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Master Thesis

The rising challenge of the realization of large infrastructure projects in complex decision-making processes

Applying governance network theory to Munich Airport's expansion project

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Executive Summary

- This thesis seeks to analyze and explain a complex decision-making process from a governance network perspective.

- As for the underlaying empirical case, the Munich Airport expnsion project was chosen, a highly mediatized and controversial infrastructure project which was characterized by a thirteen-year-long decision-making process.

- The main research question of the thesis focuses on the factors that infleunced the complex decision-making process. In other words: Which factors influence the realization of the new runway at Munich Airport?

- The thesis gives an overview over the history and different modes of Public Administration and Management and theoretically explains the main characteristics and concepts of governance network theory.

- The case study is designed as a single-case study and follows a qualitative approach. The necessary data to reconstruct and illuminate the historical context of the case was collected through the conduction of several expert interviews with the most relevant network actors as well as from official documents and webpages.

- Empirically, this thesis illuminates the decision-making process about the new runway at Munich Airport. To structure the decision-making process, the rounds model is applied which helps to separate the process into various rounds of decision-making and intermediate outcomes. Each round thereby ends with a crucial decision. For the analyzation of the case, cognitive, strategic, instiutional and management factors are applied which are central concepts of governance network theory to specifically analyze complex governance processes. Therefore, the variables of actors and strategies (strategic factors), perceptions and the use of information (cognitive factors), arenas (institutional factors) and the form of management style applied (management factors) are used to analyze four rounds of decision-making.

- Furthermore, after the overall description of the case, the success or failure of the policy debate concerning the future of Munich Airport is evaluated from a governance network perspective. This is done by asking if cognitive, strategic or institutional learning

occurred during the process. As these concepts provide important criteria for success or failure, they allow for the judgement of complex governance processes.

- Reversely, by assessing the generated outcomes of the process following these questions, finally important explanations are found which can be referred to as cognitive, strategic and institutional causes. Furthermore, by asking if the adequate management style of network governance was applied, management causes are derived. Moreover, external causes are identified that influenced the decision-making process and its outcomes.

- It is found that diverging perceptions and knowledge conflicts between actors (cognitive causes), ongoing power games (strategic causes), incompatible institutions and a low level of trust in the governance network (institutional causes) and the fallback to hierarchical forms of network management (management causes) led to stagnations in the policy process. Also political factors had significant impact on the evolvement of the process and that the project was not realized. With the change in government and due to electoral reasons, perceptions and strategies were strongly shifted and ultimately resulted in the postponement of the project. Additionally, societal factors such as the site-specific conditions and the culture of environmental sustainability played an important role in shaping the perceptions of actors and therefore influenced the decision-making process.

- Lastly, on basis of the results of this research, recommendations for the management of similar projects are provided as well as specifically for the Munich case. Thereby the introduced suggestions orientate on measures that were effectively taken in a similar runway project in Frankfurt. Thus, the importance of widening the policy scope is highlighted and the concurrent increased room for negotiations.

Preface/Acknowledgement

With regard to the choice of the empirical case for this thesis, the Munich Airport expansion project had caught my instant attention. Since I was born and raised in Bavaria, I could follow the debate's development over many years as it has been present in television, radio and several other communication sources. The planning of the third runway at Munich Airport had been the major infrastucture project of Bavaria in this millenium and therefore raised a lot media attention. Also regarding its complex actor constellations and the total length of the decision-making process (thirteen years), the project was well-suited for analyzation and also promised insightful results for the management of complex governance processes.

However, also my high personal interest in the aviation and airport sector played an important role why I chose a project from this particular field for my research. As my dad has been a pilot for Lufthansa, I grew up with a close bound to the aviation world. Therefore, my motivation was high to connect my final research project with a complex governance project from this field. Furthermore, since the governance network theory is rather novel in Germany and mostly centers on a Dutch context, I thought it would be of high interest to apply the theory to a case in a German context and which implications it derives.

I want to thank all the people who have made themselves available as interview partners and without whom it would have not been possible to analyze this case in-depth. In several hours of interview material, the interview partners provided me with important information and insights.

Furthermore, I would like to thank Lufthansa Group and especially the Political Affairs Department who have supported me with additional information and internal documents on the case.

Lastly, I especially want to thank Professor Koppenjan for his interest in this research project and the opportunity to pursue this topic further as a final research project. Throughout the writing process, he helped me to structure the thesis, critically challenged my research and contributed a multitude of valuable ideas and thoughts. He was always quickly available and provided me with immediate feedback.

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1. Introduction/ problem statement

A lot has changed since governments were the only power in the political system regarding decision-making and problem-solving processes. Today we find ourselves in a networked world where different actors of the state, private organizations and public institutions take part in policy processes in order to address complex situations or problems that cannot be solved by the state itself anymore. "These complex or 'wicked' problems or issues (e.g., poverty, homelessness, chronic health problems - including mental health and addictions) present a unique challenge to governments at all levels (federal, provincial, local), mostly because they defy precise definition and cut across disciplines, sectors, geographical and authority jurisdictions, policy and service delivery areas" (Popp et al. 2013: 17). Therefore, a shift from the top-down approach of problem solving of the classic bureaucratic model towards a collaborative way of interaction between public and non-public actors was required which can be also referred to as the shift from government to governance (Pierre and Peters 2000; Sørensen and Torfing 2007; Osborne 2010; Klijn and Koppenjan 2016). Keast et al. (2004) note in this context that the cooperative approach emerged as a result of the failure of the hierarchical model addressing cross-sector issues. This was the starting point of the theory of governance networks.

With the increased research on governance processes, a large number of scholars and theorists have also focused on the study of networks because they consider both concepts as tightly connected to one another. They characterize governance as the (interaction)-processes taking place between different actors of networks consisting of organizations, private companies and non-governmental organizations (Klijn and Koppenjan 2016). As set out in the paragraph above, these networks formed and emerged as a consequence of complex policy problems that cut across disciplines and therefore required the actions of multi-level actors in order to find solutions to tackle these problems (Mandell 2001; Agranoff and McGuire 2003; Koppenjan and Klijn 2004). Thus, governance networks can be described as complex regarding the policy problem itself its dealing with (content) and secondly, to a larger extent, because of its own characteristics making internal processes complex and hard to manage (process).

The Munich Airport expansion project

Especially spatial projects where the interests of different actors at all levels are involved illustrate this complexity. A good example for a large infrastructure project in this sense is the debate about the expansion of Munich Airport. As a consequence of rising passenger numbers and a yearly increase of flight movements up to seven percent from 1997 on, the operator of

Munich Airport, "Flughafen München GmbH" (FMG), initiated a planning process for a third runway in 2005 to expand its capacities from 90 flight movements per hour to 120 movements per hour. They argued that a new runway was needed due to the estimated exhaustion of capacities by 2010 and the estimated doubling of passenger numbers from approximately 30 million (2005) to 55,8 million in 2020 (Intraplan 2007). Also, regarding the economic development and prosperity of the city of Munich, the region and the whole state of Bavaria, they stressed that a new runway would be of high importance. However, instantly after the publication of the plans, they met with hard resistance from environmental groups, airport neighboring municipalities and citizens who were strict opponents of the project. From their point of view, a third runway was not necessary as they questioned the growth prognosis carried out by FMG and stressed environmental/personal issues such as nature preservation, air pollution and noise nuisance.

The result was a seven year-long decision-making process were two large coalitions faced each other. On the one side, the coalition supporting the expansion project of a third runway consisting of FMG and its shareholders (Federal Republic of Germany, State of Bavaria and city of Munich), Lufthansa and other economic businesses and on the other side, the anti-growth coalition consisting of the airport neighboring districts Erding and Freising and other municipalities as well as over eighty citizen and environmental initiatives who formed together under the protest alliance "AufgeMUCkt". After many deadlocks and impasses in the decision-making process, the competent authority, the government of Upper Bavaria accepted the plans and granted FMG permission to build a third runway in 2011. This decision was legally binding and was later on approved by the Bavarian Administrative Court. This ended the administrative decision-making process (2005-2011) and the opponents were outraged.

However, in 2012 a referendum was initiated by the citizens of Munich regarding the building of the third runway. The coalition "Munich against the third runway" under the lead of the green party "Bündnis 90/ Die Grünen" collected over 30.000 signatures which made such an official referendum possible. The third runway opponents won with 54,3 percent of the votes while 32 percent of the citizens of Munich participated, which made the referendum legally binding but only for one year (Stadt München 2019). Thus, the mayor of Munich, Christian Ude[1], saw himself in the duty to accept the will of the citizens and vote against the third runway in the shareholder's meeting. As mentioned before, the city of Munich as part of FMG has veto power regarding the decision-making and hence the project could for now not be realized. Even though

[1] Social-democratic party (SPD)

the result of the referendum was solely binding for one year and the runway could have been built ever since, the project has never been realized until today. Also, the new mayor who was elected in 2014, Dieter Reiter[2], saw himself dependent on the referendum from 2012.

Research goal and research questions

The goal of the paper is to analyze a complex decision-making process from a network perspective. As shown, the Munich case provides a complex nature of decision-making as the project cut across different levels and a wide variety of actors with diverging opinions are involved. Therefore, the question can be asked: How can we analyze complexity in decision-making and how can we explain and evaluate complex decision-making processes from a network perspective? Thus, the interaction process of four rounds of policy-making from 2005 until today will be described and the outcomes analyzed and explained from a network perspective. How did each policy round evolve and what were the intermediate outcomes of them? Can network theory explain why the Munich Airport expansion project was so hard to realize and was ultimately postponed? Or which other factors have to be taken into account when explaining the process and outcomes? All these questions are of interest to answer the main research question*: Which factors influence the realization of the new runway at Munich Airport?* Furthermore, on basis of the results the following questions are sought to be answered: Is the governance network approach suitable for the management of similar infrastructure projects in future and which implications do the findings have on other infrastructure projects in Germany?

Research relevance

Furthermore, Munich's airport expansion can be seen as a critical case for applying network theory. "In essence, a critical case can enhance the 'generalizability' of case-studies. Such cases often hold more information than randomly selected representative cases, because they activate more actors and more basic mechanisms in the situation studied" (Huys and Koppenjan 2010, 4). It is believed that such critical cases allow logical deductions like "if this is (not) valid for this case, then it applied to all (no) cases" (Flyvbjerg 2001: 79). The runway project has raised a lot media attention since its starting process in 2005 and affected many citizens, thus demonstrating its social relevance. It is a case that highlights the complexity of today's decision-making where many different actors are involved. Especially through the increased involvement of societal groups, the decision-making process got even more complex. Even

[2] Social-democratic party (SPD)

though the plans were approved after almost seven years of decision-making and negotiating, through a citizen-induced referendum the building of the third runway could be prevented. Earlier, the process apparently lacked collaborative problem solving and a relationship of trust which might led to that the anti-growth coalition felt left out and stopped the project with the referendum. Hypotheses and propositions are likely to be confirmed in this case and can hence be labelled as a critical case (Flyvbjerg 2001; Ragin 1992). Thus, the fight for a third runway and its long decision-making process is likely to offer implications for other large German infrastructure projects and the rising challenge to realize such projects. In Germany, the application of governance network theory and its influence on complex decision-making processes has been low so far. This research centers particularly on the Dutch take of network governance and orientates on studies carried out in a Dutch context[3]. Following this, it will be interesting to apply governance network theory to a case in a German context. There might be other contextual factors at work that influence the decision-making process. Identifying these factors could add to theory. Hence, academic relevance is given as the research builds on other case-studies and thus enlarges the contextual applicability of governance network theory.

[3] see for instance papers of van Gils and Klijn (2007) and Huys and Koppenjan (2010)

2. Theoretical framework

In his article, Stephen Osborne (2006) introduced a new paradigm to Public Administration and Management (PAM): The so called New Public Governance (NPG). Following his line of argumentation, the history of PAM can be characterized through three different modes starting with traditional Public Administration (PA) which was present from the late nineteenth century to the early 1980s, the rather short-lived phase of New Public Management (NPM) from the 1980s to the early 21st century and the emergent paradigm of NPG ever since.

The classic PA paradigm which dates back to the early years of the public sector has its origins in the discipline of political studies. Influential theorists such as Woodrow Wilson (1887) saw the state as a unitary state where policy-making and implementation were vertically structured within governments (Osborne 2006). This was highlighted through a strict split of politics and administration whereas the latter was solely responsible for policy-implementation. Bureaucracy and professionalism were the key concepts in the process of decision-making and service delivery and hierarchy could be seen as the main governance mechanism in the vertical-integrated nature of the paradigm. PA reached its high-point in the post-1945 era with the emergence of the welfare state where it was used as the main instrument to provide extensive services for economic and social needs of citizens (ibid.). However, in the following decades, the welfare state and PA were increasingly criticized by academics (Ostrom 1971; Dunleavy 1985) as well as leading politicians. In their opinion, PA had become a 'bystander' of PAM (Rhodes 1997) and had entered a stage of decline (Chandler 1991).

