

Bachelor Thesis

Local Level Strategic Management of Digital Transformation in the Public Sector

To What Extent Independent Cities in North Rhine-Westphalia Aim to Pursue

Digital Transformation

Manasvi Jasmin Timm, s2597098

First Supervisor: Dr. Veronica Junjan

Second Supervisor: Dr. Caroline Fischer

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Faculty of Behavioral, Management and Social Sciences, University of Twente

Institut für Politikwissenschaft, Westfälische Wilhelms – Universität Münster

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Abstract

One of the key functions of states and their administrations is public service delivery. In an era of digital transformation, where various fields of everyday life in the private sector are already deeply impacted by information and communication technology (ICT), governments and their public administration apparatus are under pressure to transfer their services into digital formats, too. However, despite extensive scholarly attention for the topic of digital transformation, the explicit field of digital transformation on the local level appears to be understudied. To contribute to the filling of this gap, this thesis asks to what extent district-free cities in North-Rhine Westphalia are explicitly aiming to pursue digital transformation. Data used to answer this question were strategy papers of district-free cities that include measures and initiatives on how to pursue digital transformation. These were smart city concepts and digital strategies. The Digital Government Evolution Model by Janowski (2015) provided the foundation for the analytical framework. The main findings suggest that there is a high variance in the extent to which cities formulate goals or present their planned measures to the public. Furthermore, the findings suggest that digital transformation measures on the local level are highly contextualized.

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1. Introduction

One of the key functions of states and their administrations is public service delivery. In an era of digital transformation, where various fields of everyday life in the private sector are already deeply impacted by information and communication technology (ICT), governments and their public administration apparatus are under pressure to transfer their services into digital formats, too.

This is likewise the case for Germany, whose public sector is holding the image of lagging far behind the private sector when it comes to digital transformation. This image is supported by the European Commission's Digital Economy and Society Index (DESI), which monitors the digital development of EU Member States. It shows that during the last years, Germany's score for digital public services was consistently below average compared to the European average (European Commission, 2022). And although the score has risen steadily within the last few years, the value for 2022 shows that the development rate has even slowed down compared to previous years. According to Mergel (2021) "These developments can be traced back to delays in supporting policy developments, lacking investments for necessary modernisation and the resulting backlog in IT capacity and failures to update IT legacy systems." (Mergel, 2021, p. 332). One policy adoption to counteract of recent years has been the online access law (Online-Zugangsgesetz – OZG), which came into force in 2017. It obliges the federal and state governments to additionally offer 575 administrative services electronically via administrative portals and to link these administrative portals into a portal network by the end of 2022. By that it was intended to reduce administrative burden and improve access to public services (Mergel, 2021). Interestingly enough, the online access law does not explicitly mention municipalities on the local level and leaves it up to the states to integrate them in the implementation process (Mergel, 2021, p. 336).

Nevertheless, within the last years since the OZG was adopted, German municipalities have increasingly issued strategy papers, in which they formulate their approach on how to develop and transform digitally. This Bottom-Up development of local level impulses to foster digital transformation contrasts with the Top-Down approach embodied by the OZG and raises questions on how digital transformation is approached on the local level. From the standpoint of academic research, it can be stated that the topic of digital transformation in general and of public administration specifically does not lack academic attention and the body of literature on that matter is broad. A lot of recent literature focuses on factors for success and failure of digital transformation (Hernandez, Font, & Benitez, 2020; Tangi, Janssen, Benedetti, & Noci, 2021; Meuche, 2022), sometimes with an additional focus on for example values (Cañete, Torres, & Astudillo, 2019; Siegel & Gabryelczyk, 2021). In the light of the COVID-19 pandemic, initiatives and the role of the pandemic as an accelerator of digital transformation have been discussed in general (Gabryelczyk, 2020) and in country specific cases as for example Brazil (Tavares, Joia, & Fornazin, 2021) (Spanó & Silva, 2022) or Scotland (Gangneux & Joss, 2022). Furthermore, there is a variety of country case studies available that deal with digital public administration transformation in country specific settings, as for example Denmark (Scupola & Mergel, 2022) (Scupola, 2018),

Italy (Datta, 2020), Austria (Edelmann & Mergel, 2021) (Edelmann, Mergel, & Lampoltshammer, 2023), Turkey (Avaner & Recep, 2019), the Netherlands (Tangi, Janssen, Benedetti, & Noci, 2020), or Sweden (Lindgren & van Veenstra, 2018). However, the studies vary immensely in their contents and foci due to a lack of a unified definition of digital transformation and how to approach it methodologically. That is why there is also literature, that deals with the conceptualization of digital transformation (Mergel, Edelmann, & Haug, 2019). For the case of Germany, literature on digital transformation in public administration revolves around the study of digital competences and employees (Wrede, Rodildos Anjos, Ketschau, Broding, & Claassen, 2021) (Koddebusch, Halsbenning, Kurse, Räckers, & Becker, 2022), or the question on how Germany can catch up with leading nations (Pfaffl, et al., 2022).

However, what lacks is a more extensive body on digital transformation on a local level. Bousdekis & Kardaras (2020) examine the digital transformation of local governments in Greece. For the case of Germany, Kuhlmann & Heuberger (Janowski, 2015)(2023) study implementation, impacts and constraints of digital transformation on local governments. Apart from that, local level digital transition is scarcely studied and calls for more scholarly attention that investigates current phenomena such as the increasing adaptation of digitalization strategy papers of German municipalities and cities. Since there are no formal requirements for their preparation, the strategies vary considerably in terms of their scope, thematic range and preparation process. This raises questions of what these strategy papers entail in regard to public administration: What are their objectives? How can they be characterized? What are convergences and differences between the scope of the strategy papers and the goals, initiatives and measures mentioned within? Against this backdrop, this research aims at shedding a light on these strategy paper and add to the existing body of knowledge by fostering understanding of how digital transformation is approached locally by analyzing the objectives of the strategy papers. More specifically, the goal is to look at independent cities in the Germany state of North-Rhine Westphalia and how they plan on transforming digitally. Therefore, the main research question is as follows:

To what extent are district-free cities in North-Rhine Westphalia explicitly aiming to pursue digital transformation?

In order to answer this main research question, four sub-questions are derived. Each sub-questions draws upon a stage of digital government, that Janowski (2015) developed in their Digital Government Evolution Model, which provides the elements of the analytical framework of this study. Each stage embodies a certain degree or maturity of digital government and therefore, depending on what stage initiatives mentioned in the strategy papers relate to, conclusions on the depth and to what extent the initiatives foster digital transformation, can be drawn. The sub-questions are as follows:

- (1) To what extent do strategy papers explicitly plan actions that aim at digitizing public services?
- (2) To what extent do strategy papers plan actions that aim at developing an electronic government system?
- (3) To what extent do strategy papers plan actions that aim at developing an electronic governance system
- (4) To what extent do strategy papers plan actions that aim at developing a policy-driven governance system?

The study contributes to the existing scholarship in various ways by addressing the proposed research questions. Firstly, as the short literature study showed, research that analyzes digital transformation explicitly on a local level is still in development. By summarizing and describing existing digital strategies, this study will add to the body of empirical literature in the German context. Secondly, it tests the applicability of Janowski's theoretical model to a real-life context. This relates directly to Janowski's self-stated limitation of their model, which lacks "policy and practice-based evaluation" (Janowski, 2015, p. 233) and might discover points for improvement of the theoretical model. Last but not least, it opens scientific knowledge about digital transformation in Germany to a wider scientific public as this research is written in English. Paper about digital transformation in the German context in English are uncommon and this work makes knowledge about the digital transformation in Germany more accessible for other scholars, especially for those who want to study digital transformation from a comparative perspective, but who are held from information about Germany by language barriers.

Societal relevance for Germany lies in the discussion of the digital transformation topic as such. As already stated, Germany has the reputation of lagging behind when it comes to digital transformation. Regarding the federal structure of Germany, it seems logical that such a transformation with its enormous impact on society can only be smoothly done, if such transformation is promoted on all levels. To academically analyze and understand how this is done on the local level, will also help policymakers and public managers to apply the lessons learned in their further endeavor to effectively transform Germany digitally.

