect from the other participants of the project?
- What did you think the result would be?
- Is the reality now different from what you initially expected?
- What do you think are the most important characteristics that you need to have in order to contribute to the project?
- Why does your organization include users in the creation of e-services?
    - At which stage?
- How does your organization include users and how often?
    - Why did you choose this particular method?
    - Did the method successfully implement the targeted value?
- Can you give me an example in which it is difficult to make a decision?
- How did you deal with this situation?

Annex 6.2 - Ranking Game (Quantitative) (Embedded in Interview)

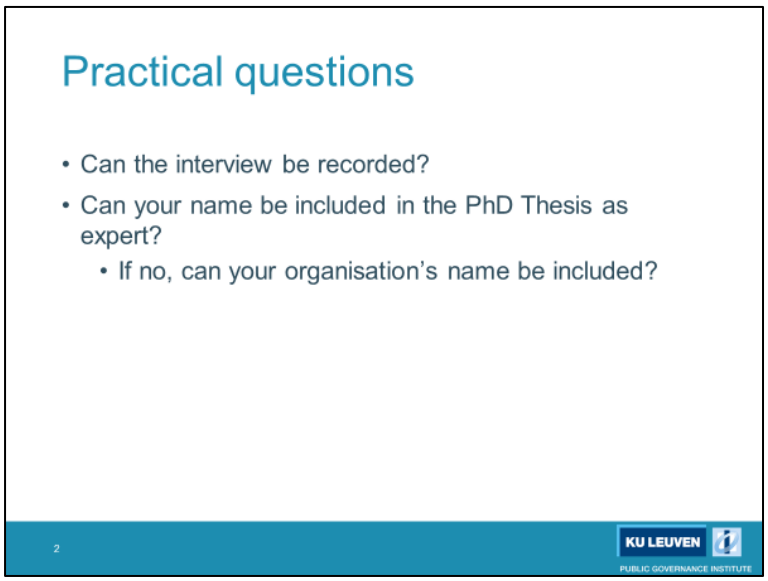
What are/were the most important values for you in the context of your project?

Public Value	Ranking Position
Efficiency	
Effectiveness	
Quality	
Satisfaction	
Sustainability	
Mutual learning	
Trust	
Being considerate of clients' needs: accountable, responsive, and transparent	
Being considerate of clients' capacities	
Reciprocity	
Individual freedom	
Participation	
Empowerment	
Inclusion	
Social capital	

Note: The list of public values was shuffled for each respondent to ensure that no bias could emerge on the basis of the listing of the public values.

Annexes to Chapter 7. A Governance Framework for a Digital Public Administration

Annex 7 – Validation Interview Summary and Questionnaire)



Expert Interview Structure

1. Conceptual Framework
   - Overall objective
   - Building & validating GoF-DiTPA
   - GoF-DiTPA
2. Interview Round
3. Follow-up

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1. Conceptual Framework

Overall Objective

"Provide a scientifically underpinned conceptual framework

that can inform decision makers on how to further **facilitate** the digital transformation of the public administration,

bearing in mind the overall objective of creating public value."

→ ***To facilitate*** **is key – No single approach can fit all public administrations!**

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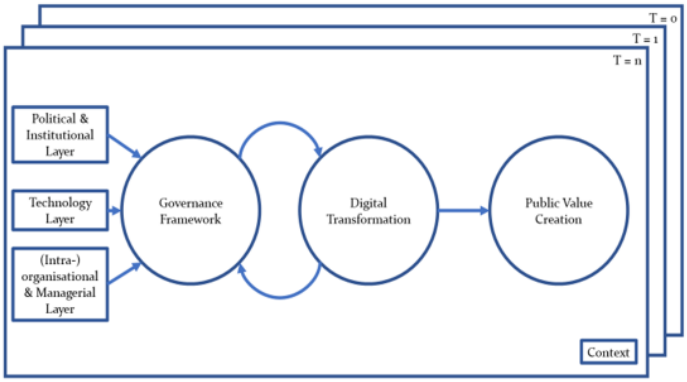
Digital Transformation

"A process where internal and external public administration factors, related to digital technologies, create disruptions

that trigger responses from public administration organizations,

that thereby seek to alter their public value creation,

while managing structural and organizational changes that affect the outcomes of this process."