In the late 1970s, academia saw the growth of a new debate about PAM and led to the spread and rise of NPM. The NPM paradigm foresaw the integration of private sector managerial-techniques to make public services more efficient and effective (Thatcher 1995). It developed from neo-classical theories and specifically from rational-choice theory on public decision-making. Influential theorists such as Niskanen (1971) articulated the need for the disaggregation of public services to their most basic unit in order to tackle the tendency of 'big government' which was apparent in classical PA. Thus, policy making and implementation were disengaged as independent service units, who were in competition with each other, produced and implemented the services. Consequently, intra-organizational processes and management were of main interest and focus put especially on the output of these processes (Osborne 2006). A combination of competition, contractual relationships and the price mechanism thereby built the basis for its governance mechanism. With the start of the 21st century and the increasing pluralist world, NPM had been widely criticized for its intra-organizational focus and the

application of outdated private sector techniques in the provision of public services (see Metcalfe and Richards 1991; Hood and Jackson 1991). Thus, Osborne (2006) concluded: "Given such criticisms of both paradigms, therefore, it is time to question whether there is a pressing need now for a more holistic theory of PAM – one that moves beyond the sterile dichotomy of 'administration versus management' and that allows a more comprehensive and integrated approach to the study, and practice, of PAM. It is suggested here that this theory may well be the New Public Governance" (ibid.: 380).

NPG derived mainly from organizational sociology and network theory which acknowledges the increasing nature of fragmented public policy-making (Haveri 2006). Additionally, it rooted from social capital theory and relational marketing literature (see for example Groonroos 1994). Thus, a strength of the NPG approach is that it centers on the 'relational organization' and hence provides a more contemporary management theory. Thereby, one of its main assumptions is that decision making is nowadays characterized by a plural state, where a multitude of independent actors contribute to the delivery of services and a pluralist state, where policy making is influenced by multiple processes (Osborne 2006). Different than the NPM approach which has its focus on service output, NPG stresses the outcomes and effectiveness of services and thus concentrates on inter-organizational relationships and the governance of processes. Furthermore, it places importance on the design and evaluation of inter-organizational relationships where trust and relational contracts act as the main governance mechanisms (ibid.).

From New Public Governance to governance network theory

Many authors suggest that the rise of the new paradigm New Public Governance in PAM can be especially linked to the rapid growth of governance network theory. Thus, NPG is thought to derive its main concepts from governance network theory and posits interdependencies and complexities in public policy-making and service delivery; dynamics that NPM failed to address (Klijn and Koppenjan 2012, 2016; Osborne 2006, 2010). Following this, governance network theory "has developed into a fully-fledged theoretical perspective […] that is accompanied by a mature organizational and managerial practice" (Klijn and Koppenjan 2012: 588). Closely related to the theoretical background of NPG, governance network theory roots back to three main theoretical bodies and research traditions: Political science, organizational science and public administration (Klijn and Koppenjan 2012, 2016; Klijn 1997, 2005; Berry et al. 2004).

Building on its tradition in political science, the research on policy networks focuses on various actors that are engaged in the process of decision-making in policy networks. It deals with the question which actors have power and access to public policy-making. This stream of research dates back to the discussions on power in the 1960s and the question, how networks around decision-making are organized. Pluralist representatives like Dahl (1961) or Truman (1964) have the opinion that political arenas are relatively opened. Thus, organized groups can participate and influence decision-making processes. Elitists scholars, however, doubt this and state that power is rather hold by a small elite that widely controls public policy-making while excluding other groups and their interests from the process (Hunter 1953). Following this, research continued with the studies on the process of agenda setting (see Cobb and Elder 1983) and the emergence of policy windows (see Kingdon 1984, 2011). Authors assume that issues on the agenda are likely to be transformed due to the involvement of groups who demand a reformulation of the issue. Some studies also deal with the role of sub-systems and sub-governments in these processes (Freeman and Stevens 1987). Of high importance is additionally the British research on policy networks and communities in the 1980s and 1990s by scholars like Rhodes (1988) and Jordan (1990). Thereby the focus lays mostly on the closedness of decision-making in networks.

The research on inter-organizational service delivery and policy implementation originates from organizational science with an inter-organizational perspective. It started with the work on inter-organizational coordination mechanisms (see Rogers and Whetten 1982) which focuses on resource interdependencies of actors. Thereby it is argued that in order for organizations to survive, they need resources from other organizations and thus have to interact with each other. This is also the reason why networks emerge (Klijn and Koppenjan 2012). Furthermore, additional research paid attention to the creation of concrete services and policy outcomes where networks are regarded as vehicles for a joint-service delivery (Negandhi 1975; Hjern and Porter 1981).

The third research tradition, collaborative governance and network management, stems from public administration theories. It explicitly focuses on the governance of complex policy problems and stresses the complexity of decision-making in a fragmented institutional context. Research in this field started in the mid-1970s with the pioneer work ‘Politikverflechtung’ (political entanglement) by Scharpf (1978) which was one of the first studies that used network theory to analyze a complex decision-making process. Thereby he examined how environmental problems are dealt with in a situation where different layers of governments are

dependent on each other and no central control predominates. Furthermore, the deliberation process between actors is emphasized more closely in this tradition. Complex decision-making processes are characterized by its deliberate character where actors negotiate to achieve solutions for policy problems. Possible outcomes of these processes, however, may entail value conflicts as actors use individual frames of reference in discussions (Rein and Schön 1986). Frames are defined by Reich and Schön (1986) as assumptions, values and norms actors make sense of. Building on this, Allison (1971) presents complex decision-making processes as a game as actors use different strategies in the process of decision-making. Generally, this research tradition deals with the question how societal problems can be solved by managing horizontal collaboration in networks that are involved in policy initiatives and implementation. Thus, it also aims to give recommendations how to improve and reconstruct networks and decision-making processes that are taking place within them (Klijn and Koppenjan 2012,2016; Kaufmann et al. 1986; Marin and Mayntz 1991; Kooiman 1993). Literature on collaborative planning therefore stresses the need for collaboration and negotiation between actors as policy-making is taking place in a shared power world (Bryson and Crosby 1992). By collaborating, actors can develop workable solutions that could not have been achieved by an actor individually. Literature on game theory thereby speaks of win-win outcomes or integrative solutions in this aspect (Fisher and Ury 1981; Dery 1984; Axelrod 2006).

As the three research traditions have demonstrated, concepts are partially tightly connected to each other, also in-between the different bodies of political science, organizational science and public administration. Thus, the following characteristics of networks can be seen as principles, network theorists nowadays take as a general basis in their research of policy formation, decision-making and service delivery (Klijn and Koppenjan 2016: 38).

- Interdependency: networks emerge and persist because of (resource) interdependencies between actors
- Complex interaction patterns: because of these resource interdependencies, complex interactions emerge between actors
- Because of these complex resource dependencies, a wide diversity of actors is involved in policy-making and dealing with policy problems. This means that different views on the problem exist
- Another consequence is that decision-making in networks is relatively complex because of the presence of a wide variety of actors, each pursuing its own strategy
- Networks are patterns of social relations; they are, we can say, interaction systems

Governance network theory and its main concepts

Building on the main principles of governance networks that derived from the three research traditions, network theorists tried to define the term governance networks more closely. As it is almost impossible in the field of social sciences to agree on a certain definition for a social phenomenon, there have also been many different approaches by authors in trying to define the meaning of networks. As a base we can use the rather broad definition by Weber and Khademian (2008), who define networks as "enduring exchange relations established between organizations, individuals, and groups" (ibid.: 334). Klijn and Koppenjan (2016) define governance networks more precisely as "more or less stable patterns of social relations between mutually dependent actors, which cluster around a policy problem, a policy programme, and/or a set of resources and which emerge, are sustained, and are changed through a series of interactions" (ibid.: 11). However, scholars do not always refer to networks when defining this concept, instead they are using terms like collaboration or collaborative alliance. Gray and Wood (1991) for instance explain collaboration as underlaying "when a group of autonomous stakeholders of a problem domain engage in an interactive process, using shared rules, norms, and structures, to act or decide on issues related to that domain" (ibid.: 146). Bryson et al. (2006) define cross-sectoral collaboration as "the linking or sharing of information, resources, activities and capabilities by organizations in two or more sectors to achieve an outcome that could not be achieved by organizations in one sector separately" (ibid.: 44). Popp et al. (2013) summarize the key aspects of networks and how they are hold together: "At their base, networks consist of the structure of relationships between actors (individuals and organizations) and the meaning of those relationships. Trust is the lubricant that makes cooperation between these actors possible, and higher levels of trust are believed to lead to more effective collaboration" (ibid.: 17).

The definitions of governance networks and collaboration display the core characteristics of networks: Actors are interdependent, autonomous and interactive. It is assumed by network governance theorists that this leads to the complexity of decision-making processes in policy making networks. By providing several concepts, the theory thus seeks to explain the causes for complex decision-making from a network perspective and thereby provides a set of analytical tools.

The role of perceptions of actors in governance processes is a central concept within governance network theory and relates to cognitive factors as it is content-related. It is about the different understanding of problems, how they should be approached and solved. Due to a wide variety

of actors within the network, there are different perceptions about the existence of a problem or what it is about (Klijn and Koppenjan 2016). Klijn and Koppenjan (2016) define perceptions as a "more or less coherent set of beliefs, ideas, and opinions that actors have" (ibid.: 46) thus leading to "different views of the world" (Rein and Schön 1992: 147) and diverging interpretations of the environment. Problems are therefore "not a fact, but a social construction based on perceptions of existing situations, their causes and consequences, their future developments, and potential solutions" varying from actor to actor (Klijn and Koppenjan 2016: 45). The processes of policy-formulation and implementation within governance networks can therefore take a form of an argumentation game, where different perceptions clash (Klijn and Koppenjan 2012, 2016). If common ground can be found and actors align their frames in the negotiation-discourse, joint solutions can be developed. However, these games are often shaped by the self-interest of actors trying to exercise their power. "In these discourses, conflicts and misunderstandings over problem perception may result in impasses. These impasses occur when actors in a policy debate do not wish to reflect upon their own problem definition or actively engage in confronting the perceptions or frames of others" (ibid.: 55). Sabatier (1988) for instance outlined in his theory about policy change that the belief systems and policy cores within an institution are very hard to change. Thus, he sees cross-coalition learning and the adaption of beliefs as very difficult as these values are deeply rooted in organizations or policy coalitions. The result of this knowledge conflict -or what is also called in literature 'dialog of the deaf'- is a substantive deadlock through blockages and stagnations in the problem-solving process of governance networks (DeLeon 1988; van Eeten 1999).

Another concept of cognitive complexity in governance networks deals with the ambiguous use of information by actors. Information is always interpreted differently which causes uncertainty and lack of consensus in addressing wicked problems (Klijn and Koppenjan 2016). In relation to the power game that is taking place in discourses, actors are usually not driven by "dialogue and truth finding, but on winning" (ibid.: 60). Therefore, it is argued that actors try to support their arguments with scientific knowledge and research. "They 'shop around' to find experts who will support their standpoints, engage in cherry-picking by presenting only those research findings that fit their position, and use research to discredit undesirable solutions" (ibid.: 60). Moreover, this can lead to a cycle where actors react to counter-expertise of other participants with further research and vice versa in order to reject criticism. This can lead to report rains where communication processes are limited to the formulation of scientific reports and the reaction to these by different actors of the network. Hence, through the overload of information, it is hard to differentiate correct from incorrect information (Hoppe 1999, 2011).

Another central concept which is mentioned by governance network theory refers to social or strategic factors and is process-related. Complexity is a term that not only describes the wickedness of a problem itself but also the dynamics that come with it. In a network, actors are autonomous which makes it hard to fully predict what strategies they choose and what effect this has on problem-solving processes as a whole (Elliott and Kiel 1999; Gerrits 2012; Morçöl 2012). In this aspect, the concepts of actors which strategies they deploy are especially highlighted.

Within governance processes that deal with complex societal problems, a wide variety of interdependent actors are involved. Scharpf (1997) defines actors "as individuals, informal groups of individuals, organizations, and groups of organizations that have the status and capacity to autonomously and actively enact strategies aimed at influencing the content, course, and outcomes of social interaction processes" (Klijn and Koppenjan 2016: 73). However, this definition does not include parties who may be influenced by policies (for instance by infrastructure projects) and who have no chance to actively participate in the process. In this sense, Freeman's (1984) definition of stakeholders as individuals, groups or organizations, who have the capacity to actively influence problem-issues, projects or policies, or who are affected by them, seems to fit the context of complex policy networks better. In practice, governance networks involve actors from the public as well as the private domain. Thus, individuals are mostly represented by citizens; groups include interest groups such as environmental or residential associations, whereas organizations usually consist of either public or semi-public organizations from different governmental levels or for-profit organizations from various business sectors (Klijn and Koppenjan 2016).

Strategic interactions in complex governance processes emerge as interdependent actors deploy strategies in order to realize their objectives. They can be seen as actions or intentions of actions which aim to influence the behavior of other actors in the process of decision-making. As actors generally base their actions and strategies on their individual perceptions, there is a wide variety of different strategies present within networks. Furthermore, these preferences or strategies of actors may shift throughout the process of decision-making for instance through changes in the environment. Complex networks can therefore be characterized as highly dynamic as actors make unexpected choices leading to uncertainty and unpredictability within the system (Elliott and Kiel 1999; Koppenjan and Klijn 2004; Teisman et al. 2009; Gerrits 2012). This is intensified through the reaction-mechanisms of actors in anticipating and responding to the

strategies of others; thus, making it hard to predict which turns interactions take and what the results will be.