In order to address the research questions, the thesis is structured into five sections. The succeeding chapter offers the theoretical foundation for the case study by introducing the concepts of strategic management, digital transformation and Janowski's Digital Government Evolution Model, before developing the analytical framework of the study based on these concepts. Thereafter, the methodology is outlined, including elaborations on the research design, the method of data collection and method of data analysis. The fourth chapter analyzes the strategy papers of district-free cities by applying the analytical framework to the empirical evidence. This includes the reporting of results and discussion of the

observations from the data. Finally, the thesis concludes by answering the main research question, as well as addressing limitations of the study, suggestions for further research and the added value of this research.

2. Theory

This chapter provides an overview of the theoretical foundation of this thesis. Firstly, the concept of strategic management will be introduced to tap into the legitimacy and importance of strategic papers, which will provide the data for the analysis. Secondly, the notion of digital transformation will be elaborated, and Janowski's Digital Government Evolution Model will be presented as it provides the essential elements for the analytical framework of this research. Lastly, the concept of strategic management and digital government transformation will be assembled into an analytical framework.

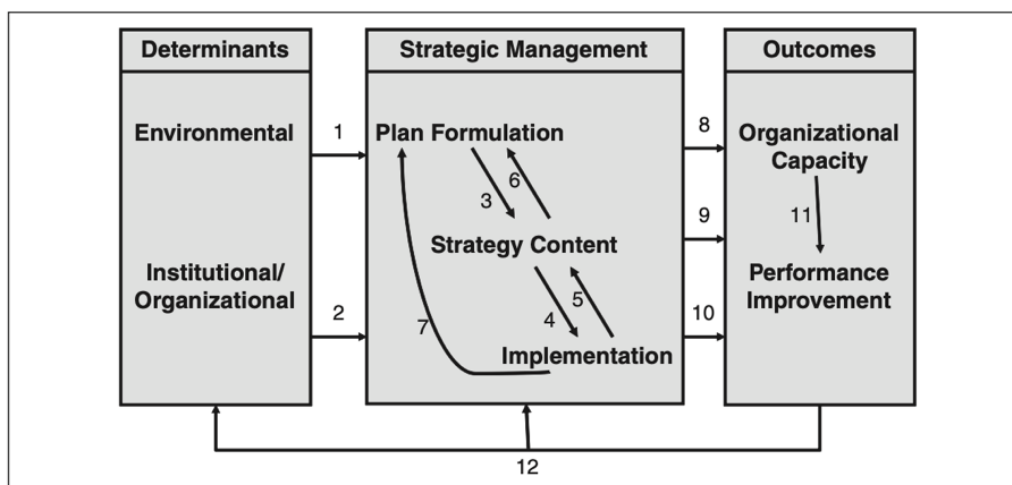
2.1 Strategic Management

2.1.1. Components of strategic management

In order to answer the research question of how district-free cities in North Rhine-Westphalia are aiming at transforming digitally, this bachelor thesis deals with (parts of) strategy papers that address the digital transformation such as smart city concepts or digitalization strategies. This inevitably leads to the necessity of dealing with strategies on a conceptual-theoretical level, which will be covered in the following subchapter. The following section will therefore focus on the concept of strategic management. Poister et al.'s (2010) conceptual framework on strategic planning and management will serve as an entry point for this. Their model, which is presented in figure 1, shows three building blocks: determinants induce strategic management, which then leads to outcomes. The following paragraphs will elaborate on each building block to draw a picture of the strategic management biosphere.

Figure 1

Strategic planning and management conceptual framework.



Note. From Poister et al. (2010), p. 525.

Determinants are factors that influence an organization's approach to strategic management. One category of determinants that the model describes is the *environment* in which an organization operates as "[...] the extent to which that environment is characterized by stability or turbulence is likely to influence the perceived need for strategic planning and perhaps the type of strategy that might be most beneficial [...]" (Poister et al., 2010, p.525). To be more specific, this includes such things as the "[...] political context, the area of policy with which it is concerned, the concerns of constituency groups and policy advocates, and trends in the substantive area in which it operates" (Poister et al., 2010, p. 525). As a second category, *institutional context* and *organizational characteristics* are considered as determinants. The institutional context is understood to be the (inter-)governmental system and its outputs in which the public organization is embedded. The governance structure within a country or legislative and executive directives are examples for elements that shape the institutional context, in which an organization has to operate and which it has to consider when laying out a strategy. On the organizational level, factors such as an organization's structure, its resources, and capabilities that come with it influence the strategic management.

Strategic management as such consists of the dimensions *plan formulation*, *strategy content* and *implementation*. The dimensions of *plan formulation* and *implementation* in particular indicate that strategic management can be seen primarily as a process. Put simplistically, the first step is to formulate a strategy, taking into account the environmental, institutional and organizational context. The strategy content resulting from this process is then implemented with equal consideration of the determinants that have already played a role in the plan formulation. From this perspective, it becomes clear that the conceptual difference between strategic planning and strategic management is that planning is a part of strategic management, and that there is more to it than mere plan formulation.

This understanding of strategic management is also found in Siegel (2019), who also follows a distinction between *strategy content* and *strategy processes* in their discussion of the concept. In their conceptualization, *strategic process* encompasses four dimensions. Just as Poister et al.'s (2010) model, Siegel's (2019) model recognizes *strategy formulation* as a process within strategic management, which involves the assessment of challenges and developments ahead, how an organization intends to deal with it and how it these intentions are put into practice through analysis, reflection and decision-making. *Strategy implementation* as part of strategic management then covers the "[...] concrete actions, budgeting process, performance management, structural change and organizational learning" (Siegel, 2019, p. 337) in order to execute the formulated strategy. In addition to that, Siegel (2019 (Proeller, Kroll, Krause, & Vogel, 2014)) conceptualizes *strategy evaluation* and subsequent *reformulation* of strategic plans as sub-processes of strategic management.

Strategy content comprises three dimensions. First, a strategy identifies *fields of action* or *strategic issues* that locate problems and challenges that need to be tackled. Second, there are the *goals*, which can be understood as a declaration of intent of a state to be achieved in the future. Thirdly, a strategy also

contains *measures of success* that enable evaluation of the output and performance after implementation. Examples for such measures in a public administrative context are legitimacy, efficiency, effectiveness, professionalism, legality, transparency or sustainability. On a higher level, "Strategies can be understood not only as an aspirational way to achieve goals, but also as the way in which an organization actually engages with identified areas for action." (Siegel, 2019, p. 336, translation from German to English by the author of this thesis).

The *outcomes* of strategic management according to Poister et al.'s (2010) model are twofold: On the one hand, strategic management bears the potential to increase the *organizational capacity*, which can be understood as the possible level of public service outputs a public organization is able to provide for its stakeholders and thus fosters the viability of an organization. On the other hand, strategic management may improve the *performance* of a public organization. This view however seems to be outdated as it is contested by scholars such as Proeller et al. (2014) whose study showed no support for a direct effect of strategic management on an organization's performance. However, they find that strategic management has an indirect effect on performance via the increasing effect strategic processes have on an *organization's capability* and hence can still be deemed important.

2.1.2. *The purpose of strategic management in public administration*

The need for strategic management in public administration arises in the face of megatrends and the challenges they embody for the political and administrative level. One of those trends is the digital transformation, as the upswing and augmentation of ICT have deeply changed society and its expectations of administrative adjustments to public service delivery. Strategic management does not only assign a reactive role to a public administration in view of current and anticipated challenges to its public service delivery. Rather, strategic management enables a public administration to take an active role in shaping the future by consciously addressing expectations about the future and reflecting on how it wants to position itself to improve its capacity to act (Siegel, 2019). More specifically, strategic management provides different kinds of orientations (Siegel, 2019). Firstly, *success orientation* reflects the concretization of ideas on how a public organization measures success and what goals are to be set. Secondly and strongly connected to the first orientation, strategic management pursues a *goal orientation*, which means, that the organization's actions are guided by set goals. Thirdly, strategic management is characterized by a *medium- and long-term orientation* to plan in the face of foreseeable developments of the future. Furthermore, strategic management embodies a *holistic approach* to challenges that an organization faces instead of isolated problem solving and to do justice to the complexity of challenges and their need for a holistic and coordinated approach between sectors. Lastly, strategic management is marked by a *development orientation*, which can be seen as a 'planned evolution' of an organization to be able to react agilely to change in a dynamic environment. Hence, strategic management "[...] can and should consequently be understood as a clarification process, a process of understanding, a decision-

making process, and a process of change that is intended to increase the coherence of administrative action as a whole and to create an orientation framework for it." (Siegel, 2019, p. 335, translation by the author of this thesis).