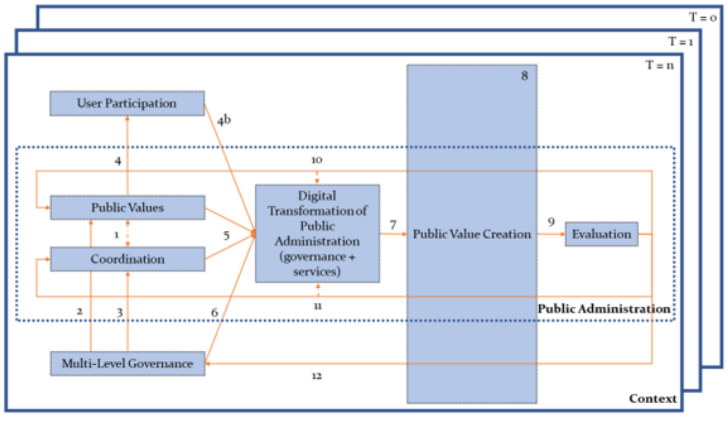


Building & Validating GoF-DiTPA

Conceptual framework: "A map of how all the literature works together in a particular study" (Collins & Stockton, 2018)

- Bringing together research conclusions (presented in PhD thesis) and existing literature.
- Validation interviews with academic and practitioner experts.

Governance Framework facilitating the Digital Transformation of Public Administration



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Influencing Factors: Public Values (1/2)

- **Public Values**
  - Provide direction to Strategy and Vision of the digital transformation.
  - Digital transformation requires a focus on specific public values (NPG + DEG).
  - Digital transformation requires an overarching public values perspective, given its influence on other domains (political role) and the long-term influence.
- **Connection to Coordination**
  - Coordination instruments can be applied to ensure coherence on public values (indirect effect on digital transformation).

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Influencing Factors: Public Values (2/2)

- **Connection to Multi-Level Governance**
  - Public values strived for by other public administrations can influence the digital transformation of the public administration.
  - The higher the degree of interwovenness, the more important it is to take the public values balance into account (indirect effect).
  - Legally binding requirements provide limited leeway for the lower public administration (indirect effect).
  - However: Risk for conflict → Active conflict resolution and use of coordination.

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Influencing Factors: Coordination (1/2)

- **Coordination**
  - Awareness on the importance of coordination is necessary for a digital transformation.
  - Establishment of coordination among organisations is required for a digital transformation.
- **Connection to Public Values**
  - Coordination instruments can be applied to ensure coherence on public values (indirect effect on digital transformation). (ref. previous slide)
  - Successful digital transformation requires alignment between strived for public values and applied coordination instruments.

Influencing Factor: Coordination (2/2)

- **Connection to Multi-Level Governance**
  - Digitally oriented policies of a higher public administration influence the coordination of lower public administrations (indirect effect on digital transformation). The effect is higher when there is a legally binding requirement.
  - Alignment of coordination instruments with other public administrations facilitates the digital transformation. The higher the interwovenness, the more important coordination becomes.

Influencing Factor: Multi-Level Governance

- A policy developed by a higher public administration can lead to an agenda-setting in a lower public administration.
- A similar effect can take place among public administrations of the same level.

Influencing Factor User Participation

- User Participation can influence the direction of the digital transformation, leading as such to a specific direction of the public value creation.
- The public values strived for by the public administration can influence the selection of user participation methods, and as such the participation and the digital transformation.

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Evaluation of Public Value Creation via Digitally Transformed Public Administrations

- **Four dimensions are taken into account:**
  - Internal
    - Improved Public Services
    - Improved Administration
  - External – context
    - Improved Social Value
    - Improved Individual Value
- **Evaluation feeds back to:**
  - Public Values
  - Coordination
  - Multi-Level Governance

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2. Interview Round

General Questions

1. Do you recognise the influencing factors based on your expertise?
2. To what extent do you agree/disagree with the conceptual relationships presented in the previous slide?
3. Do you see other relationships between the factors that should be taken into account?
4. Is there any missing element in the GoF-DiTPA model, based on your expertise?

Extra questions on Factor User Participation

1. Can user participation also influence the public values strived for?
2. Can user participation also influence the applied coordination and related coordination instrument?