Following the strategic nature of complex decision making, these processes are often entitled as games in literature. where interactions take a specific, unpredictable course "with winners and losers" (ibid.: 70). When describing these characteristics, scholars refer to the term 'non-linearity' which Gerrits (2012) defines as "(t)he lack of a direct or proportional relationship between the individual inputs and the aggregation of those inputs in the overall dynamics of the system" (ibid.: 83). As there is no central decision-maker in governance networks, decision-making does not evolve in a linear way going through pre-formulated phases. Teisman (2000) states, that interaction-processes in governance networks rather look like a sports match or game taking place in a number of rounds of decision-making. The rounds model can thus be seen as an analytical tool to analyze interaction-processes in complex decision-making processes.

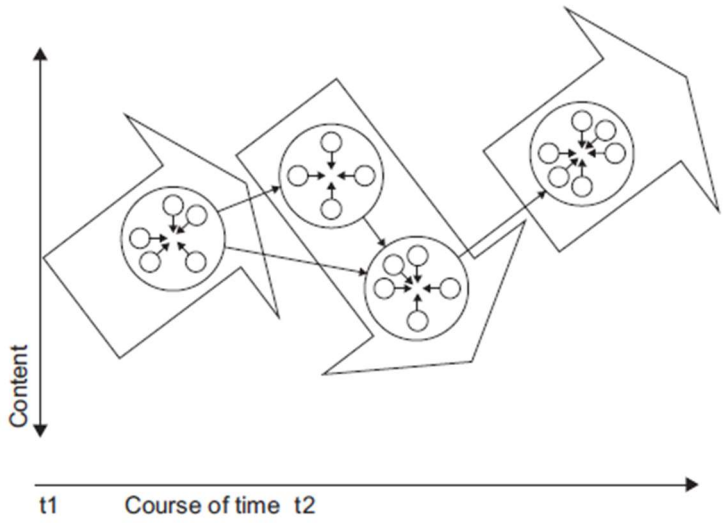

Figure 1: Rounds in the governance network process. Source: Klijn and Koppenjan (2016: 87).

Each round starts with an initiative or policy proposal from one of the actors in the arena. This is the trigger for other members to react and to deploy their strategies. The consequence are several steps, in which actors keep changing their strategies in accordance to the strategies of others or regarding "societal, economic, or political developments in the environment (swings in the political climate, cabinet change, change of the economic tide, availability of new technology […])" (Klijn and Koppenjan 2016: 86). Possible outcomes of these tactics may be impasses where actors use veto-powers to block the process (blockages) or are not willing to invest in the process (stagnations). As a consequence, actors have to rethink their strategies and the game type changes. "This may result in the ending of the blockages or stagnation and the emergence of more cooperative strategies. Each round ends with a 'crucial decision' or event

that offers a solution for the issue addressed during the round and initiates a next round of interaction by putting a new challenge on the agenda" (ibid.: 84). A crucial decision can be identified when the decision or event changes the composition of actors in the game, the course of interactions and the content (ibid.).

Arenas are the institutional settings or places, where specific actors meet, interact and enact their strategies (Ostrom 1986; Allison and Zelikow 1999). As actors within governance networks cut across different disciplines and levels, decision-making and interactions may be located in one or more arenas. "For instance, in decision making on airport expansion, issues such as transport, economy, employment, planning and zoning, noise, safety, and so forth play a role. As a consequence, decisions about the future of the airport are made in the context of various types of policies in various arenas and at various government levels" (Klijn and Koppenjan 2016: 82). Consequently, most actors will only be represented in some arenas as others might be inaccessible. Thereby, it is also likely that a party is not represented in any arena at all (Cohen et al. 1976; Ostrom 1986; Ostrom et al. 1994). Following this fragmentation, actors might experience unexpected decisions which directly influences them as they were not represented in the specific arena.

However, the games played and decisions made in arenas do not occur in a vacuum; there are rules and other institutional mechanisms at work affecting the structure and outcomes of interaction-processes. Klijn and Koppenjan (2016) classify networks as "crowded institutional spaces" (ibid.: 102): Many rules are applicable in networks as a wide variety of actors who build on a different set of organizational rules, procedures and behaviors are involved in the decision-making process (March and Olsen 1989). This often leads to uncertainty; rules contradict with each other or it is unclear which rules to follow in network decision-making (Klijn and Koppenjan 2016). But before elaborating on the institutional characteristics of networks, it is important to define the term 'institutions' more closely. According to Scott, "institutions consist of cognitive, normative and regulative structures that provide stability and meaning to social behavior. Institutions are transported by various carriers – cultures, structures and routines – and they operate at multiple levels of jurisdiction" (Scott 1995: 33). As already touched upon above, institutions are often linked to rules. Scharpf for instance defines institutions as "systems of rules that structure the courses of actions that a set of actors may choose" (Scharpf 1997: 38). He thus sees institutions as rules that structure actor's behaviors. With regard to governance networks, it is argued that cooperation is harder to achieve when

rigid rules are at work that leaves little room for flexibility. Thus, networks with less rigid rules stand higher chances for cooperation.

In this aspect, theorists on network governance have demonstrated in several studies that the level of trust in networks has significant implications on the performance (Provan et al. 2009; Klijn et al. 2010). "Networks with a strong institutional structure, such as recognizable rules and relatively strong trust relations between actors, may result in lower transaction costs because further cooperation does not need to be developed from scratch, and parties can rely on existing arrangements" (Klijn and Koppenjan 2016.: 121).

Trust is regarded as the perception of the good intentions of other actors; it describes the willingness of an actor to accept vulnerability while, assuming positive intentions or behavior from another actor (ibid.). According to Klijn, Edelenbos and Steijn (2010), the literature generally agrees on some characteristics that are central in this regard being vulnerability, risk, and expectations. To put it simpler, an actor is willing to take a risk and therefore shows some vulnerability since he or she has the expectations that other actors will not behave opportunistically by abusing this vulnerability. Furthermore, literature discusses several advantages of trust. Trust can reduce transaction costs as it can diminish the necessity of elaborated contractual clauses developed to inhibit opportunistic behavior. It can also enhance the willingness of actors to make investments as well as improve knowledge exchange and learning mechanisms. Lastly, trust can stimulate innovation; and has a positive impact on citizenary compliance (Klijn and Koppenjan 2016; Klijn, Steijn and Edelenbos 2010; Moyson, van der Walle and Groeneveld 2016). In theory, it is often mentioned as the core coordination mechanism in governance networks. Nevertheless, this does not mean that hierarchical or market mechanisms are absent in these processes. It is rather argued by theorists that trust in governance networks is rare to find as interest conflicts and strategic behavior overweigh (Scharpf 1978; Marin and Mayntz 1991; Rhodes 1997). Trust can thus not be seen as an inherent characteristic of networks. Nevertheless, its importance for network performance is uncontested: "Given these findings it is probably better to reverse the argument about trust and networks: trust is not the sole coordinating mechanism of networks, but trust is an important asset to achieve in networks. It reduces strategic uncertainty, and thus facilitates investments in uncertain collaboration processes among interdependent actors with diverging and sometimes conflicting interests" (Klijn and Koppenjan 2012: 594).

Due to the horizontal nature of governance networks, literature stresses that an adequate management style is needed to govern these complex decision-making processes which can be

referred to as ‘network governance’, “a specific policy or management style to be applied in multi-actor settings” (Huys and Koppenjan 2010: 1). Thus, a traditional way of management based on command and control stands little chances of success in governance networks as network managers do not possess hierarchical means to intervene (Klijn and Koppenjan 2016). Therefore, it requires negotiating skills, skills to link actors and skills to satisfy the interests of a wide variety of actors whose resources are needed to implement solutions. Furthermore, managers should accept the complexity and interdependence of actors in networks. A manager who recognizes this will try to reach consensus in a process of negotiation and consultation with other parties based on trust which is of high importance as indicated before. Managerial activities can help develop and maintain trust; through leadership essential mediation and facilitation can be delivered to improve the collaborative process in which trust is built (Klijn, Steijn and Edelenbos 2010; Ansel and Gash 2008). Ansel and Gash (2008) argue that trust can be built through facilitative leadership. Since collaborative governance crosses institutional boundaries, trust cannot be assumed; therefore, managerial activities should not only focus on finding solutions but also on creating processes for collective action and problem solving through which trust can be improved (Ansel and Gash 2008; Booher 2004). Literature especially stresses the following strategies that network managers should follow:

- Initiating and facilitating interaction processes between actors (Gage and Mandell 1990; Kickert et al. 1997)
- Creating and changing network arrangements for better coordination (Scharpf 1978; Rogers and Whetten 1982)
- Creating new content, for example by exploring new ideas, working with scenarios, organizing joint research and joint fact finding (Koppenjan and Klijn 2004)
- The application of a process design that allows for flexibility throughout the rounds of decision making (Klijn and Koppenjan 2016)

Several studies have thereby shown that intensive network management correlates positively with the performance and outcomes of governance process (Klijn et al. 2010; Huang and Provan 2007). However, practice shows that the necessity for managerial activities in networks is mostly underestimated. Managers tend to fall back to a hierarchical form of network management and thus frustrate the interactive process. Klijn and Koppenjan (2012) state in this aspect: “Involving stakeholders in processes may cause disappointments due to rising expectations. While managers may involve citizens with democratic perspectives, the latter participate because they expect substantive results. Often the boundaries of interactive

processes are set in such a way that it is hard to meet the preferences of participants" (ibid.: 593).

When describing the main concepts of network governance, it can be derived that governance network processes are influenced by social, cognitive and institutional complexities. To acknowledge and deal with these complexities is crucial for achieving a positive outcome of these processes where actors contribute towards a common solution. Thus, network governance introduces learning mechanisms as the main criterion to assess the outcomes of complex decision-making processes. It is argued that different types of learning are central for the coordination and to ultimately deal with wicked problems in network settings. Thereby the focus does not lay on individual actors and how they learn to accomplish their own goals. Rather, learning processes at the network level are of interest and the question, how actors learn to adjust their strategies and arrive at joint-solutions and how they coproduce for the realization of policies, projects or services (Provan and Milward 2001; Klijn and Koppenjan 2016). Sabatier speaks in this context of learning across policy advocacy coalitions, between different groups of actors (Sabatier 1988, 2007). Klijn and Koppenjan (2016) define learning in networks as "the sustainable increase in shared knowledge, insights, and work methods between parties" ibid.: 246). Thereby, the following areas of learning can be distinguished: learning about substantive complexity (cognitive learning), learning about social or strategic complexity (strategic learning) and lastly, learning about institutional complexity in governance network processes (institutional learning). Thus, these learning effects can be seen as the evaluation criteria for the success or failure of governance networks.

Cognitive learning can be defined as the increase in shared knowledge and insights regarding causes, nature and impacts of problems, solutions and common grounds for joint problem-solving and policy-making (ibid.). Therefore, effects of cognitive learning are visible in the perception-alignment of participating actors, the enrichment of solutions throughout the process as well as the realization of policies which are characterized by the inclusion of various goals and interests of actors within networks and its external environment. For assessing cognitive learning in networks, the concepts of joint image building and goal intertwinement can be taken as evaluation criteria. Joint image building can be seen as an indicator for the process of perception- and frame-alignment. It "has been accomplished when actors achieve better insight into the nature of the problem and the consequence of solutions as a result of interaction and (scientific) research, and parties have come to an agreement about perceptions and the authoritativeness of the available knowledge" (ibid.: 247). If actors meet not any of these

criteria, substantive complexity will persist and problems not be solved. It also does not help if research is conducted but actors do not agree on the meaning and significance of it, hence, the process stagnates and substantive complexity enhances (van de Riet 2003). Thus, in order to accomplish joint image building and cognitive learning effects, negotiated knowledge has to be realized: Agreement about solutions or package-solutions which are supported by scientific knowledge (De Bruijn and ten Heuvelhof 2002; Klijn and Koppenjan 2016). The achievement of goal intertwinement reflects cognitive learning as actors agree upon innovative and enriched policies or services that intertwine their diverging goals. Thus, intertwinement can be also compared to finding win-win situations where objectives of multiple actors are realized at the same time (Kickert et al. 1997). Goal intertwinement can be measured by what is called ex-post satisficing, the degree to which actors are content with the outcomes of the process or intermediate outcomes. Furthermore, goal intertwinement can be also expressed by the degree to which final solutions have been substantively enriched compared to former proposals (Klijn and Koppenjan 2016). Additionally, it seeks to measure if interests of third parties were included (inclusiveness), if proposals for solutions were combined in an innovative way and services successfully integrated. Thus, the following factors are of interest in this aspect:

- whether solutions can be qualified as win–win, given the (re-)allocation of costs and benefits that they cause, also taking into account compensation measures that may have been agreed upon
- whether new innovative solutions have been achieved
- whether criticisms on previously developed solutions are addressed adequately, that is, incorporated in the newly developed solutions or addressed adequately by information on the problem and the solution
- whether the proposals for solutions have changed and have been refined in the course of the process. This can be assessed by comparing the initial (ideas on) solutions with the last versions of the solutions

(Klijn and Koppenjan 2016: 250)

As a second evaluation criterion, strategic learning assesses the quality of the process. It describes if parties growingly acknowledged the involvement of other actors and their interdependence. This type of learning is accomplished, when actors have successfully managed mutual negotiation processes where problem formulations and solutions are identified. Thus, looking at the strategies deployed, the game types played and the length of the process allow for the judgement of the process (ibid.). High transaction costs and a long

duration do however not indicate that a process was unsuccessful. This measure has to be taken regarding if cognitive learning appeared or not. Applying coordinative actions, generating negotiated knowledge and arriving at satisfactory, commonly shared objectives are processes that can cost a lot of time. Therefore, also rather short governance processes where transactions costs are little do not guarantee success beforehand (ibid.). Furthermore, the occurrence of blockages, stagnations and breakthroughs holds important implications for the evaluation of the quality of the process. Blockages and stagnations tendentially imply that actors were unable to arrive at joint-actions as maybe no common ground could be found. Nevertheless, blockages can also move stagnating processes forward as actors have to overthink their strategies which might activates them to invest in the process and to collaborate. As a consequence, breakthroughs may emerge which mostly indicate that actors were successful in their intertwinement of goals and have learned (ibid.). When evaluating the outcomes of governance processes, it is especially crucial to pay attention to the democratic character of policymaking. Thus, it is important to determine the degree to which ideas of interested third parties were acknowledged and incorporated who were not represented (Majone 1986; Marin and Mayntz 1991; Kickert et al. 1997). Thereby, objective and scientific knowledge does not vouch for the coverage of third-party's interests. These interests mostly relate to issues such as the accessibility of the decision-making process, its transparency and accountability (Klijn and Koppenjan 2016).