2.2 Digital Transformation

2.2.1. Digital transformation: an evolutionary process

Even though an increasingly ubiquitous term in contemporary time, the concept of digital transformation lacks a unified definition, resulting in a variety of understandings of the concept. A first approach to explain digital transformation might be to think about what the terms *digital* and *transformation* mean. As a first approximation one could say that *digital* refers to the use of ICT, while *transformation* hints to a process or a development.

Based on existing literature and in an effort to build a general definition that applies to both the private and the public sector, Gong & Ribiere (2021) define digital transformation as "A fundamental change process, enabled by the innovative use of digital technologies accompanied by the strategic leverage of key resources and capabilities, aiming to radically improve an entity* and redefine its value proposition for its stakeholders." (*An entity could be: an organization, a business network, an industry, or society.)" (Gong & Ribiere, 2021, p. 12). In this definition, four aspects are central: First, digital transformation describes a *fundamental change process*. This implies that it is not just a simple advancement of existent structures, but a substantial development that brings about a radical change of or within an entity. Secondly, the use of *innovative digital technology*. Digital technologies such as information and communication technologies (ICT) play a major role. Both the way such technologies are used as well as technologies themselves constantly evolve in new and innovative ways and thereby spur the change processes. Thirdly, *strategic leverage of key resources and capabilities*. Not only does this imply that digital transformation requires resources, capacity and capabilities but that those need to be employed in a calculated and planned way. Last but not least, *radical improvement and redefinition of value propositions for stakeholders* indicate the purpose or intended consequence of digital transformation. The changes, put in motion by technology and strategic deployment of resources and capabilities, are intended to be an advancement in comparison to the previous state. Furthermore, the promised benefits of an entity for its stakeholders are expected to evolve profoundly. This emphasizes that the changes do not only have an internal effect within an entity but also an external effect on the stakeholders the entity serves. To put it in a nutshell, this definition includes what is happening (change process), how it is happening (via innovative digital technology and strategic deployment of resources and capabilities) and what the internal and external effects are (improvement and redefinition of value propositions).

In the public sector context, digital transformation is commonly used in connection with terms such as 'e-government' or 'digital government' or is even used synonymously with the terms

‘digitization’ and ‘digitalization’ (Mergel et al., 2019, p.3). This conceptual jungle and equivalent use of related concepts without distinction may be seen as the reason for its perception as a ‘buzzword’ by some (Mergel et al., 2019; Gong & Ribiere, 2021). Based on their literature review on digital government transformation, Liva et al. (2020) found out that digital transformation in the public sector context “tends to be seen as the process of moving from traditional government through the initial forms of eGovernment towards the Digital Government” (p. 504). This viewpoint can also be detected in the OECD’s Digital Government Index report of 2019, where digital government is referred to as representing an evolution from e-Government (OECD, 2020). What becomes apparent in this conceptualization of digital transformation is that the development from analogue government to e-Government to digital government proceeds stepwise. New digital services and ways of public service delivery do not arise out of the blue. The way in which new technologies are integrated into the public administration always build on the existent structures. Digital technologies are expected to “[...] not completely displace the existing administrative system, but complement and partially replace it in many parts, so that the administrative mode of operation changes. Technical and human action components will be newly related to each other in the existing administrative context and thus change the action patterns of administrations: Evolution instead of revolution.” (Schuppan, 2019a, 533 ff., translation by the author of this thesis). This all in all common understanding of digital transformation as an evolutionary process of stepwise implementation of technological innovations in public organizations, aiming at improving public service delivery, which ultimately lead to a restructuring of public services themselves, ways of public service delivery and administrative organizations can be traced back to Janowski’s (2015) Digital Government Evolution Model, which will be the theoretical foundation of this thesis’ analytical framework.

2.2.2. Digital Government Evolution Model

While it is undisputed that the emergence and partial shift of societal life into the digital sphere requires a follow up of political and administrative governance from the analog to the digital world, the multiple conceptualizations of this process (e.g. from digitization to digitalization to digital transformation) and the and stages (e.g. from e-government to e-governance to digital government) show that there is not yet a unified modeling of processes and stages. While much academic literature is limited to a descriptive portrayal of what supposed stages and their characteristics at a certain point in time are, there are few models and analytical frameworks that provide a coherent system of categorization based on fixed variables. One model that provides such an analytical framework is Janowski’s (2015) Digital Government Evolution Model. Based on a literature review, they have summarized how the concept of digital government evolution has evolved so far and worked out three variables that provide an analytical lens through which digital government evolution stages can be identified.

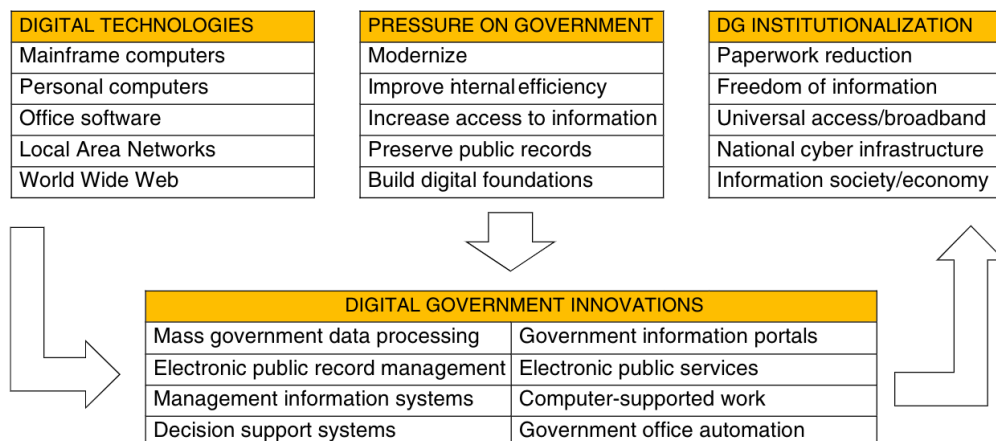
Figure 2*Digital Government Evolution Model*

STAGE	APPLICATION CONTEXT	CHARACTERIZATION		
		Internal government transformation	Transformation affects external relationships	Transformation is context-specific
Digitization	Technology in government	no	no	no
Transformation	Technology impacting government organization	yes	no	no
Engagement	Technology impacting government stakeholders	yes	yes	no
Contextualization	Technology impacting sectors and communities	yes	yes	yes

Note. From Janowski (2015), p.222.

Janowski's (2015) model proposes that digital government can be characterized along three binary variables, meaning that they can be answered with either 'yes' or 'no'. The first one describes whether technological implementations affect internal working and structures of government or not. The second describes whether technological implementations affect external relationship of governments with its customers or not. And following the same question pattern, the third variable describes whether technological implementations are applied in a specific context or not.

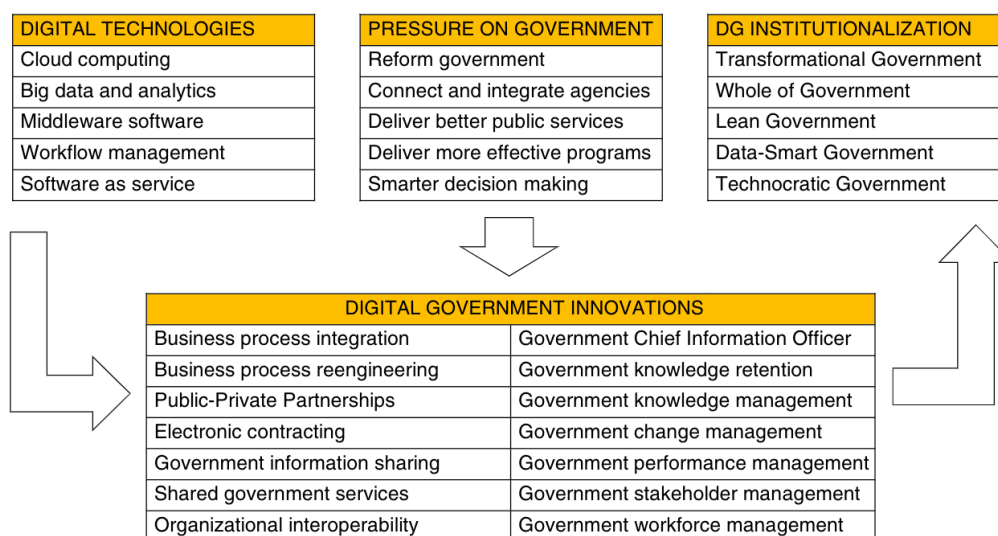
Theoretically, three binary variables allow for eight different combinations ($2^3 = 8$), thus eight states of digital government. The logical construction of the model however assumes that the presence of variable 2 requires the presence of variable 1, and accordingly the presence of variable 3 requires the presence of variable 1 and 2. Applied to what the variables describe that means that for a transformation to affect external relationships, it is assumed that internal working and structures need to be transformed beforehand. Correspondingly, transformations that depend on a particular context require the previous affection of internal working structure and external relationships. This reflects the conceptualization of digital government evolution as "[...] subject to emerging but regular patterns of growth, influenced by the larger social, economic and political environment, and possibly incremental progress." (Janowski, 2015, p.223) as well as digital government evolution as a process towards more complexity and specialization. Ultimately, this results in four possible combinations, which translate to four different stages of digital government: *Digitization* (Technology in government), *Transformation* (e-Government), *Engagement* (e-Governance) and *Contextualization* (policy driven e-Governance) (see Figure 1).