Questions on Facilitation of a Digital Transformation

1. From the four described factors, what is according to you the **most** important factor to influence a digital transformation of a public administration?
2. From the four described factors, what is according to you the **least** important factor to influence a digital transformation of a public administration?
3. What does the creation of public value refer to according to you?
4. (For those who read the document: Should more attention be devoted to the connection between the digital transformation and the public value creation?)

Questions on Evaluation

1. To what extent do you agree/disagree with the approach presented in previous slide concerning evaluation?
2. Evaluation is a constant process and should not only take place at the end of the process. How can we indicate that this is an ongoing process in the GoF-DiTPA figure?

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3. Follow-up

Follow-up

Do you have any other question or comment?

Would you like to discuss any other point?

Thank you for your active contribution!

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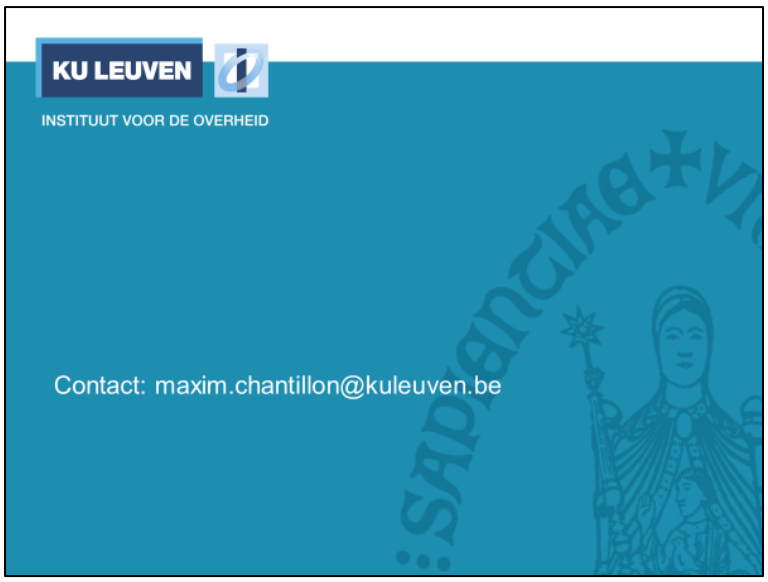
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Annex Doctoraten in de Sociale Wetenschappen en in de Sociale en Culturele Antropologie

https://soc.kuleuven.be/fsw/doctoralprogramme/ourdoctors

Summary in English

This thesis studies what governance framework and related factors facilitate a digital transformation of public administration, with the overall objective of creating public value. Public administrations do not just launch digitalisation efforts on a voluntary basis, but are rather forced to take action based on a number of changing societal evolutions – the ongoing technological evolutions and emergence of disruptive digital technologies, changing user expectations on the services offered to them, and budgetary difficulties faced by governments and decision makers. As public administrations are expected to create public value, they are required to follow those societal evolutions and to make use of new disruptive digital technologies. In order to create public value in this changing context, public administrations invest in a digital transformation. A concept receiving increasingly more attention from academics and decision makers. A digital transformation of the public administration will require a framework that facilitates such a transformation.

On the basis of a literature review, a number of highly important but understudied factors which can be considered to impact a digital transformation, was identified. The research focuses on four factors: (1) Internal coordination within a public administration, (2) public values striven for by a public administration, (3) the role of multi-level governance and (4) the role of user participation. From a theoretical point of view these different factors can be related to the (intra-)organisational and managerial layer impacting a digital transformation (factor coordination), the political and institutional layer impacting a digital transformation (factor public values), and the wider context in which a public administration functions and that impacts a digital transformation (the factor multi-level governance and the factor user participation). The research scope taken for this research is the Belgian federal administration, embedded in Belgium and the European Union.

The research objective has been studied on the basis of a general research question and several sub-research questions. The research on and the answers to those sub-research questions are presented in the Chapters 2 to 6. In Chapter 2 research on the relation between public values, public value creation and the e-governance policy of public administrations is presented. Chapter 3 presents research on the relation between public values and the applied coordination instruments in e-governance policies. Chapter 4 is focused on the organisational structures and use of coordination instruments in the geospatial e-governance policy. Chapter 5 presents research on the role of multi-level governance in the e-governance policy of public

administrations. Chapter 6 completes the research on the different factors by looking at the relation between public values and user participation methods.