Lastly, the success or failure of governance networks can be indicated by the degree to which institutional learning took place over time. Were the interactions characterized by the creation of enduring relations, institutional rules and a high level of trust that supported their interactions in following rounds of decision-making? Institutional learning therefore refers to the long-term development of institutions and has emerged when there has been a change in existing relation patterns of network actors towards stronger and more endured relationships. "Actors and networks become linked, and the evolution of policy game(s) that develop around new problems or proposals for new policies and public services happens under more favorable conditions: supportive institutional arrangements facilitate and support the interaction between parties. Parties know where to find one another, know how to deal with one another, and can better shape their interaction" (ibid.: 253).

3. Research design

3.1 Towards a conceptual framework

The conceptual model of this paper derives from the main concepts introduced in the theoretical framework and especially orientates on the structure of the research papers of van Gils and Klijn (2007) and Huys and Koppenjan (2010) who applied network theory to similar complex decision-making processes. In their articles, they focus on the expansion of Rotterdam Harbor (van Gils and Klijn 2007) and the expansion of Schipol Airport with the challenge to combine growth with environmental guidelines (Huys and Koppenjan 2010). In order to answer the proposed research questions, concepts from network theory are being used as independent variables to analyze and explain the dependent variables, the process of a complex decision-making process presented as rounds of decision-making with intermediate outcomes.

The strength of network theory is that it provides a set of analytical tools as well as normative implications. As mentioned before, the goal of this paper will be first to analyze complexity in decision-making from a network perspective. Thus, social, cognitive, institutional and management factors will be applied that are mentioned by network theory to analyze different rounds of decision-making. The in-depth analysis of these decision-making processes using variables such as actors and strategies (strategic factors), perceptions and the use of information (cognitive factors), arenas (institutional factors) and the form of management style applied (management factors) provides not only important information for analyzing the process but also explaining and evaluating the outcomes of these rounds. By asking if strategic, cognitive or institutional learning occurred and if the adequate management style of network governance was applied, strategic, cognitive, institutional and management causes can be identified. Strategic causes determine if actors are capable of coordinating their strategies alongside to the other actors. It might be influenced by the quality of interactions and the level of social variety in the process (Termeer and Koppenjan 1997). Cognitive causes asses the discovery of common solutions and collaborative advantages in interactions. This might be done through the reframing of problems or the introduction of new ideas (Rein and Schön 1992). Institutional causes address the complexity of multilevel governance. Are there institutions that reduce the costs of interactions and is there a relationship of trust in the network (Huys and Koppenjan 2010)? Lastly, management causes identify if the interdependencies of actors were acknowledged and the process managed in an inclusive way. Were there specific roles in the process to design, facilitate and mediate the decision-making process (Huys and Koppenjan 2010)? Building on these criteria, it should be possible to evaluate and explain the outcomes of

the decision-making rounds from a network perspective. However, attention should be paid to potential external causes that may have influenced the process. Identifying these factors could add to theory. Thus, the conceptual framework presents itself as follows:

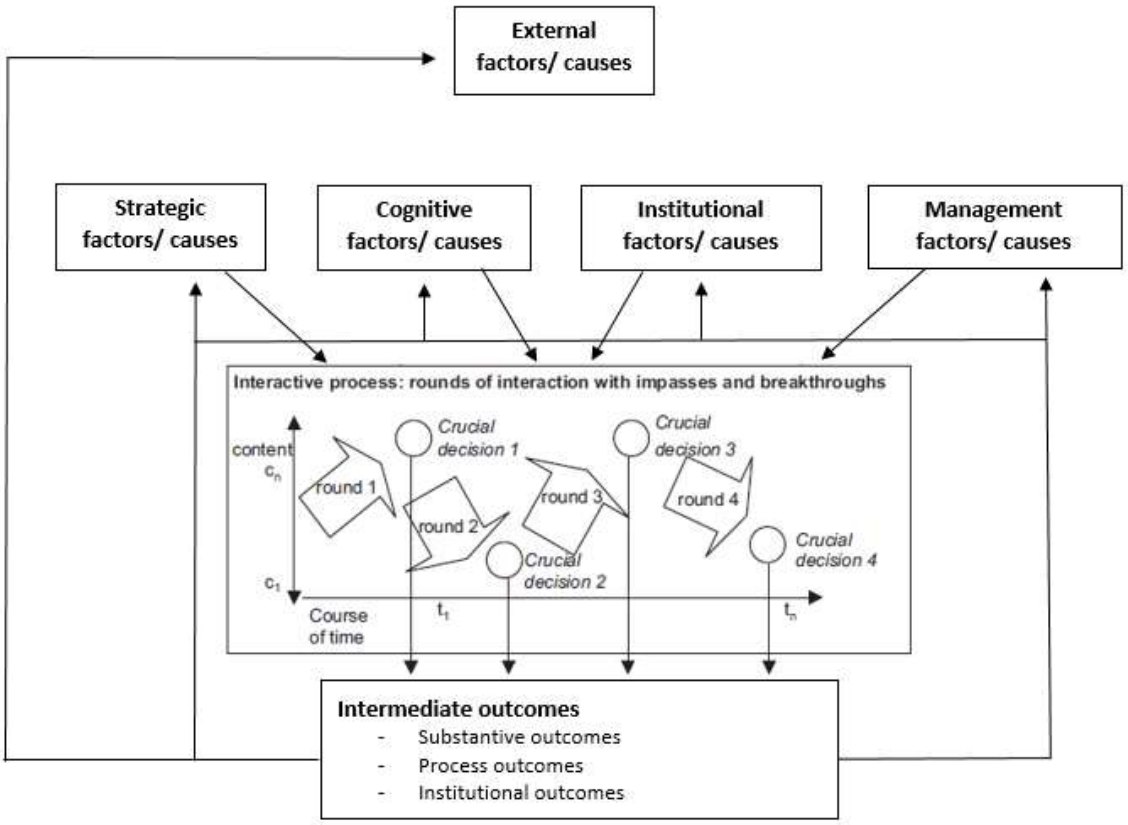

Figure 2: Conceptual Framework: factors to analyze and explain the governance process. Source: own adaptation.

In a first step, all rounds will be analyzed in-depth and afterwards the process as a whole evaluated and explained from a network perspective. In the end, the process will be wrapped up and the main findings presented. Consequently, with applying this conceptual framework, it should be possible to answer the main research questions:

1. How can we analyze complexity in decision-making from a network perspective?
2. How did each policy round evolve?
3. What were the intermediate outcomes of each policy round?
4. How can we explain and evaluate complex decision-making processes from a network perspective?
5. Are there other factors that have to be taken into account which had influence on process and outcomes?
6. Which factors ultimately influenced the realization of the new runway at Munich Airport?

7. Is the governance network approach suitable for the management of similar infrastructure projects in future?
8. Which implications do the findings have on other infrastructure projects in Germany?

3.2 Operationalization

Touching upon the conceptual framework, in the following, the concepts, variables and their indicators are determined more closely. To give the reader a better overview, this is presented in table-form.

Concept	Variable	Indicator
Strategic factors	**Actors**	Number of individuals, informal groups of individuals, organizations, and groups of organizations involved in the decision-making process
	Strategies	Actions or intentions of actions which aim to influence the behavior of other actors, based on their perceptions
Cognitive factors	**Perceptions**	Set of beliefs, ideas, and opinions actors have regarding the existence of a problem or what it is about
	Use of information	Interpretation of information by network parties (e.g. different interpretation of research results)
Institutional factors	**Arenas**	Institutional settings or places where decisions are made
Management factors	**Form of management style**	Describes how (interaction)-processes between network actors are managed e.g. hierarchical form of network management based on command and control or forms of network governance
Process	**Rounds of decision-making**	Interaction processes in governance networks with specific issue on the agenda and stagnations and breakthroughs
Intermediate outcomes	**Crucial decisions**	Decision or event that offers a solution for the issue addressed during the rounds (contains substantive outcomes, process outcomes or institutional outcomes)
Cognitive causes	**Cognitive learning (content-related)**	Occurrence or absence of cognitive learning: Assessed by looking at concepts of Joint

		image building (frame alignment and consensus building, negotiated knowledge) and Goal Intertwinement (win-win situations: ex post satisficing, enrichment, integration and inclusiveness of solutions)
Strategic causes	**Strategic learning (process-related)**	Occurrence or absence of strategic learning: Assessed by looking at transaction costs and duration, quality and Inclusiveness of the process
Institutional causes	**Institutional learning (network-related)**	Occurrence or absence of institutional learning: Assessed by looking at the development of institutions, rules and level of trust
Management causes	**Network governance**	Occurrence or absence of network governance: Assessed by looking at process management e.g. actively facilitating network governance processes, managerial activities to develop and maintain trust
External factors/ causes	**Developments in the environment of networks**	e.g. influential events, swings in the political and societal climate or crises

Table 1: Concepts, variables and indicators of the conceptual framework. Source: own adaptation.

3.3 Methodology

3.3.1 A qualitative approach

In this research, subjective perceptions and orientations of network actors will be qualitatively explored. This is due to the fact that qualitative methods are suited to grasp subjective meanings of actions and processes (Lüders and Reichertz 1986; Reichertz 2014). Furthermore, they leave room for the exploration of new and unknown issues. Characteristic for a qualitative approach is thereby an interpretative procedure in the analysis of data (Lamnek 2006). In contrast, in a quantitative analysis, individual perspectives of actors are at risk of getting lost in calculated variances and other forms of statistics (Przyborski and Wohlrab-Sahr 2014). Thus, this research is based on a case study (single-case study) in order to analyze a case in detail from a network governance perspective and to obtain in-depth insights (deductive approach). In addition, the relative novelty of the theory of governance networks suggests to focus in-depth on the assessment of concrete single-case studies before studies with a large sample size can be conducted. Although the results of single-case studies are never completely generalizable, it is

the goal here to prepare the results in such a way, that they can be helpful for the management of future network governance processes. Furthermore, as the case can be labelled as a 'critical case', it is likely to obtain more information than in randomly selected cases (Flyvbjerg 2001).

3.3.2 Data collection

For the data collection, the form of an expert interview appeared to be the most appropriate instrument-choice in this aspect. Thus, through an open interview with relevant network actors, the chances are higher to generate more information compared to a paper-and-pencil interview or a survey, for which the sample size would be too small anyways. Consequently, questions regarding processes and internal procedures can be answered more easily (Winter 2000). Furthermore, through the personal interaction with the interviewee, background information can be collected and also topic-related ambiguities removed. Additionally, as the strategies of network actors are internal affairs and take place 'behind closed doors', a personal interview has higher chances of success to obtain information and in-depth insights. As a method for the data collection, the method of a semi-structured interview was followed to receive the necessary data for answering the main research questions. Thereby, questions are categorized following a semi-structured interview guide which is formulated beforehand. However, the strength of semi-structured interviews is that a main structure of the interview is determined but important room for emerging topics and questions during the interviews is provided (Helfferich 2014). The interview questions are formulated in an open manner so interviewees can articulate themselves freely.

Additionally, data was collected from written documents, newspaper articles and online platforms in order to reconstruct and reproduce the timeline of the case as the necessary information cannot be entirely covered by the expert interviews.