Figure 3*Digitization Stage Characteristics*

Note. From Janowski (2015), p. 231.

Based on Janowski's framework, the *digitization stage* applies, if all three variables are answered with a 'no'. How this stage looks like can be seen in figure 3. It encompasses the use of digital technologies such as mainframe computers, personal computers, office software, local area networks, and the world wide web. Determinant factors for the introduction of such technology are pressures on government to modernize, improve internal efficiency, increase access to information, preserve public record and build digital foundations. Concrete innovations that result from this are mass government data processing, electronic record management, management information systems, decision support systems, government information portals, electronic public services, computer-supported work and government office automation. The outcome of this is paperwork reduction, freedom of information, universal access/ broadband, national cyber infrastructure, and information society/ economy.

Thus, it comprises technology in government without an effect on either internal structures and procedures, nor external relationships and no application of technology in context specific settings. Technologies are generally introduced to complement existing public services by additionally offering them in a digital format. This includes for example the provision of access to government information in electronic formats (e.g. forms, opening hours, etc.), the development of government websites and portals, and the introduction of technological infrastructure in public administration (e.g. Wi-Fi, computers, etc.).

Figure 4*Transformation Stage Characteristics*

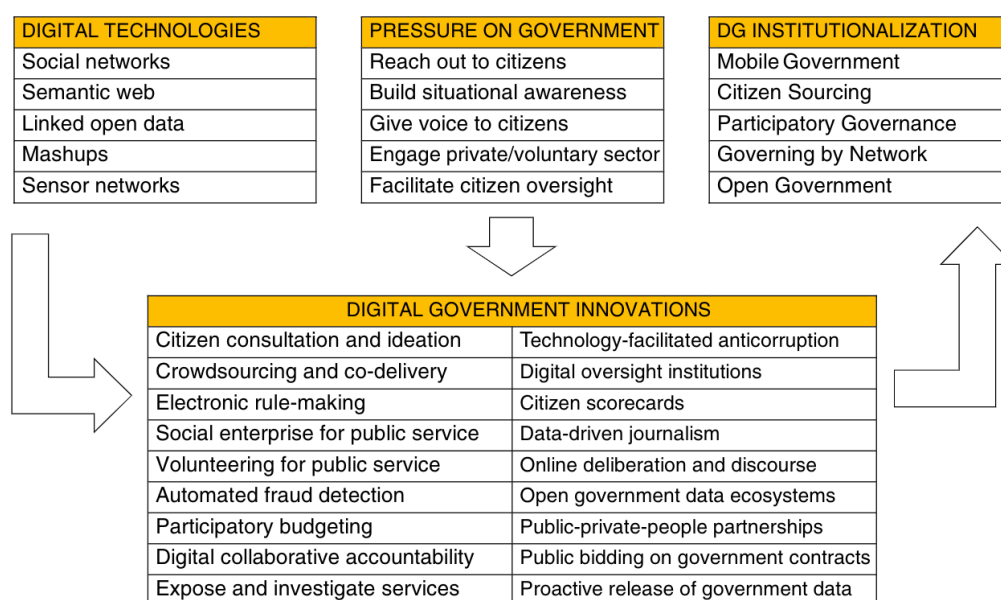
Note. From Janowski (2015), p.231.

In the *transformation stage*, technology affects the internal structures and procedures, but does not affect external relationships between government and external stakeholders such as citizens, businesses, or other public organizations. Likewise, the application context of the technologies is still general and not context specific. Figure 4 shows, that the transformation stage encompasses technologies such as cloud computing, big data and analytics, middleware software, workflow management and software as service. Determinants for this transformation are pressures on government to reform, connect and integrate agencies, deliver better public service, deliver more effective programs, and smarter decision-making. Innovations that result from this are business process integration and reengineering, public-private partnerships, electronic contracting, government information sharing, shared government services, organizational inoperability, implementation of government chief innovation officers, government knowledge retention, government knowledge management, government change management, government performance management, government stakeholder management, and government workforce management. The outcome of this transformation is an e-government, which is depicted by three characteristics in the literature: Firstly, e-Government is about providing government services online by turning offline services into online services via ICT in the first place (Viana, 2021; Mergel 2019). Within the framework of Janowski (2015), this feature of e-Government is already rooted in the previous digitization stage, which emphasizes the connection between the phases and that the stages are built on each other. Secondly, e-Government is about improving the operational efficiency of government agencies by decreasing the costs and time that are needed to provide a service (Viana 2021; OECD). Thirdly, e-Government is mostly limited to the improvement of internal working practices and routines without changes in the overall rational and values that guide bureaucracies in delivering their services, which relates to the first feature of simply and translating analog services into digital services by for example

making paper forms available as downloadable forms, without “[...] re-designing or re-evaluating the purpose and style of service delivery itself.” (Mergel, p.3). Thus, the *transformation stage* summarizes initiatives that for example aim at changing the organizational or working structure of public administration, including change management (e.g. via further education and training of staff to acquire the necessary skills for a new digital work environment), managing digital transformation projects, programs and portfolios, digital development after a stage of growth model that guides the stepwise implementation of digital technology, or information sharing and collaboration within the organization or with other public administration organizations or municipalities to foster e-Government.

Figure 5

Engagement Stage Characteristics



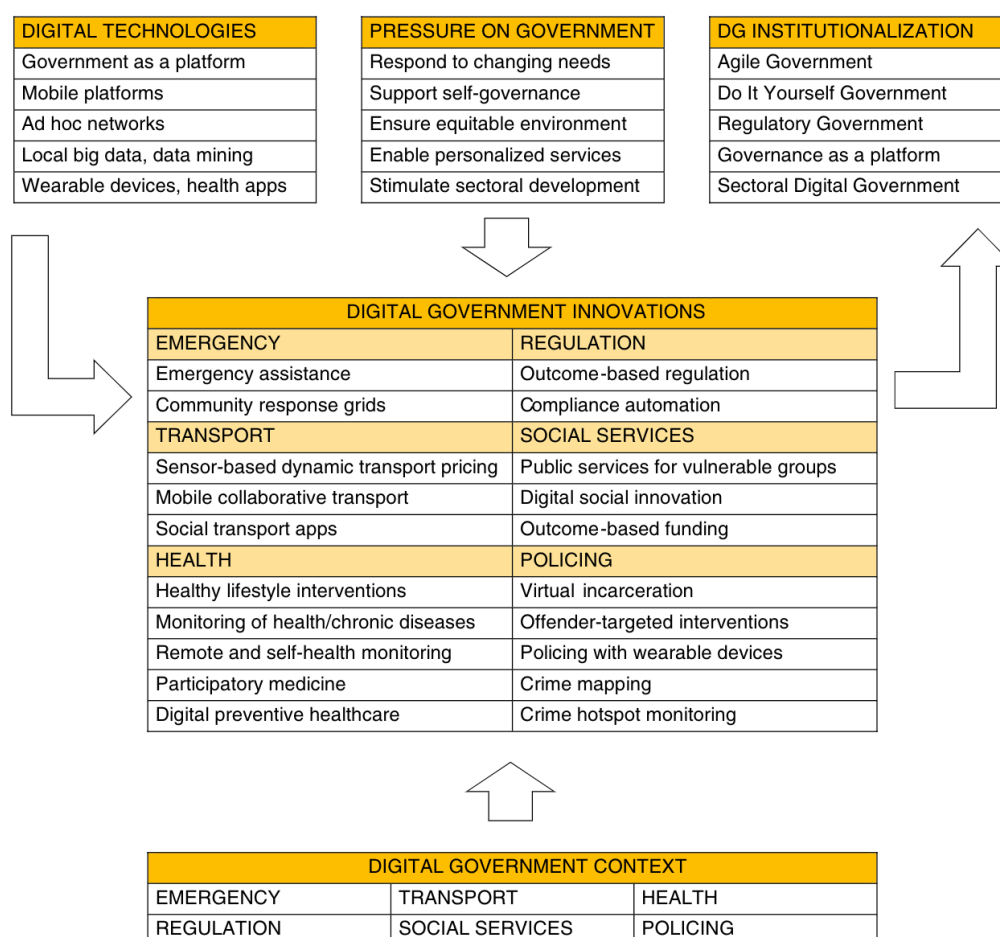
Note. From Janowski (2015), p. 232.