On the basis of the conducted research, the expertise build up as a researcher, the insights of the academic literature, and expert validation interviews, the *Governance Framework facilitating the Digital Transformation of Public Administration* was created, as an answer to the main research question and the research objective. The governance framework consists of four interacting facilitating factors, i.e. two Internal Facilitation Factors and two External Facilitation Factors. The two Internal Facilitation Factors are public values and coordination. The two External Facilitation Factors are user participation and multi-level governance. Those facilitating factors can have a direct and indirect effect on the facilitation of the digital transformation. A digital transformation of the public administration will – if successful – lead to the creation of public value. This public value creation can have an external and an internal component. An evaluation has to take place in order to understand to what extent public value was created, what the role of the digital transformation was in the creation of this public value and how the facilitating factors contributed to this digital transformation. At the same time, it has to be underlined that the evaluation has to contain a monitoring component, to understand already during the digital transformation process and the public value creation if certain aspects require an improvement. A final aspect of the framework is the time perspective: The digital transformation, facilitated by the four facilitating factors, is a constantly ongoing and endless process that strongly depends on the emergence and impact of disruptive digital technologies.

This thesis has contributed to the academic literature by studying a number of factors and their relations, and by bringing this information together into a governance framework that can support public administration decision makers in facilitating a digital transformation within their public administration. As indicated in the thesis, it has to be underlined that each public administration is different and that also other factors (such as lack of resources, existing legal framework(s) etc.) can impact this digital transformation. Consequently, this research leads also to a number of follow-up questions that can be tackled in future studies and research activities. One can thereby think of studying other facilitating factors, and not only within the Belgian federal administration – i.e. the research scope of this thesis – but also in other public administrations at national, regional or local level. Furthermore, the research focuses on a digital transformation process, while public administrations have so far focused on e-government and e-governance processes. Also this relationship deserves increased attention in future research. This thesis has aimed to provide a view on how a digital transformation of a public administration can be facilitated and invites other scholars to continue the quest for

understanding how a digital transformation can be facilitated, as in the end we – as service users and citizens – can benefit from it.

Samenvatting in het Nederlands

Deze thesis tracht te onderzoeken welk bestuursraamwerk en welke gerelateerde factoren een digitale transformatie van de overheid faciliteren, met als doel het creëren van publieke waarde. Publieke administraties starten hun digitaliseringsinspanningen niet zomaar op vrijwillige basis, maar worden eerder gedwongen om actie te nemen op basis van een aantal maatschappelijke evoluties, zoals voortdurende technologische evoluties en de opkomst van disruptieve digitale technologieën, veranderende gebruikersverwachtingen over de diensten die worden aangeboden, en budgettaire moeilijkheden waarmee overheden en beleidsmakers worden geconfronteerd. Aangezien van overheidsdiensten wordt verwacht dat zij publieke waarde creëren, dienen zij deze maatschappelijke evoluties te volgen en gebruik te maken van de nieuwe disruptieve digitale technologieën. Om in deze veranderende context publieke waarde te creëren, investeren publieke administraties in een digitale transformatie. Een concept dat steeds meer aandacht krijgt van academici en beleidsmakers. Voor een digitale transformatie van de overheid is een kader nodig dat een dergelijke transformatie mogelijk maakt.

Op basis van een literatuuronderzoek zijn een aantal uiterst belangrijke, maar nog onvoldoende bestudeerde factoren geïdentificeerd die van invloed kunnen zijn op een digitale transformatie. Het onderzoek richt zich op vier factoren: (1) Interne coördinatie in een publieke administratie, (2) publieke waarden die door een publieke administratie worden nagestreefd, (3) de rol van multi-level governance en (4) de rol van gebruikersparticipatie. Vanuit theoretisch oogpunt kunnen deze verschillende factoren worden gerelateerd aan de (intra-)organisatorische en bestuurlijke laag die een digitale transformatie beïnvloedt (factor coördinatie), de politieke en institutionele laag die een digitale transformatie beïnvloedt (factor publieke waarden), en de bredere context waarin een publieke administratie functioneert en die een digital transformatie beïnvloedt (de factor multi-level governance en de factor gebruikersparticipatie). Voor dit onderzoek werd de Belgische federale overheid, dewelke is ingebed in België en de Europese Unie, als onderzoekscontext genomen.