For the selection of the interview partners, the main objective was to obtain a broad perspective on the issue. Therefore, relevant stakeholders from both sides of the governance network were interviewed to grasp all individual point of views on the subject. In the following, an overview of all interview partners is presented:

Name	Organisation
Daniel Zeilinger	FMG
Stephan Sellmaier	Deutsche Lufthansa
Franz Wiesmeier	Mayor municipality Fraunberg; advisory board Schutzgemeinschaft MUC

Manfred Pointner	Advisory board Schutzgemeinschaft Erding-Nord, Freising und Umgebung
Josef Hauner	District of Freising: district administrator
Gerhard Koch	City of Freising: Head of department for project planning
Herbert Knur	Former mayor municipality Berglern
Michael Buchberger	Bürgerinitiative Attaching
Christian Hirneis	Advisory board Bund Naturschutz München
Martin Falkenberg	AufgeMUCkt
Helga Stieglmeier	AufgeMUCkt
anonymous	Bürgerverein Freising

Table 2: Interview partners.

3.3.3 Data analysis

A majority of the interviews were entirely transcribed using the program 'f4transkript'[4]. The contents of the interviews were then evaluated according to Mayring as the qualitative content analysis is especially suitable for informative interviews, where the ultimate goal is the acquisition of information (Bogner et al., 2014). This coincides with the objectives of this research. Thereby, first category systems are formed where categories represent related content. Due to the structure of the interview guide, these categories are already partially predetermined. In the subsequent coding procedure, the content of the interviews is systematically assigned to the related categories (Mayring 2000, Mayring and Fenzl 2014). According to Bohnsack (2014), the task of qualitative social research is mostly reconstructive. This means that the structures and relationships between the statements are revealed and analyzed. Especially with regard to this research, similarities and differences in the answers of the interviewees were worked out.

3.3.4 Quality criteria

Internal validity requires the elimination of external context variables (Flick 2014). This is to ensure that those variables are really measured that are sought to be explored in the research. The quality criterion of validity is only partially fulfilled by the expert interview: Due to the openness of the system and the flexible application, it is likely to obtain the information and answers that were initially desired (Winter 2000). Nevertheless, it cannot be ensured that all possible context variables can be excluded. According to this, uncontrollable external factors may influence the answers of interviewees (Flick 2014).

[4] four interview partners did not agree to be recorded, therefore the interviews could not be transcribed

Also, the fulfillment of the quality criterion of reliability, the correlation between measurement series, cannot be completely ensured with qualitative interviews: Due to the personal influences on the interviews, identical interview situations cannot be created. That leads to a low correlation between the series of measurements (Bogner, Littig and Menz 2014). Both, the so-called ‘interview effect’ on the side of the respondents, as well as the subjective-based evaluation of the contents by the interviewer can thus result in a distortion of results which may affect the objectivity of the work (Glantz and Michael 2014; Bogner, Littig and Menz 2014).

4. Empirical case: The Munich Airport expansion project

In the following section, several rounds of complex decision-making in the Munich Airport expansion project will be analyzed. Beforehand, however, it is crucial to identify these rounds. A crucial decision thereby marks the end of each policy round and initiates a new one. Thus, it offers a solution to the issue and can be identified when the decision or event changes the composition of actors in the game, the course of interactions or the content (Klijn and Koppenjan 2016).

As touched upon in the introduction, the starting point of the project was the announcement of the airport operator FMG to initiate a planning process for the building of a third runway at Munich Airport in 2005. In Germany, such processes for plan approval of spatial projects undergo a special administrative procedure. On July 26 2011, and approximately six years after the start of the project and after several blockages in the course of the administrative decision-making process, the competent authority, the government of Upper Bavaria accepted the plans and granted the FMG permission to build a third runway (Regierung von Oberbayern 2011). As the decision for plan approval was legally binding, it can be seen as the first crucial decision and therefore demarcates the first policy round.

With the end of the administrative decision-making procedure and the decision of the government of Upper Bavaria to approve the plans of the FMG, the following policy process took an unexpected course. In 2012, several citizen groups as well as the green party Bündnis 90/ Die Grünen formed together and initiated a referendum in the city of Munich. The game type had changed and new actors had emerged in the process. As outlined before, 54,3 percent of the citizens voted against the third runway which should put off the project for at least one year as the city of Munich as one of the shareholders of FMG had to vote against the project (Stadt München 2019). This can be seen as the next crucial decision in the policy process and therefore marks the end of round two.

The following policy round was characterized by a legal battle between runway-proponents and opponents. With the positive result of the referendum, the coalition against the third runway saw themselves in a good position to stop the project once and for all. Several municipalities, environment groups and citizens filed in total 17 lawsuits against the decision from 2011 for plan approval of the third runway. The Bavarian Administrative Court, however, rejected all claims and additionally allowed no revision of the judgement. Even after this decision, several suits were filed against the judgement of the court for non-admission of revision. When the

National Administrative Court (Bundesverwaltungsgericht) rejected also these claims in March 2015, the legal prosecution path for the runway-opponents was exhausted and the construction of the third runway legally decided. This crucial decision ended policy round three.

As legal permission for the building of the third runway had been confirmed, there was only a political decision missing. The initial position had not changed: The Bavarian prime minister Horst Seehofer (CSU) and his government endorsed the project while the mayor of the city of Munich, Dieter Reiter (SPD), still saw himself bound to the result of the referendum from 2012. Furthermore, also all opposition parties in the Bavarian parliament were against the building of the new runway (Bündnis 90/ Die Grünen, Freie Wähler, SPD, Die Linke). In the following period, however, Seehofer tried to build up pressure and stated in a government declaration his idea of a new referendum in the city of Munich to overcome the deadlock situation. While in the subsequent time he still tried to come to an agreement with the city of Munich before the upcoming state elections, in February 2018 Markus Söder (CSU) became new prime minister in Bavaria. He moved away from a quick decision about the future of Munich Airport and stated to follow the goal of completion of the new runway by 2025. In October 2018, eventually, the state elections in Bavaria were on the agenda and in the entire preceding election campaign of the CSU the third runway was left out. With 37.2 percent of the votes, the CSU still stayed strongest power. To build the new government, however, a coalition with the Freie Wähler (FW) had to be formed who positioned themselves against the third runway in their election program. As a consequence, the CSU and FW finally declared in their coalition agreement that there would be a moratorium regarding the building of the new runway and the project thus not be realized for at least five years; for the time of the new legislative period. The final postponement of the project marked the end of policy round four.

Thus, the following rounds could be identified and the policy-process will be structured as follows:

1. Round 1 (2005-2011): The PFB process
2. Round 2 (2011-2012): Referendum in the city of Munich
3. Round 3 (2012-2015): Legal battle
4. Round 4 (2015-2018): Political decision-making process

4.1 Round 1 (2005-2011): The PFB process

With its plan to build a third runway at Munich Airport, FMG initiated the start of an extensive administrative decision-making procedure which ultimately results in a legally binding national spatial planning decision, the so-called PFB (Planfeststellungsbeschluss). The preceding process consists of a regional planning procedure ROV (Raumordnungsverfahren) and the subsequent plan approval procedure PFV (Planfestellungsverfahren). German law foresees such procedures for spatially significant projects like airport expansions that touch a variety of public and private concerns because of their spatial dimensions and actual effects (noise, environmental impact, costs) (RoV 1990: §1; Das Fluglärmportal 2019).

A ROV thereby has the function of checking the conformity of the concrete project with the objectives and principles of spatial planning and land use planning of the respective region. It is intended to create planning security for the project developer on the basis of extensive participation, project optimization and public acceptance for the project. The ROV has no direct legal effect, but must be taken into account in the subsequent planning and approval procedure as it provides an information and appraisal basis. The ROV follows a clear sequence of steps: First, it is prepared by the competent planning authority. In many federal states, this is usually the district government/ regional council. The necessary planning documents are drafted and the public authorities whose interests are affected are involved. Within the framework of public participation, the plans are then discussed and, if necessary, revised. At the same time, the program and project developer are involved and any procedural problems are discussed (ROG 2008: §§1-12; Das Fluglärmportal 2019).

The subsequent PFV decides about the legal permissibility of spatial projects and infrastructure measures. The procedure begins with the submission of the draft plan by the project developer. This is followed by a consultation procedure in which the authorities affected by the project are asked for their opinions and in which the plan is generally made available for inspection for one month in the affected municipalities. Anyone whose interests are affected by the project (e.g. by noise) may raise objections to the plan, which are to be discussed. After the plan approval authority has weighed all interests, the procedure is concluded with the spatial planning key decision (PFB). This decision binds the municipalities in their municipal planning and the citizens concerned and is also the basis and prerequisite for subsequent expropriation proceedings (VwVfG 1978: §§72-78; Bpb 2019). The first policy round revolved around this extensive administrative decision-making process and lasted for approximately six years (2005 – 2011).

4.1.1 Actors and the composition of the policy arena

Due to rising passenger numbers and a yearly increase of flight movements of seven percent from 1997 on, FMG initiated the planning process for a third runway in July 2005 to expand its capacities from 90 flight movements per hour to 120 movements per hour. They argued that a new runway was needed due to the estimated exhaustion of capacities by 2010 and the estimated doubling of passenger numbers from approximately 30 million (2005) to 55,8 million in 2020 (Intraplan 2007). Furthermore, since new airlines could not receive desired slots anymore, the airport operator feared their withdrawal from Munich Airport and an overall traffic-repellent effect (Regierung von Oberbayern 2011). In order to proceed with their plan, FMG needed the consent of its shareholders consisting of the State of Bavaria (51%), the Federal Republic of Germany (26%) and the city of Munich (23%) (FMG 2019a). Eventually, the shareholders approved the plan and invited the FMG to initialize the ROV process. They stressed that the construction of a third runway was necessary for the Munich region and Bavaria as a whole on traffic- and economic-political grounds.

In order to engage neighboring municipalities and other affected actors in the planning process of the third runway outside the formal decision-making process, the FMG and its shareholders established a neighborhood advisory council (Nachbarschaftsbeirat) in autumn 2005, shortly after the FMG shareholders accepted the plans for a third runway. The advisory board was founded in order to discuss the concerns of those affected at an early stage and to create a platform for citizen participation with open and transparent communication about the project. The council should thereby accompany the administrative decision-making process with the purpose of FMG informing the airport region about the following ROV and PFB process. Furthermore, discussed concerns and interests in the neighborhood council should be incorporated into the subsequent planning process (Nachbarschaftsbeirat 2019; FMG 2019b). Thus, next to the fundamentals of the expansion, questions about the location and length of the runway, the direct effects of noise, operational concepts and the regional transport infrastructure were to be discussed in the forum. However, the FMG made also clear that the established council was not intended to be a mediation platform for discussing whether or not a third runway should be built (Nachbarschaftsbeirat 2019). This should solely be decided in the formal decision-making procedure.

The newly established policy arena brought together almost 40 actors from various networks whose interests were affected by the project. First of all, the aviation network was represented in the council through FMG, the airline Deutsche Lufthansa (DLH) and the German air traffic

control authority (DFS). The local/environmental network was represented through a multitude of neighboring municipalities (e.g. Fraunberg and Berglern), the districts of Erding and Freising as well as citizen and environmental groups (e.g. Schutzgemeinschft Erding-Nord, Freising und Umgebung and AufgeMUCkt). Additionally, the economic sector was represented through the Chamber of Industry and Commerce (IHK) and the German Federation of Trade Unions (DGB). Lastly, the regional planning association of Munich (RPV) represented the Spatial Planning network. Edda Huther, former president of the Bavarian Administrative Court, took the role as an independent network manager and facilitated the process (ibid.).

Only after a few meetings of the council, where for instance reports about future developments of air traffic at Munich Airport and noise nuisance were presented by FMG and delegated surveyor, several citizen and environment groups decided to drop out of the platform, among them also the citizen group AufgeMUCkt consisting of over eighty individual citizen and environment groups and church associations (AufgeMUCkt 2019). They stated that the platform was mere window-dressing by FMG where all decisions about the building of the third runway are predetermined and discussions are not open but biased. The policy arena was split in two coalitions. The growth-coalition consisting of the aviation and economic network endorsed the building of the new runway whereas the local/ environment-coalition consisting of municipalities, districts, citizen and environmental groups did not support the expansion project (Nachbarschaftsbeirat 2019).

In addition to FMG's main argument that the need for a third runway was indispensable in terms of expected air traffic and passenger numbers, the economic sector[5] also stressed that a third runway was necessary to keep the location Munich, the region and Bavaria as a whole competitive and successful in future (FMG 2019b). Furthermore, DLH as the airline with the most flight operations at Munich Airport, argued that capacities for slots in peak hours were exhausted. As Munich Airport is next to Frankfurt International Airport the second biggest hub of Lufthansa, they emphasized that economic and capacitive growth at Munich Airport would be strategically important for them (Sellmaier 2018). Additionally, the IHK stated that 15.000 new jobs could be generated in ten years with a new runway.

The local/ environment-coalition on the other hand doubted the growth-prognosis of FMG. One of their standpoints was that growth was generated by FMG artificially through subsidization of new airlines at Munich Airport. Next to the arguments of nature preservation, increasing

[5] consisting of more than 150 firms and businesses in the Munich region supporting the third runway plans

noise and air pollution, many opponents of the project also argued that the Munich region had no capacity for another runway. They stated that the region had been growing for years which led to extensive traffic problems and strongly increasing costs for housing. Therefore, with a new runway, more workers and their families would move to the region and worsen the situation. Noticeable was that also a multitude of non-direct neighboring municipalities and citizen groups engaged in the process and refused the building of the third runway putting forward this argument. Table 3 below gives a main overview of the actors and their perceptions/ goals.