The *engagement stage* is centered around “the relationships between government and citizens, businesses and other non-government actors using digital technologies” (Janowski, 2015, p. 227). Technology is not used to only transform the internal of government organizations but also affects governments’ way of engaging with other stakeholders. More specifically, the relationship between government and its stakeholders shifts from a vertical or hierarchical relationship to a more horizontal relationship, which is captured in the additional depiction of this stage as the e-Governance stage. The use of technology is now not limited to the improvement of internal structures to make public service delivery more efficient but is now a means to improve the external relationship to stakeholders by fostering usage and democratic values such as acceptance, participation of stakeholders in public value creation, transparency and accountability, and trust. As depicted in figure 5, digital technologies that characterize this stage are social networks, semantic webs, linked open data, mashups and sensor networks. Determinant for the use of such technologies are pressures to reach out to citizens, build situational awareness, to

give a voice to citizens, engage in the private and voluntary sector, and to facilitate citizen oversight. This leads to innovations and practices such as citizen consultation and ideation, crowdsourcing and co-delivery, electronic rule-making, social enterprises for public services, volunteering for public services, automated fraud detection, participatory budgeting, digital collaborative accountability, expose and investigate services, technology-facilitated anti-corruption, digital oversight institutions, citizens score-cards, data-driven journalism, online deliberation and discourse, open-government data ecosystems, public-private-people partnerships, public bidding on government contracts and proactive release of government data. Examples are initiatives that aim at increasing external acceptance and use of digital public services by citizens and other external stakeholders, getting citizens to participate and engage in public value creation, increasing transparency, accountability and open government, and increasing trust of citizens towards government.

Figure 6

Contextualization Stage Characteristics



Note. From Janowski (2015), p. 233.

The *contextualization* stage “aims at Digital Government supporting specific efforts by countries, cities, communities and other territorial and social units to develop themselves, e.g. to pursue specific public policy and sustainable development goals” (Janowski, 2015, p.227). Digital

transformation efforts show a focus on contextual development and goals and initiatives are formulated context specifically. As shown by figure 6, this stage is shaped by technologies such as government as a platform, mobile platforms, ad hoc networks, local big data and data mining, and wearable devices and apps. Determinant pressures that foster the introduction of such technologies are the need to respond to changing societal needs, support self-governance, ensure an equitable environment, enable personalized services and stimulate sectoral development. Innovations develop in thematic context such as the emergency, transport, health, regulation, social services or the policing sector. The goal is to tailor public service delivery to “different local, sectorial and local-sectorial contexts” (Janowski, 2015, p. 227). Examples are initiatives that foster public service delivery in different national contexts, foster development in different sectors (e.g. sustainable, economic, agricultural, health development etc.), address policy-relevant problems (e.g. corruption), or provide public service specifically for vulnerable groups (e.g. women, disabled, migrants, domestic violence victims, etc.).

2.3 The Strategic Management of Digital Transformation: analytical framework

So far, the previous sections provided a conceptualization of strategic management and digital transformation and introduced Janowski’s Digital Government Evolution Model as a theoretical framework to assess governments’ digital maturity in public value creation. The following section combines the insights of the previous sections into an analytical framework that will be used to answer the research question to what extent district-free cities in North-Rhine Westphalia aim at transforming digitally.

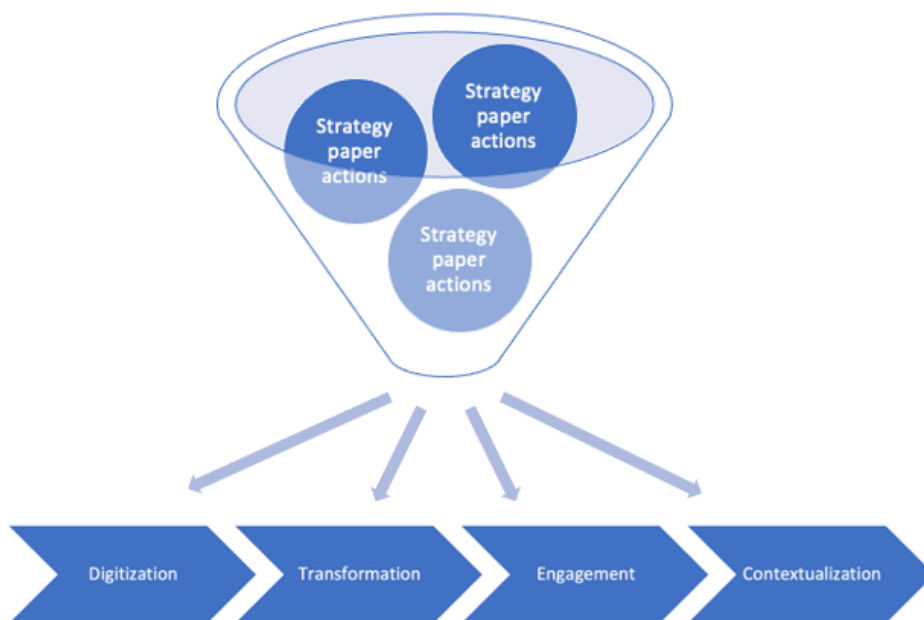
The answer to how governments and public administrations create public value und deliver public services in the digital sphere “[...] partly lies in existing government digitization initiatives” (Janowski, 2015, p.221). The strategic management literature teaches us that trends like the digital transformation and thus such initiatives require strategic orientation, planning and implementation. Indeed, such strategic management efforts of the digital transformation can be detected on the local government level in Germany. As mentioned in the introduction, many kinds of strategy papers that center around or partially include digital transformation as part of an agenda have spawned in recent years. Strategy papers that address the digital transformation of a municipality and smart city concepts can be recognized as embodying the dimension of *strategy content* within the conceptual framework of strategic management. They serve as an instrument to formulate and communicate intentions in order to give them a binding nature and to guide the implementation process of actions that aim at transforming public administrations digitally (Siegel, 2019).

Janowski’s model offers not only a filter to simply label and assign governments to stages of digital transformation. Rather, creating a scale using fixed variables allows to capture the *depth* of and thus *to what extent* measures and initiatives foster a digital government. Hence, the approach of this thesis is to identify goals and planned actions and initiatives mentioned in the cities’ strategy papers and

to assign them to a stage using the variables from Janowski's framework. Figure 7 presents a visualization of the analytical framework's rationale that this thesis follows.

Figure 7

Analytical Framework of the Thesis



3. Methodology

This chapter provides an understanding of the chosen methods to attain the research goal and answer the research question. First, the use of a case study as research design will be justified. Thereafter, the method of data collection as well as the operationalization of concepts into themes and codes for the data analysis are further elaborated.

3.1 Research design

The research design chosen to conduct this research is that of a descriptive single-case embedded case study. According to Yin (2018), three conditions influence the choice of the research design: (1) the form of research question, (2) whether the researcher has control over the behavioral events studied, and (3) whether the event studied is a contemporary or historical event. Case studies are generally suited for either “how”-, “why”-questions that pursue an explanatory approach but also for descriptive questions that investigate contemporary phenomena and that do not require control over the phenomenon or event studied. In that sense, case study is the fitting research design, as (1) the research question asks *how*, or more specifically *to what extent* independent cities in North-Rhine Westphalia aim at transforming digitally and depicts digital transformation approaches on the local level, (2) the papers are already written

and therefore cannot be controlled and influenced in their content anymore, and (3) the strategy papers are a contemporary phenomenon of recent years.