De onderzoeksdoelstelling is onderzocht aan de hand van een algemene onderzoeksvraag en verschillende deelonderzoeksvragen. Het onderzoek naar en de antwoorden op deze deelonderzoeksvragen worden voorgesteld in de hoofdstukken 2 tot en met 6. In hoofdstuk 2 wordt onderzoek gepresenteerd naar de relatie tussen publieke waarden, de creatie van publieke waarde en e-governancebeleid van publieke administraties. Hoofdstuk 3 presenteert onderzoek naar de relatie tussen publieke waarden en de toegepaste coördinatie-instrumenten in e-

governancebeleid. Hoofdstuk 4 is gericht op de organisatiestructuren en het gebruik van coördinatie-instrumenten in het geografisch e-governancebeleid. Hoofdstuk 5 presenteert onderzoek naar de rol van multi-level governance in de e-governancebeleid van publieke administraties. Hoofdstuk 6 vervolledigt het onderzoek naar de verschillende factoren door te kijken naar de relatie tussen publieke waarden en gebruikersparticipatiemethoden.

Op basis van het uitgevoerde onderzoek, de expertise opgebouwd als onderzoeker, de inzichten uit de academische literatuur en de validatie-interviews met deskundigen, is het *Bestuursraamwerk ter facilitering van de Digitale Transformatie van de Publieke Administratie* tot stand gekomen, als antwoord op de hoofdonderzoeksvraag en de onderzoeksdoelstelling. Het bestuursraamwerk bestaat uit vier op elkaar inwerkende faciliterende factoren, namelijk twee interne faciliterende factoren en twee externe faciliterende factoren. De twee interne faciliterende factoren zijn publieke waarden en coördinatie. De twee externe faciliteringsfactoren zijn gebruikersparticipatie en multi-level governance. Deze faciliterende factoren kunnen een direct en indirect effect hebben op de facilitering van de digitale transformatie. Een digitale transformatie van de publieke administratie zal – indien succesvol – leiden tot het creëren van publieke waarde. Deze creatie van publieke waarde kan een externe en een interne component hebben. Een evaluatie dienst plaats te vinden om te begrijpen in welke mate publieke waarde is gecreëerd, wat de rol van de digitale transformatie was bij het creëren van deze publieke waarde en hoe de faciliterende factoren hebben bijgedragen tot deze digitale transformatie. Tegelijkertijd dient te worden onderstreept dat de evaluatie een monitoringcomponent moet bevatten, om reeds tijdens het digitale transformatieproces en de creatie van publieke waarde te begrijpen of bepaalde aspecten verbetering behoeven. Een laatste aspect van het kader is het tijdsperspectief: De digitale transformatie, gefaciliteerd door de vier faciliterende factoren, is een voortdurend en eindeloos proces dat sterk afhankelijk is van de opkomst en impact van disruptieve digitale technologieën.

Dit proefschrift heeft bijgedragen aan de academische literatuur door een aantal factoren en hun relaties te bestuderen, alsook door deze informatie samen te brengen in een bestuursraamwerk dat beleidsmakers in de publieke administratie kan ondersteunen bij het faciliteren van een digitale transformatie binnen hun publieke administratie. Zoals in het proefschrift wordt aangegeven, moet worden onderstreept dat elke publieke administratie anders is en dat ook andere factoren (denk aan een gebrek aan middelen, bestaande wettelijke kaders etc.) een digitale transformatie kunnen beïnvloeden. Bijgevolg leidt dit onderzoek ook tot een aantal vervolgvragen die in toekomstige studies en onderzoeksactiviteiten aan bod kunnen komen. Zo kan men denken aan het bestuderen van andere faciliterende factoren, niet

alleen binnen de Belgische federale overheid – het onderzoeksdomein van deze thesis – maar ook bij andere overheidsdiensten op nationaal, regionaal of lokaal niveau. Bovendien richt het onderzoek zich op een digitaal transformatieproces, terwijl publieke administraties zich tot nu toe vooral hebben gericht op e-government en e-governance processen. Ook deze relatie verdient meer aandacht in toekomstig onderzoek. Dit proefschrift heeft tot doel een beeld te schetsen van hoe een digitale transformatie van een publieke administratie kan worden gefaciliteerd en nodigt andere onderzoekers uit om verder te gaan met de zoektocht naar hoe een digitale transformatie kan worden vergemakkelijkt, aangezien wij – als gebruikers van diensten, alsook als burgers – daar het uiteindelijke genot van zullen hebben.