Network	Main actor(s)	Perceptions	Coalition
Aviation network	FMG	Third runway necessary due to estimated growth-prognosis; limited capacities with only two runways	Growth-coalition
	DLH	Third runway necessary in order to expand hub at Munich Airport; no more slots at peak hours available	Growth-coalition
Economic network	IHK	Third runway generates 15.000 new jobs; third runway necessary for economic development of Munich and the region	Growth-coalition
Local/ environment network	Municipalities (e.g. Fraunberg, Berglern)	Third runway would increase noise nuisance and air pollution heavily; question growth-prognosis of FMG; growth generated artificially through subsidization of airlines at Munich Airport; criticize possible destruction of urban district Attaching	Local/ environment-coalition
	Districts (e.g. Freising)	Third runway should not be realized due to traffic problems in the region, no capacities for more inhabitants; increasing noise	Local/ environment-coalition

		nuisance and air pollution	
	Citizen/ environment group AufgeMUCkt	Questions growth-prognosis of FMG; growth generated artificially through subsidization of airlines at Munich Airport; criticizes resettlement of citizens and destruction of urban district Attaching; environmental issues	Local/ environment-coalition
	Citizen group Schutzgemeinschaft Erding-Nord, Freising und Umgebung	Questions growth-prognosis of FMG; growth generated artificially through subsidization of airlines at Munich Airport; increasing noise nuisance and air pollution; increasing traffic problems; no capacities for more inhabitants	Local/ environment-coalition
	Citizen group Bürgerinitiative Attaching	Third runway would destruct the urban district of Attaching (located right next to the runway); Attaching would be heavily affected by increasing noise nuisance and fumes; questions growth-prognosis of FMG	Local/ environment-coalition

Table 3: Actors and perceptions in the Munich Airport policy arena. Source: own adaptation.

4.1.2 The ROV process

After twelve meetings in the neighborhood advisory council, the FMG officially requested the responsible authority – the Government of Upper Bavaria, to initiate the regional planning procedure (ROV) on July 1 2005. Before, a majority of the participants had voted against the project in the neighborhood council but without consequences as the platform had no decision-making power. It was, however, a sign of the runway-opponents that after several meetings and discussions in the council, FMG could still not persuade them with their arguments. With the opening of the ROV process, the relationship of trust between citizen groups and FMG seemed to have deteriorated further. During the process, almost all citizen groups who remained in the council declared their withdrawal. Furthermore, the municipalities and the represented districts

stated not to talk about the third runway in the neighborhood council in future anymore. Therefore, the activities in the council were from now on limited to questions of transport infrastructure and the implementation of a regional fund to recompense neighborhood municipalities and districts (Nachbarschaftsbeirat 2019, FMG 2019b).

The FMG requested to initiate the ROV process for runway location 5b. Over 26 different runway locations had been examined in the process before and were also presented in the neighborhood council. The new runway should be located northern from the existing two runways and should have a length of 4000 meters (see Figure 3). However, with this option, considerable noise nuisance was to be expected for the neighboring urban districts Attaching and Berglern as these areas were situated in the direct approach path of the new runway. Thus, specific areas in Attaching could not be inhabited anymore due to prevailing noise regulations. Furthermore, in the Eittingermoos scattered settlement, residents of eleven properties would have to be relocated (Regierung von Oberbayern 2007; FMG 2019b). FMG provided the Government of Upper Bavaria with a detailed description of its expansion plans, including eighteen expert reports and planning documents, eight files with several thousand pages and over a hundred plans.

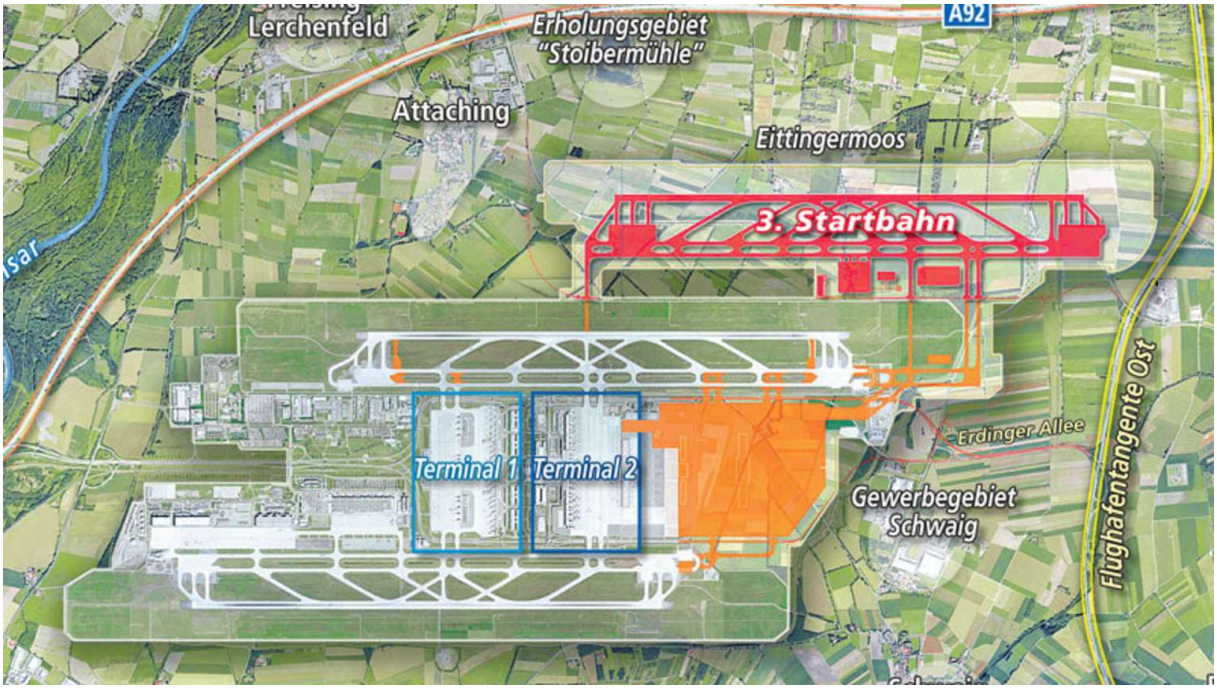

Figure 3: Planned runway 5b at Munich Airport. Source: TZ (2012).

As the administrative procedure for the ROV foresees, the plans were then made available to the public in the neighboring municipalities with the possibility to answer. When public participation ended on November 10 2006, the government of Upper Bavaria received in total 123 answers from public agencies and over 41.000 statements from private persons (FMG

2019b). Following this, FMG reviewed all collected answers and statements to the project and prepared a comprehensive commentary by the end of 2006 in order to address the concerns (ibid.).

Approximately two months after FMG had delivered its commentary, the government of Upper Bavaria assessed the runway location 5b as positive in terms of regional spatial planning. The ROV process had thus been completed. The competent authority explained that FMG had shown conclusively that the existing capacity of the runway system would be exhausted in the upcoming years and the expected medium- and long-term air traffic would hence require the construction of a third runway (ibid.).

4.1.3 The PFV process

With the positive result of the ROV process, the runway-opponents were aware that sooner or later FMG would initiate the subsequent plan approval procedure (PFV) which would decide about the legal permissibility of the project. Following this, a slight change of strategies among citizen groups could be recognized, probably also because, despite so many objections, the assessment of the regional spatial planning was positive. As the ROV and PFV are administrative procedures that are similar in their sequence and their capacity for participative involvement, the citizen groups feared that the PFV process would take a similar route. In May 2007, the citizen group AufgeMUCkt called for a protest against the third runway. AufgeMUCkt was already founded in 2002 by several citizen groups from the districts Erding and Freising. Initially, the alliance was formed to fight for a change of the night flight rules. On May 12 2007, 18.000 runway-opponents came together in the center of Munich to protest against the third runway which raised public awareness and gave the citizen groups more visibility (ibid.).

Three months later, FMG officially requested the Government of Upper Bavaria to initiate the PFV process for the building of the new runway (location 5b, 4000 meters). Thereby, FMG provided 47 files with over 10.000 pages of planning documents and 500 plans in total (ibid.). From November to December the plans were made available to the public in the neighboring municipalities and also published on the internet. This time, 59.191 objections were received – 57.032 of which were mass objections. Furthermore, 123 statements were received from affected districts and municipalities as well as other institutions. Similar to the ROV process, FMG then reviewed all objections and provided a comprehensive commentary (ibid.).

At the end of August 2008 and after longer deliberations, FMG's shareholders gave the go-ahead for the regional fund called for by the neighborhood advisory council. Thus, the airport was willing to provide 100 million euros to alleviate the hardships and special burdens caused by the third runway in the region. The distribution of funds would be discussed and decided by the council. Thereby not only affected citizens should be recompensed but also neighboring municipalities and districts should receive funds for infrastructure measures etc. However, the final disbursements of the fund were tied to the construction of the third runway (Nachbarschaftsbeirat 2019; FMG 2019b).

The competent authority, the Government of Upper Bavaria set up a public consultation to discuss the forwarded objections regarding the project. Due to the high amount of received objections, the hearings were scheduled for 59 days from November 2008 until March 2009 where almost 700 speakers spoke about all relevant topics. In total, 4500 people took part in the consultation and 58 files of summarized records were filled. After the public hearings had ended, the Government of Upper Bavaria requested FMG to submit new and updated documents. The later on submitted material included, in particular, an extended air traffic prognosis, new calculations for aircraft noise following the enactment of additional regulations under the Aircraft Noise Protection Act, new and amended nature conservation assessments and technical studies, including an environmental impact study, as well as documents on external risk and changes in real estate prices. As part of the public participation in the PFV procedure, the additional documents were made available again for public inspection. Once again, more than 20,000 objections and 70 statements from public agencies were received (BR 2017; FMG 2019b). The government of Upper Bavaria, however, did not set up an additional public consultation and prepared the spatial planning key decision that would decide about the future of the project (Schutzgemeinschaft Erding-Nord, Freising und Umgebung 2019).

4.1.4 The outcome of the PFB process and its aftermath

On July 26 2011, the government of Upper Bavaria ended the almost four-year long PFV process with a positive spatial planning key decision (PFB). Therefore, the third runway obtained legal permissibility. The competent authority explained that after an extensive examination of several aspects it confirmed the need for a third runway and accepted all submitted plans of the project (Regierung von Oberbayern 2011; BR 2017; FMG 2019b). The runway-opponents were outraged about the decision. The mayor of the neighboring municipality Freising for instance said that the decision had been a shock and that they hoped until the end for the win of rationality. Furthermore, he also announced to take legal action

against the PFB. Finally, in November 2011, the deadline for lawsuits and petitions against the PFB expired. The Bavarian Administrative Court received in total 17 lawsuits from districts, municipalities, environmental groups and citizens. As the PFB is a key decision that provides the project developer with the right of immediate execution of the project, FMG could have started with the construction work. However, they informed the court that they would not make use of their right until the court had ruled on the other actions (FMG 2019b).

4.2 Round 2 (2011-2012): Referendum in the City of Munich

The first round of complex decision-making in the Munich Airport expansion project had ended and the growth-coalition turned out to be the winner with the binding spatial planning key decision (PFB). After the loss, the local/ environment-coalition and especially the citizen groups had to coordinate their next steps. A strategy shift was needed. In autumn 2011, the green party Bündnis 90/ Die Grünen approached AufgeMUCkt and suggested the idea to initiate a referendum in the city of Munich. If the citizens of Munich would vote against the third runway in a referendum, so the idea, a deadlock situation would emerge as the city holding 23 percent of the shares of FMG would have to block the process (Stiegelmeier 2018; Falkenberg 2018). Due to the shareholders agreement, large-scale decisions like an airport expansion must be taken unanimously. In the beginning, AufgeMUCkt expressed its concerns about the idea as in this case not the direct affected citizens from the districts Erding and Freising would vote on the matter but the citizens of Munich who would be affected to a much lesser extent as the airport is located approximately 30 kilometers northeastern of Munich (ibid.). Furthermore, they were aware that if they lost the referendum, AufgeMUCkt would have no future as they had always called for the citizens will to decide in the precedent process. However, after several internal discussions, the alliance citizen group agreed to the plans of the green party who would have not proceeded with the idea themselves if AufgeMUCkt did not give its consent. They realized that a referendum was the only effective instrument they had.

In order to initiate a citizen-induced referendum, 33.000 signatures had to be collected. This is equivalent to three percent of the electorate as the municipal constitution foresees. To win then a possible subsequent referendum, a majority of the votes was needed provided that the obtained majority amounted to at least 10 percent of the electorate (approval quorum) (Stadt München 2019).

4.2.1 Actors and the composition of the policy arena

With their announcement to initiate a referendum in the City of Munich, a new policy arena came into being. In general, however, the two broad coalitions remained: On the one hand, the growth-coalition consisting of FMG and its shareholders and the rest of the aviation network (DLH and DFS) as well as the economic sector endorsing the third runway project. On the other hand, the local/ environment-coalition consisting of municipalities, districts as well as citizen and environmental groups fighting against the realization of the runway.