The context of the research is digital transformation on the local level in Germany. Moreover, this case study looks at the enclosed case of North-Rhine Westphalia (making this a single-case study) and within this case at strategy papers of district-free cities (making the cities the embedded units of analysis). In Germany, the majority of federal states are sectioned into administrative districts (Kreise), which normally include several towns or cities. However, there are also cities that are not part of a Kreis but are instead themselves each equal in status and functions to a Kreis. In German, those cities are called Kreisfreie Städte, which translates into district-free cities. This choice makes sense as the purpose of this research is to take a look at the local level, which is achieved by choosing a distinct political and geographical area.

3.2 Method of data collection

The data used for this research are strategy papers of district-free cities in North-Rhine Westphalia. This includes strategy papers that focus on digital transformation, like digitalization strategies and smart city concepts. Those strategy papers are the appropriate data to be used as they are concrete first-hand formulations of city governments about their objectives and initiatives to transform digitally. It is important to note that there is no standardized way and format to formulate such strategy papers. Thus, the levels of abstraction and depth are expected to vary. While it could be seen as a limitation to comparability, this presence or lack of a certain depth and abstraction might also be seen as a finding itself, that allows comparison between city governments aspiration in digital transformation of their public administration.

On the first instance, data was acquired through desk research. Using a municipality finder provided by the Ministry for Home Affairs, Municipal Affairs, Building and Digitalization of the State of North Rhine-Westphalia, all district-free cities in North-Rhine Westphalia were identified. There is a total of number of 23 district-free cities (Ministerium für Heimat, Kommunales, Bau und Digitalisierung des Landes Nordrhein-Westfalen, n.d.). Further investigation for each city revealed, that a little bit over half of the cities have either a smart city concept or a digital strategy concept, where digital transformation embodies a part of a greater strategy besides other action fields, or that they have a digital strategy concept explicitly for their public administration. Sometimes, cities have a combination of both, and the majority of papers is openly available and downloadable. To verify that the desk research findings on the internet were correct, all the cities that allegedly lacked a strategy paper were contacted and asked to confirm or deny the desk research finding up to this point. Ultimately, the data collection process delivered the following results: Out of 23 cities which comply with the condition of district-free, 13 have a strategy paper available on the internet (Aachen, Bochum, Bonn, Dortmund, Duisburg, Düsseldorf, Essen, Gelsenkirchen, Hamm, Mönchengladbach, Remscheid, Solingen, and Wuppertal). Ten

cities have been contacted (Bielefeld, Bottrop, Hagen, Herne, Köln, Krefeld, Leverkusen, Mühlheim an der Ruhr, Münster and Oberhausen) to verify the desk research finding. Out of these ten cities, four did not respond after two attempts (Bottrop, Hagen, Köln, and Krefeld), four confirmed that a strategy paper is missing but in progress (Herne, Mühlheim an der Ruhr, Münster and Oberhausen), one verified that a strategy is missing and that there is no information if one is planned (Leverkusen), and one city provided two strategy papers via mail (Bielefeld). This results in 15 documents to be analyzed. An overview of all the documents can be found in appendix A.

3.3 Method of data analysis

The particular method of data analysis is content analysis, which can be inter alia understood as a methodology that codes text into categories and measures the frequency of each code and category (Neuendorf, 2012). This is done with the help of the software Atlas.Ti. This thesis aims at uncovering to what extent district-free cities in North-Rhine Westphalia are aiming to pursue digital transformation by identifying goals and initiatives in the cities' strategy paper and assigning them to one of Janowski's (2015) Digital Government stages: Digitization, Transformation, Engagement or Contextualization. These are the categories, whose frequency will be counted in order to measure the extent or maturity of digital transformation efforts. Which stage or category an initiative is assigned to is determined by the three binary variables, that Janowski developed: Whether an initiative transforms a government internally, whether the external relations are transformed, and whether a transformation is context specific. Thus, Janowski's variables are operationalized into six codes as for each of the three variables there will be a 'yes' and a 'no' version.

The precise analysis within Atlas.Ti consists of two steps. First, assigning each identified initiative either a 'yes' or a 'no' code for each variable:

The codes 'internal transformation YES' and 'internal transformation NO' are derived from Janowski's variable, that asks "Whether digitization transforms the internal working and structures of government (yes) or it adds to the internal working and structures without affecting them (no)" (Janowski, 2015, p.225). Consequently, the code 'internal transformation NO' is assigned to digitization initiatives that do not affect internal working and structures, while the code 'internal transformation YES' is assigned to initiatives that do change internal working and structures.

The codes 'external relationship YES' and 'external relationship NO' are derived from Janowski's variable, that asks "Whether the transformation affects the relationships between government and its customers (yes) or is internal to government without affecting its customers (no)" (Janowski, 2015, p. 225). Accordingly, the code 'external relationship NO' is applied to initiatives that do not affect the external relationships between government and external stakeholders, while the code 'external relationship YES' is assigned to initiatives that do.

The code ‘context specific YES’ and ‘context specific NO’ are derived from Janowski’s variable, that asks “Whether the transformation depends on a particular application context, e.g. of a country, city or sector (yes), or it is applied without reference to any context (no)” (Janowski. 2015, p. 225). Correspondingly, the code ‘context specific NO’ is assigned to initiatives that are not applied to a specific context, while the code ‘context specific YES’ is assigned to initiatives that are.

Ultimately, after completion of the first step of analysis, every initiative will have been assigned three codes. The second step of the analysis is to assign each initiative to one of the four digital government stages (digitization, transformation, engagement, or contextualization). Correspondingly to Janowski’s framework, the composition of the three codes assigned in step 1 of the analysis will determine the stage. This step is automatized by setting up smart codes in Atlas.Ti. Each smart code embodies a digital government stage. In addition to that, smart codes for code combinations beyond Janowski’s framework are set up in order to capture initiatives that do not fit into one of the digital government stages from Janowski’s framework. An overview of the variable coding and stage coding via smart coding in form of a table can be found the appendix B.

Last but not least, a necessary skill for the analysis of the strategy papers is the understanding of the German language. As a native speaker, this skill requirement is fulfilled. The last step of the analysis it to count the frequency of all smart codes, which will be summarized in a table and to discuss the implications that can be drawn from the results.

3.4 Intra- and Intercoder Reliability

In order to ensure the quality of the findings, measurements that safeguard intra- and intercoder reliability can be taken. “Intercoder reliability involves at least two researchers’ independently coding the materials, while intracoder reliability refers to the consistent manner by which the researcher codes.” (van den Hoonaard, 2008, p. 1). It follows from the definition that intercoder reliability is achieved by having a second researcher involved in the study or by providing the code book and data to an external researcher and having them code the data. The result is compared to see if both researchers would have arrived at the same coding results independently. The higher the agreement, the higher the reliability of the results. Intra-coder reliability as a measure of consistent coding of a researcher throughout the coding process can be achieved by a high familiarity with the texts to be analyzed and a high familiarity with the codes and when to apply them. Errors in the coding process can also occur primarily when concentration in coding wanes. Therefore, regular breaks should be taken during the coding process. In addition, after completion, either a repetition of the coding process can be aimed at, in order to compare the results of both coding processes, similar to intercoder reliability testing, and to determine whether the same results were achieved in two runs. Alternatively, this can also be done on a random sample basis.

4. Analysis

This chapter provides the content analysis' findings and a discussion thereof. As outlined in the methodology section, the initiatives found in the strategy papers were assigned three codes each, and on basis of these codes, the initiatives were assigned to a smart code, embodying the digital government stage the initiative represents. The goal of the research is to draw conclusions about the depth of digital transformation efforts in North-Rhine Westphalian cities by looking at the frequencies of initiatives for each stage. The first subsection presents the observations derived from the coding. The second subsection discusses the findings and their implications.

4.1 Findings

As Table 1 shows, among the strategy papers of 14 cities a total number of 645 initiatives were detected. The majority of initiatives were assigned to the contextualization stage, who make up 214 or 33% of all initiatives. 145 (22%) of the initiatives were assigned to the digitization stage. After that, 109 (17%) initiatives relate to the engagement stage. On the fourth position, 94 (15%) of all initiatives can be assigned to the transformation stage. In addition to that, 83 (13%) initiatives were found, which were assigned a combination of codes that does not translate into one of Janowski's digital government stages.

Table 1

Categorization of Digital Transformation Initiatives in Strategy Papers of Independent Cities

City	Initiatives	Digitization	Transformation	Engagement	Contextualization	Other
Aachen	62	21 (34%)	6 (10%)	8 (13%)	14 (22%)	13 (21%)
Bielefeld	27	3 (11%)	15 (56%)	9 (33%)	0 (0%)	0 (0%)
Bochum	81	6 (14%)	14 (17%)	22 (21%)	39 (48%)	0 (0%)
Bonn	49	6 (12%)	19 (39%)	14 (29%)	10 (20%)	0 (0%)
Dortmund	26	11 (42%)	12 (46%)	2 (1%)	1 (>1%)	0 (0%)
Duisburg	22	3 (14%)	0 (0%)	2 (9%)	17 (77%)	0 (0%)
Düsseldorf	17	4 (23%)	2 (12%)	11 (65%)	0 (0%)	0 (0%)
Essen	16	7 (44%)	6 (38%)	2 (12%)	0 (0%)	1 (6%)
Gelsenkirchen	104	16 (15%)	0 (0%)	15 (15%)	65 (62%)	8 (8%)
Hamm	15	0 (0%)	3 (20%)	4 (27%)	8 (53%)	0 (0%)
Mönchengladbach	67	0 (0%)	4 (6%)	15 (22%)	47 (70%)	1 (>1%)
Remscheid	19	16 (84%)	3 (16%)	0 (0%)	0 (0%)	0 (0%)
Solingen	95	28 (29%)	0 (0%)	2 (2%)	13 (14%)	52 (55%)
Wuppertal	45	24 (53%)	10 (22%)	3 (7%)	0 (0%)	8 (13%)
Sum	645	145 (22%)	94 (15%)	109 (17%)	214 (33%)	83 (13%)

Note. The percentages are calculated by dividing the numbers of initiatives in a category by the total amount of initiatives in the associated row. For simplicity, the results have been rounded up to whole numbers.

As expected, the scope and number of initiatives found in the papers varied significantly. The least initiatives were found in the strategy papers of Hamm, where 15 initiatives were found. Other cities

with similarly few initiatives are Essen (16) Düsseldorf (17), Remscheid (19), Duisburg (22), Dortmund (26) and Bielefeld (27). The midfield consists of Wuppertal (45), Bonn (49), Aachen (62), and Mönchengladbach (67). The cities with the most extensive stock of initiatives are Bochum (81), Solingen (95) and Gelsenkirchen (104).

Furthermore, a high variance in distribution can also be observed within the categories. Within the digitization category, percentages vary from 0% (Hamm and Mönchengladbach) to 84% (Remscheid). A lot of cities show a percentage of round about 11-15% (Bielefeld, Bochum, Bonn, Duisburg, Gelsenkirchen). Cities with a higher percentage are Solingen with 29%, Aachen with 34%, Dortmund with 42%, Essen with 44%, Wuppertal with 53% as well as the extreme Remscheid, where 84% of the initiatives were assigned to the digitization stage.

Within the transformation stage, percentages vary from 0% (Duisburg and Solingen) to 56% (Bielefeld). Cities with a lower percentage are Mönchengladbach (6%), Aachen (10%) and Düsseldorf (12%). In the midfield are Remscheid (16%), Bochum (17%), Hamm (20%) and Wuppertal (22%). Relatively to the other cities, a higher percentage can be observed in Essen (38%), Bonn (39%), Dortmund (46%) and Bielefeld (56%).

Within the engagement stage, percentages vary from 0% (Remscheid) to 65% (Düsseldorf). Seven out of the 14 cities show a low percentage of under or equal to 15%: Dortmund (1%), Essen (2%), Wuppertal (7%), and Duisburg (9%), Essen (12%), Aachen (13%) and Gelsenkirchen (15%). Five cities show percentages between around 20 to 30 percent (Bochum 21%, Mönchengladbach 22%, Hamm 27%, Bonn 29%, and Bielefeld 33%).

Within the contextualization stage, percentages vary from 0% to 77%. Five out of the 14 cities show no contextualized initiatives at all (Bielefeld, Düsseldorf, Essen, Remscheid and Wuppertal). In the strategy paper of Dortmund only one contextualized initiative was found, which makes up 1%. Other than that, there are three cities with percentages around 10 to 20 percent (Solvingen 14%, Bonn 20% and Aachen 22%). And five cities show a higher percentage of contextualized initiatives around or above 50% (Bochum 48%, Hamm 53%, Gelsenkirchen 62%, Mönchengladbach 70%, and Duisburg 77%).

Lastly, within the category of code combinations, that could not be assigned to one of Janowski's digital government stages, a majority of 8 cities did not show such code combinations, which means that all their initiatives could be assigned to one of Janowski's categories. However, Mönchengladbach and Essen are cities, where in both cases one initiative has been categorized differently. Other cities where initiatives with atypical code combinations were detected are Gelsenkirchen (8%), Wuppertal (13%), Aachen (21%), and the extreme outlier Solingen (55%).

Table 2*Initiatives with Code Combinations beyond Janowski's (2015) framework*

Code Combination	Number of initiatives
'Internal transformation NO' AND 'External relationship NO' AND 'Context specific YES'	61
'Internal transformation NO' AND 'External relationship YES' AND 'Context specific NO'	3
'Internal transformation NO' AND 'External relationship YES' AND 'Context specific YES'	4
'Internal transformation YES' AND 'External relationship NO' AND 'Context specific YES'	15
Sum	83

Concerning the initiatives with code combinations beyond Janowski's framework, table 2 shows, that the majority of 61 out of 83 initiatives were context specific despite not changing the internal structure and external relationships. 15 out of 83 initiatives were context specific and affected the internal structures. In contrast to that relatively few initiatives were only affecting external relationships without being context specific or changing internal structures or were affecting external relationships and being context specific without changing internal structures.

Table 3*Distribution of initiatives across document groups.*

	Smart City Concepts	Digital Strategies
Digitization	93	52
Transformation	34	60
Engagement	68	41
Contextualization	189	25
Other	69	14
Sum	453	192

As mentioned, the data used to conduct this research were smart city concepts and digital strategies, including more general strategies and strategies that focused mainly on digitalization of the public administration. The data ultimately consisted of 9 smart city concepts and 6 digital strategies. Table 3 shows the distribution of initiatives among the four digital government stages separated by the document categories smart city concepts and digital strategies. 453 out of the 645 initiatives in total were found in the smart city concepts. The remaining 192 initiatives were found in digital strategies. What can be observed is that smart city concepts the category with the most initiatives is the contextualization stage with 189 initiatives found. Except for initiatives in the digitization stage and other combinations of codes the number of initiatives among the transformation, engagement and contextualization stage increases from stage to stage. Across digital strategies, the opposite is the case. With the exception of the

transformation stage and other coding combinations, the numbers of initiatives from digitization to contextualization stage decreases.

4.2 Discussion

From the numerical findings, a variety of implications can be drawn. In the first instance and concerning the total numbers of initiatives per city, the different number of initiatives in each city's strategy paper confirms that there is a variance in depth among the strategy papers. However, this finding needs to be interpreted with caution. Just because a low number of initiatives were found in a city's strategy paper(s), this does not necessarily mean, that this city is doing less to transform digitally than other cities. It only means, that this city formulated fewer initiatives in its strategy papers that were analyzed. However, it could be that other internal strategy papers with list of measures and initiatives and roadmaps to achieve the formulated goals in the strategy paper that was analyzed, exist. According to Siegel (2019), “[it] should also be noted that functional sub-strategies are formulated and implemented in administrations at all levels, for example with regard to digitization strategies, human resources, location marketing or competition for external resources (e.g., funding)” (p. 340, translation from German by the author of this thesis). In addition to that, for Bielefeld for example, two strategy papers were analyzed. In the smart city concept, only five initiatives were found, which all related to the engagement stage of digital government. However, the strategy paper for the digitalization on Bielefeld's public administration was more elaborate on planned measures by formulating 22 initiatives. Hence, it cannot be ruled out, that initiatives and measures to transform digitally do not exist. The findings only report, how many initiatives and measures were found in the documents analyzed. Therefore, it should not be assumed, that the analyzed documents completely reflect an exhaustive picture of digital transformation initiatives and measures. On the other side, the findings provide a first picture of how North Rhine-Westphalian cities present themselves in their effort to transform digitally.