However, also new actors emerged or changed their role in this policy round. While AufgeMUCkt as one of the initiators of the referendum had been active in the precedent administrative-decision-making process, the green party took rather the role of a spectator, however sympathizing with the runway-opponents. Furthermore, instantly after the plans of the referendum were made public, the alliance "Munich against the third runway" was formed to support the two initiators in their campaign work. The alliance was supported by several other actors such as the Green City association and the association of Nature Protection (Bund Naturschutz). What became evident was that with the inclusion of the referendum as a political tool to block the decision-making process and the involvement of the green party, the discussion about the third runway took on a political dimension. Following this, all relevant political parties became automatically more active in the process. Next to Bündnis 90/ die Grünen, Freie Wähler (FW), the left-wing party (Die Linke) and the ecologic-democratic party (ÖDP) also supported the alliance Munich against the third runway. On the other side, the christian-social party (CSU) as governing party in the State of Bavaria and the social-democratic party (SPD) as governing party in the city of Munich were on the side of the growth-coalition (both shareholders of the FMG). Additionally, the free democratic party (FDP) supported the plans of a third runway.

4.2.2 The Referendum process

In the end of October 2011, the coalition against the third runway officially started their signature campaign with a protest in the city center of Munich which was organized by AufgeMUCkt. The demonstration was the starting point for two signature campaigns to stop the project at Munich Airport. Next to the list for a referendum in the city of Munich, opponents could also sign a state-wide mass petition entitled "counterpressure" which had been launched by AufgeMUCkt and BN. Goal of this petition was to persuade the Bavarian state parliament and government not to pursue with their intention to build the third runway (SZ 2011a).

In the following, the process took more and more the form of a political power game. The SPD in Munich and its mayor Christian Ude planned to initiate its own referendum for a third runway at Munich Airport through council order - regardless of whether the opposition would collect enough signatures. Several reasons led to this initiative. The runway proponents wanted to signalize their strength and demonstrate that they were not afraid of a referendum. It could be seen as a tactical maneuver to put pressure on the opponent's side. Furthermore, as the runway opponents seemed to be more present in the public sphere until then, the plan of the SPD was also to mobilize proponents. Another trigger for their idea was also, according to mayor Ude, that a week earlier a majority had voted in a referendum in favor of the Stuttgart 21 railway project which had also been subject to discussions for several years and would give major projects in Germany a boost in general. Next to the SPD, also the CSU came forward with the idea to initiate a referendum but only if runway-opponents had collected enough signatures. What made the issue even more peculiar was that SPD and the green party built the government coalition in the city of Munich at that time. Which made this constellation however possible was that there was no common opinion on the third runway matter so it was left out in the coalition agreement. Nevertheless, it led to tensions between both parties (SZ 2011b; Stiegelmeier 2018).

In February 2012, the runway-opponents had collected all necessary 33.000 signatures. Also, the SPD and CSU were able to prevail with their initiative in the city council. Although the green party, Die Linke and ÖDP voted against their initiative in the city council, the SPD and CSU together with the FDP still hold the majority. Thus, two referenda would be put to a vote. Runway-proponents and opponents agreed on June 17 2012 as the date for the referendum so citizens would not have to vote twice (SZ 2012a).

Three months before the referendum, the campaign work was intensified by both sides. The CSU, SPD and FDP officially formed a runway-proponent alliance with the campaign slogan "Yes to the third runway" where next to the FMG over 35 businesses and associations participated (Airliners 2012). However, none of the seven DAX (German share index) companies based in Munich officially participated in the campaign as AufgeMUCkt called for boycott of involved businesses and companies and they feared a potential damage to their image. Therefore, also one of the main arguments of the proponents, the strengthening of the economy with the third runway, lost some of its credibility. FMG provided approximately one million euros to finance the campaign which was criticized by the alliance Munich against the third runway. In comparison, they could only draw on 78.000 euros for their campaign which

was mostly financed through the involved political parties. Their campaign slogan “both sides win” aimed to create a link between the city of Munich and the actual affected municipalities and districts who were not eligible to vote. With information stands, a cinema spot and several other activities such as the “Occupy Staatskanzlei” event where hundreds of runway-opponents protested and camped in front of the state chancellery, supporters were tried to be mobilized. However, also the runway-proponents were present with several information stands across the city and information events. For their campaign, additionally an advertising agency was commissioned (SZ 2012b).

4.2.3 The outcome of the policy round

On June 17 2012, the citizens of Munich voted with 54.3 percent against the construction of the third runway at Munich Airport. As in total 32.7 percent of the electorate voted, the necessary quorum of ten percent was reached and the decision valid. The city of Munich which holds a 26 percent share of the FMG was thus required to vote against the expansion project in FMG's executive bodies. Consequently, as expansion decisions required unanimity among the shareholders, the project was put off for at least one year[6]. Mayor Ude accepted the result and stated that the city of Munich would respect the citizens will also beyond the one-year-binding-period. The other shareholders, the State of Bavaria and the Federal Republic of Germany, however, emphasized that they would continue to stick to the expansion plans and that a third runway was indispensable (SZ 2012c). A deadlock situation had emerged that made the following decision-making process even more complex. With the forced change of sides of one of the main shareholders and proponents of the project, the policy process took another course. While the runway-proponents were the winners of the former round, the runway-opponents were clearly the winners of this policy round and gave them a cutting edge. But it was only a stage win. The proponents gave themselves not defeated yet. There were still other possibilities to realize the project such as the formulated idea of the CSU to transform FMG into an incorporated company to circumvent the veto of the city of Munich. Thus, it remained to be seen what politics would make out of the process. However, one thing was certain, the process had become highly politicized.

[6] referenda in the State of Bavaria are legally binding for one year

4.3 Round 3 (2013-2015): Legal Battle

Even though the referendum had stopped the project for the moment, the construction of the third runway still had legal permissibility with the PFB decision from 2011. The subsequent initiated lawsuits after the PFB decision were now to be decided on in court. Runway opponents saw themselves in a good position after the win in the referendum. Thus, they also hoped to stop the project on the juridical level and therefore once and for all (SZ 2013a).

4.3.1 Actors and the composition of the policy arena

On March 20 2013, the trial at the Bavarian Administrative Court in Munich officially started. In total 17 lawsuits from municipalities, districts, affected residents and an environment group were filed against the State of Bavaria as its subordinate authority, the Government of Upper Bavaria, had been the respective authority that granted the PFB. Thereby, the plaintiffs focused on various arguments. From the residents' point of view, the increased exposure to noise and pollution with a third runway was unacceptable. They criticized that parts of the urban district Attaching would have to be relocated. For remaining residents, they argued, life in the district with permanent noise nuisance would be unbearable. In total, four residents were chosen as model plaintiffs by the citizen group Schutzgemeinschaft Erding-Nord, Freising und Umgebung who also supported them financially in the trial. Next to the arguments of potential resettlements and restriction of building land, the focus of the plaintiff municipalities and districts also laid on the increasing traffic on ground related to a construction of a third runway. They saw themselves limited in their rights and feared that the already busy connecting roads to the airport would become even more congested. Thus, they demanded more investments in the airport neighboring infrastructure including a commuter train connection. Lastly, the environment group BN sued the State of Bavaria on the basis that the construction of the four-kilometer-long runway would destroy an area for rare animals and plants under special protection of the EU. They argued that the in the PFB laid down compensatory measures provided by FMG were far from sufficient to compensate for the caused destruction. In fact, the conservationists had the opinion that the planned destruction was simply not compensable and therefore, the PFB had to be revoked. On the other side of the table, FMG participated in the trial as well. Although the State of Bavaria and not FMG was prosecuted, project planners and surveyors supported them. For FMG, the trial was of high importance. After the result of the referendum, they were still holding on to their plans and hoped that with an increase in flight movements, the political pressure to build the runway would raise equally. Thus, the legal

permissibility for the runway was the fundament in order to make another foray at the proper time (SZ 2013b; 2013c).

4.3.2 The juridical process

With over 40 sessions and in total five inspections of the designated area for the third runway, the trial should become a sheer never-ending process. In almost a year of trial, a paper battle with petitions, answers and counter-arguments was fought which prolonged the process. Dozens of experts and affected citizens had spoken before the court and had put forward their arguments for and against the project (SZ 2014a). Eventually, in December 2018, the court came to something like a preliminary decision. The administrative court had rejected all 136 applications to produce evidence filed by the plaintiffs. Runway-opponents were especially frustrated that air traffic numbers were not questioned and reevaluated in a new prognosis. In fact, the growth-prognosis from the start of the planning phase was far too optimistic compared to actual developments. The total flight movements had actually moved downwards rather than upwards whereas passenger numbers had slightly rose. The FMG explained that this was also due to bigger aircrafts that had been deployed at Munich Airport. Finally, and approximately one year after the start of the trial, the judge announced the verdict. As already presumed with the rejection of the evidence applications, the court dismissed all 17 actions. Thus, the PFB remained in its previous form. In addition, no revision of the judgment was admitted. After the announcement, tumultuous scenes occurred in the courtroom. The hall with more than 300 runway-opponents had to be partly cleared by the police (BR 2017; FMG 2019b; SZ 2014b).

With the confirmation of the PFB decision, the runway-opponents had to reorient and coordinate their next steps. They decided to continue their legal battle and move in front of the National Administrative Court in Leipzig and bring actions against the judgement of the Bavarian Administrative Court for non-admission of revision. Furthermore, they initiated several protests in the city of Munich and Freising, an airport neighboring municipality. It can be concluded, that the decision from the Bavarian Administrative Court had brought the runway-opponents even closer together. As mayoral elections in the city of Munich were on the agenda, they specifically targeted their protests to put pressure on the mayoral candidates. As former mayor Ude did not run for elections anymore, Dieter Reiter, candidate of the SPD, was likely to come into office. In the electoral campaign he ensured that he saw himself dependent on the referendum from 2012. However, if there were new developments and evidence for the need of a third runway, he would be open to the idea of initiating another referendum in the city of Munich at given time. Also, Josef Schmid, candidate of the CSU, positioned himself similar

in his campaign regarding the future of the airport. This reassured FMG in their strategy. They were convinced that sooner or later the number of flight movements at Munich Airport would rise and the project be brought up for political discussion again. In June 2014, Reiter was elected into office and formed a governing coalition with the CSU in the city council. Similar to the previous coalition with the green party, there was no written position on the third runway in the coalition agreement (SZ 2014c).

With their signature campaign in 2012, the runway-opponents had collected next to the referendum list also signatures for the Bavarian-wide petition to stop the third runway on the state level. Approximately three years later, the petition with over 82.000 signatures was submitted to the CSU, the majority party in the parliament. It was the largest petition that had ever been submitted in the history of the Bavarian parliament. In the economic committee of the parliament, the CSU rejected to formally agree or disagree with the project and stated that as long there is no final juridical decision, there is no need to make a decision. One month later, however, the petition was put to a vote in the parliament where it was turned down with 88 against 71 of the votes. The CSU held 101 of the 180 seats in total which gave them the majority. All opposition parties in the parliament (SPD, Bündnis 90/ die Grünen and FW) were against the third runway. The FDP as an official proponent of the runway was not represented in this legislative period. After the vote, the Bavarian finance minister, Markus Söder (CSU) and simultaneously chairman of the supervisory board of FMG strongly supported the project and stated that Munich Airport would not be a regional airport but the gate to the world for Bavaria. Furthermore, he formulated that the CSU would wait for the result of the judgement of the National Administrative Court before they would plan their next steps (FMG 2019b). Commerce secretary Ilse Aigner (CSU) went one step further and demanded once the final juridical decision would confirm the PFB once and for all, the construction should be politically endorsed without taking detours (ibid.).

4.3.3 The outcome of the policy round and its aftermath

On March 4 2015, The National Administrative Court rejected the claims of the district of Erding, the city of Erding and several other municipalities against the non-admission of the revision which was imposed by the Bavarian Administrative Court in February 2014. With regard to the growth-prognosis and with regard to noise protection, the judgment concluded that the plans met all legal requirements. Several months later, also the last lawsuits filed by residents and the environment group BN were rejected. The approval of the third runway at Munich Airport was thus final and ended the legal battle after two years (BR 2017; FMG

2019b). FMG could be seen as the winner of the policy round with the final juridical decision that the third runway could be built. However, as long as the SPD and mayor Reiter would hold on to the referendum, the runway-opponents would still hold the upper hand.

In the aftermath of the decision, the discussion about a potential transformation of FMG into an incorporated company got heated. The debate was prompted by considerations that had been made in the German Ministry of Transport. In this scenario, the unanimity rule for decisions would be abolished and the State of Bavaria and the Federal Republic of Germany could overrule the smaller shareholder, the city of Munich and thereby overcome the deadlock-situation. Söder, however, instantly rejected the idea and ensured that the possibility of enforcing the planned third runway at Munich Airport with legal tricks and against the will of the city of Munich would be no option. Furthermore, he stated, the state government would rather want to solve the issue politically and not juridically. Thereby, he suggested that the German Air Navigation Services (DFS) could for instance relocate flight routes and thus relieve the burden on affected citizens. So far, however, DFS had not even presented the concrete flight routes. He also encouraged the FMG to be more generous with the planned compensation, for instance in the heavily affected district Attaching. Until then, it had been planned that only part of the residents would receive compensation from the Airport for their real estate if they had to be resettled. However, direct neighbors living outside the compensation zone would receive nothing (SZ 2015a, 2015b). The still formal existent neighborhood advisory council, that was also set up to discuss monetary matters as compensations, had been barely active after the decision of the referendum from 2012.