With regard to the first sub-question, which asked to what extent strategy papers explicitly plan actions that aim at digitizing public services, the results show that with 22% initiatives in this phase account for the second-highest share of total initiatives. As the first stage in the digital government evolution model, the digitization stage embodies the first step towards to and the foundation of a digital government transformation. On the ICT level, it relates to the digitization of analogue items and services into electronic formats or the installment and expansion of a technological infrastructure that enables (further) digitization. However, it became also apparent during the research that initiatives that do not directly address technologies themselves but the people using them, are part of the initiatives to foster digital transformation, too. Some addressed for example further education of staff in handling new technologies and operational systems, or the building of networks and hubs where innovations are tested or co-created. Such initiatives seem to be as important in transforming a government digitally as the mere installment and implementation of technology. Regarding the second sub-question, which asked to what

extent strategy papers plan actions that aim at developing an electronic government system, the findings report that of all stages that were conceptualized by Janowski, initiatives that transform internal working structures account for the lowest share of all initiatives (15%). Not far behind are initiatives that can be assigned to the engagement stage, and which relates to the third sub-question that asked to what extent strategy papers plan actions that aim at developing an electronic governance system. They account for 17%. In the face of the percentages that those three stages take up, it can be said that they are in a similar range.

The share of 33% of initiatives that relate to the contextualization stage embodies an interesting finding. As this stage is the last stage and therefore implies a highly digital transformed government and in the face of the relatively lower national score for digital public services on the European Commission's Digital Economy and Society Index (DESI), it could have been expected for this stage to take the least share of all initiatives. However, the results of the study paint a different picture for the local level. The reason for this could be the high contextualization of the German municipal level. This circumstance has its roots in the principle of local self-government, which is enshrined in Article 28 II of the Basic Law. It stipulates that all municipalities must be guaranteed the right to regulate all matters of the local community under their own responsibility within the framework of the law. Local government affairs in Germany can be divided into tasks of providing services close to the citizens and tasks of managing urban development (Schubert & Keil, 2019). Tasks of providing services close to the citizens include tasks in the field of education, social assistance, technical supply and recreation. Examples include inter alia the administration of public schools, public cultural centers such as public theaters, museums and libraries, hospitals, municipal departments of utilities that guarantee the supply of water or waste disposal (Schubert & Keil, 2019). Initiatives that were coded as contextualized, related to such fields of action. Hence, the nature of local self-government to provide public services along different fields of action fosters that development strategies are also formulated within these fields of action.

Another interesting finding are the initiatives that could not be assigned to one of Janowski's digital government stages. With 13% of all initiatives detected, this number is relatively high and calls for further attention. 61 out of the 83 initiatives are coded as neither internally transforming, nor affecting external relationships, but being context specific. This finding could relate to the highly contextual nature of local self-governance of municipalities mentioned before. This and the other 15 initiatives that are affecting internal structures and that are context specific without affecting external relations could be an indicator for local governments being in initial stages of digital government, where a lot of initiatives focus on digitization and early internal transformations of public services, but already applying these changes in locally context specific settings and fields of action. For Janowski's framework this would mean, that it does not hold enough analytical capacity to grasp digital government transformation

on the local level and that the model would need to be adjusted to local contexts by adding more stages of digital government that capture the local reality.

Furthermore, the findings in table 3, which shows the categorization of initiatives based on the type of strategy paper they were found in suggest that there has been a shift in initiatives the strategy papers pursue to achieve their goal of digital transformation. Smart city concepts are a newer phenomenon than digitalization strategies. A lot of digitalization strategies focus on the public administration and comprise initiatives that aim at digitizing, transforming internal working structures or engaging more with external stakeholders to provide a more efficient public service delivery. The opposite is the case with smart city concepts, which also show a lot of digitization efforts but whose majority of initiatives are contextualized. This could be linked to different focuses of smart city concepts and digital strategies. In smart city concepts, urban citizenry and society are the center of attention. Digital transformation of the government is not seen as the goal but more as a mean to improve urban livelihood by improving public service delivery. In digital strategies, digital transformation is pursued to improve public service delivery, which ultimately also serves the people. However, the people stand not in the center of attention and initiatives are not tailored to their context and needs. As such, smart city concepts can be seen as a kind of newer type of strategy papers, that reflect the further development of strategic planning towards more context specialization.

5. Conclusion

The goal of this thesis was to explore digital transformation efforts on the local level in Germany by looking at strategic papers of district-free cities in North-Rhine Westphalia. The main research question asked to what extent district-free cities in North-Rhine Westphalia are aiming to pursue digital transformation. The extent of digital transformation pursuit was measured by looking at initiatives in strategic papers and assigning them codes that are based on variables that Janowski (2015) developed in order to categorize stages of digital government evolution. These stages were intended to serve as reference points to describe the extent of digital government transformation efforts.

The findings offer multiple insights into local digital transformation within a Bundesland in Germany. Firstly, they show that the analyzed cities in North Rhine-Westphalia vary in their display of digital transformation efforts in form of explicitly stated initiatives within the strategy papers. While some cities include extensive and detailed catalogues of measures and explicit initiatives to transform digitally, other cities only give examples for measures to reach formulated goals. Secondly, the biggest share of initiatives could be assigned to the contextualization stage, which is the most progressive digital government stage of Janowski's model. The second biggest share of initiatives were assigned to the transformation stage, which is the first stage in Janowski's model. Especially the extent to which initiatives are contextualized is an interesting finding, as in theory, it requires the other stages to have been reached beforehand. In contradiction to that however, initiatives that aim at reaching the preceding

stages together amount to 54 % of all initiatives found, which indicates that German cities are still in earlier stages of digital government evolution but already contextualize their initiatives. A first assumption is that the reason for this lies in the complexion of municipal self-governance, which is highly contextualized by nature. Thus, to answer the research question, local governments seem to pursue digital transformation to a high extent, already aiming at the contextualization of initiatives while also still working on the precedent structures that, according to Janowski's framework, should be fulfilled before contextualization can be reached. Thirdly, similar to the theoretical development of digital government towards more contextualization there is also a development in strategic management approaches towards more contextualization as newer smart city strategies tend to contain more contextualized initiatives than older digitalization strategies.

However, the research holds certain limitations, that need to be considered when looking at the findings. The main limitation is that the findings do not reflect a complete picture but only a first impression of the extent of digital transformation efforts as the strategy papers do not offer an exhaustive inventory of digital transformation measures and initiatives. Furthermore, the findings should not be generalized as the extent of digital transformation efforts according to this study on strategy papers differs significantly between municipalities, and furthermore cannot be generalized due to Germany's federal structure, which causes digital transformation approaches to differ considerably between the federal state (Bund), states (Länder) and local governments (Schuppan, 2019b). Lastly, a caveat concerns the process of analysis and assigning of codes, which is dependent on the personal interpretation of the coder, who interprets and decides which code to assign to an initiative. Theoretically, this caveat could be counteracted against by carrying out an intra- and intercoder reliability measures. In regard to intracoder reliability measures, regular breaks throughout the coding process were taken to keep the concentration level up. However, due to lack of time, this a second round of coding or sample coding was canceled. Intercoder reliability measures were also not taken due to the lack of a second external researcher to conduct an independent round of coding.

However, the limitations also open the door to suggestions for further research in the future. This thesis offers an entry point as the findings do not draw an exhaustive picture of digital transformation efforts, and by offering interesting first insights in assumingly peculiar divergences of local level digital transformation from national level digital transformation. Furthermore, the just mentioned federal structure of Germany and resulting differences between the different state levels and even municipalities on the local level call for more research and gathering of empirical data on that matter, for example of other German states. Local level digital transformation is still an understudied field, and the research gap offers a large steppingstone into this topic. In addition to that, the ongoing progress of technologies make digital transformation a dynamic endeavor that needs to take into perspective the contemporary developments of digital technology. This means that with no end state of digital

transformation but further development of the concept and what it entails, research must be kept up to ensure the parallel continuation of knowledge gathering on digital transformation.

Despite the mentioned limitations this thesis still offers added value to both theory and practice. It is a non-deniable fact that ICT has changed everyday life and will continue to do so. Correspondingly, it will also continue to fundamentally change the functioning of state and administration, "[...] so that here lies the relevance of the topic in terms of administrative science as well as administrative policy." (Schuppan, 2019a, p. 544, translation by the author of this thesis). In order to successfully and strategically manage digital government development, empirical-based knowledge is needed to develop models and theoretical frameworks, that help practitioners in their management of the topic. This study and the findings on local level digital transformation suggest that an adjustment of Janowski's model for the local level is needed, which poses the scientific value. The further development of the model can then be applied by practitioners in order to develop further updated strategic papers to guide the digital transformation. In addition to that, this thesis poses a contribution to the scientific gap of research in digital transformation on the local level. It offers a foundation to assume that local digital transformation is approached differently and highlights the necessity to further study local level digital transformation.

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