4.4 Round 4 (2015 – 2019): Political decision-making process

With the end of round three and the juridical decision of the National Administrative Court, the runway project had obtained its final legal permissibility. Also, since the binding period for the initiated referendum had expired, the decision about the realization of the third runway was left to politics and a political showdown was preprogrammed.

4.4.1 Actors and the composition of the policy arena

The initial position of round four presented itself as follows. In the political decision-making arena, the Federal Republic of Germany and the State of Bavaria under lead of the governing party CSU as shareholders of FMG endorsed the project while the minor shareholder, the city of Munich, represented by the SPD, rejected the third runway as they saw themselves dependent

on the referendum from 2012. Thereby, a key role in decision-making was given to Horst Seehofer as prime minister and Dieter Reiter as mayor of the city of Munich. Around these central actors, the broad coalitions of runway-proponents and opponents positioned themselves with the previously known parties involved such as FMG on the growth-coalition side and AufgeMUCkt on the local/ environment-coalition side.

4.4.2 Towards a final decision

In July 2015 and shortly after the final judgement of the court, Seehofer declared to initiate a dialogue phase with all relevant stakeholders. Thus, he planned personal meetings on the one side with FMG, Lufthansa and representatives of the economic sector and with municipalities and representatives of citizen groups on the other side. Furthermore, a meeting was also scheduled with four parties of the state parliament who were against the project (Green Party, SPD, FW and Die Linke). Seehofer thereby emphasized that the meetings would be not about negotiations but the presentation of the respective points of view and that his decision about the project would be solely based on the outcomes of the dialogue (SZ 2015c). Especially important was one of Seehofer's last meetings that included an on-site-visit in the urban district Attaching in October 2015 where over 2000 runway-opponents participated. With his speech, he raised hope among the opponents as he explained that following the flight movements at the moment, there would be no need for a third runway at Munich Airport. Furthermore, he stated that the opponents had good arguments on their side and FMG as well as Lufthansa would have to bring forward additional prove and not solely allegations. Hence, the visit could be seen as a clear sign that he had changed his mind in the course of the dialogue. A final decision should be made until the end of the year (SZ 2015d). The CSU delegates in the state parliament reacted irritated and criticized Seehofer's clear statement against a third runway. In the following, an internal power struggle should evolve. It was common knowledge that a broad majority of the CSU representatives endorsed the project. When there were indications within the party that Seehofer was preparing the proposal for the rejection of the project, they started an informal petition list for the endorsement of the runway-project that more than half of the delegates signed. The third runway could be seen as the most important infrastructure project for the CSU at that time since it represented one of the main core values of the party's classic politics: economic development, modernization and maintaining Bavaria's leading position in Germany. Some years before, Seehofer had turned down the Donau river expansion, a prestigious infrastructure project that most of the delegates endorsed. Thus, the initiation of the petition list could be seen as a clear sign that the party would not let this happen anymore. Eventually, in December 2015, Seehofer

announced that a final decision would be only made in spring 2016 and not at the end of the year as intended. Therefore, the postponement could be interpreted as a victory of the delegates (SZ 2015e, 2015f).

In the beginning of the new year, FMG presented its traffic statistics from the previous year. Passenger numbers had rose by three percent to 41 million in total and the cargo volume had increased by nine percent. Additionally, a record profit of 135 million euros had been generated which gave runway-proponents a new impetus (FMG 2019b). In the following time, FMG systematically attempted to increase the pressure on politicians as they sensed a window of opportunity. In February 2016, more than a hundred companies and businesses, including DAX-share Infineon, formed together under a campaign demanding a competitive infrastructure for Bavaria. Furthermore, FMG boss Michael Kerkloh stated that there were currently for 16 percent of the requested flights no available slots at the airport. Whereas the momentum appeared to be in favor of the runway-opponents still in autumn 2015, it seemed as it would turn around now only a few months later. The runway-opponents, however, reacted with criticism towards FMG's traffic statistics. The trigger for this was the stationing of four aircrafts of the low-cost airline Transavia at Munich Airport in March 2016 which was partly subsidized. The subsidization of low-cost airlines to artificially increase flight movements was one of the main arguments of the opponents. FMG and finance minister Söder, however, denied the accusations and spoke of common practice. According to them, many airports would employ these incentive programs in order to remain competitive internationally (SZ 2016a).

In an interview in April 2016, Seehofer announced that he wanted to resolve the dispute over the construction of the third runway with another referendum in the city of Munich but only when the development of flight movements would justify it. He concluded that the issue could only be solved with the participation of the citizens. Due to reports, the goal was to initiate a referendum still before the national elections in fall 2017 and the state elections in 2018, given that the flight movements had increased. The CSU representatives in the state parliament on the other side still supported the construction by a large majority and wanted to realize it as soon as possible. They preferred a scenario where a package deal was made with the SPD to directly circumvent its veto-power. Thereby, one idea was that the state of Bavaria would financially support other, smaller infrastructure measures that were planned in the city of Munich and get permission for the third runway in return. Following this, Seehofer's interview was also a challenge to all those in the CSU who wanted to push through the project without citizen participation. Munich's mayor Reiter reacted to Seehofer's plan as that he felt a hundred percent

committed to the decision of the citizens of Munich and that without another referendum there would be no third runway on his behalf – thus, giving a clear rejection to the desired plans of the CSU delegates. In addition, he made it clear that he would not agree on any fixed date for the referendum such as the CSU was considering. Furthermore, according to Reiter, a referendum would only become a considerable option to him, once the airport's capacities would have actually been exhausted (SZ 2016b).

Similar to the CSU delegates, the economic sector had also encouraged the standpoint to build the third runway as fast as possible. At a meeting with Seehofer in June 2016, however, the Bavarian Economy association (VBW) signalized that if a referendum was the only possible way to realize the project, they would actively endorse it. Before, Seehofer had criticized the role of the big firms in the process of the first referendum and put also part of the blame on them. Subsequently, DAX-share Allianz promised its support for the runway-proponents. Furthermore, a more detailed plan for a possible referendum date became evident. Thus, if flight movements in 2016 and 2017 would increase steadily, Seehofer and his faction believed that mayor Reiter could be persuaded to initiate another referendum. However, a possible referendum should not be scheduled close to the national elections in 2017 and with adequate distance to the state elections in 2018, so both elections would not be overshadowed by the referendum. Therefore, spring 2018 was striven for (SZ 2016c).

In the following period, CSU party leaders announced to initiate another round of meetings where CSU delegates, ministers, trade unions and the city of Munich should participate. Runway-opponents, however, were not included which highlighted the party's hidden agenda to push through the project. It was presumably no coincidence that FMG launched a new campaign at the same time where CSU delegates started a new attempt to pressure mayor Ude and the SPD. With passenger interviews, the commitment of various companies and campaigns on social media networks the airport tried to win more proponents (SZ 2016d).

In autumn 2016 and after several internal discussions, Seehofer argued in a government statement in favor of the third runway project and opened the way for a new referendum in the city of Munich. According to him, there had been a new development in flight movements in the first half year of 2016 and would thus justify political action (Landtag 2016). However, the flight movements had only rose slightly. Therefore, it was suspected from outside that Seehofer wanted to end the inner-party conflict before the upcoming elections and bowed to the majority. Especially runway-opponents felt betrayed with regard to Seehofer's promises during his on-site-visit in Attaching. In the following months, the decision-making process would gain pace.

Due to the government statement, a power game in the city council emerged where the CSU officially demanded its coalition partner SPD and mayor Reiter to initiate together a council order for another referendum. The SPD, however, considered the recent increase in flight movements and passenger numbers as insufficient and consequently rejected the plan (SZ 2016e). Citizen and environment groups such as AufgeMUCkt intensified their protests in this time again as they sensed the growing pressure by the CSU. Nevertheless, they were optimistic that they would win another referendum and hence stop the project once and for all. In the meantime, however, on the opposition side also more than 200 companies had already joined the runway-proponent community of FMG including other DAX-shares such as German Rail (DB), Audi and BMW Group. It seemed as both sides were preparing for a new referendum. This speculation was finally fueled when Reiter also mentioned a possible date for a referendum in the beginning of 2018, if the numbers would allow so. Until then, the mayor had consistently avoided setting a specific date (BR 2017; SZ 2017a).

In 2017, FMG presented its traffic statistics from 2016. After a slight increase in flight movements in 2015, also in the following year a plus of 3.8 percent could be reported. In comparison to the record year in 2008 where in total 432.000 flight movements were registered, the number of 394.000 flight movements in 2016 still felt short by far what runway-opponents criticized (see figure 4). However, in the number of passengers the airport could announce a new record high with an increase of 3.1 percent (BR 2017). Thus, FMG saw themselves on a good way to further bring forward convincing arguments. In May, Seehofer stated at a meeting with the economic sector representatives VBW that the government endorsed the project but once again stressed that a mutual agreement in close cooperation with the city of Munich was the goal. Thereby, he also announced that the German department of Transportation and the Bavarian department of Finance were currently determining a new long-term prognosis (SZ 2017b).

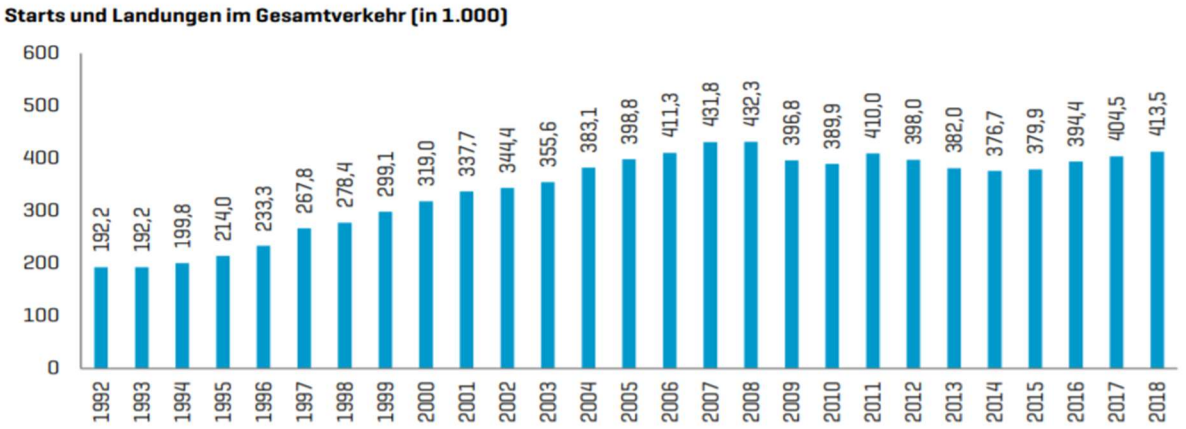

Figure 4: Development of flight movements at Munich Airport (in thousand) from 1992 until 2018. Source: FMG (2018).

When presenting their half year report in 2017, FMG could announce further increases in total flight movements and passenger numbers and predicted to reach more than 400.000 movements for the year. Furthermore, FMG was convinced that growth would continue in the upcoming years also due to Lufthansa's strategic decision to expand their hub at Munich Airport with the stationing of 15 new long-haul A350 and five A380 aircrafts from 2018 on. FMG boss Kerkloh thereby also pointed out that in approximately one to two years he expected the capacities to be entirely exhausted. According to him, the airport slots at peak hours had been already exhausted. Runway-opponents once again criticized the interpretation of the development of numbers by FMG. With one of their arguments they also referred to the PFB from 2011 where in total 480.000 flight movements were marked as the maximum capacity for the two-runway-system and was thus miles away from the current number. FMG and finance minister Söder, however, affirmed that this number was only a fiction of a best-case-scenario that would be operationally and from a security point of view not realizable. Thus, they spoke of 430.000 movements as a benchmark (FMG 2019b; SZ 2017c).

In the following period, the decision-making process did not seem to move forward. Also, for that reason, the CSU in the state parliament tried to push the issue and more and more delegates brought once again the idea of the transformation of FMG into an incorporated company into play. The opposition parties criticized the idea and officially brought forward an application of urgency to forbid the transformation of FMG. The application was rejected by the broad majority of the CSU delegates and showed that this scenario would be still an option. By the end of the year, mayor Reiter spoke about the further course of action. Therefore, in the coming months the prognosis and the traffic statistics from 2017 would be carefully evaluated and then decided if a referendum would be initiated in the city council in cooperation with the other shareholders. Furthermore, he eliminated the idea of a transformation. Before, Seehofer had

expressed his wish to initiate a referendum still before the state elections in 2018 and had also spoken of the transformation of FMG as a possible option again which prompted the opponents to plan a special campaign against Seehofer for the upcoming election campaign. In January, Munich Airport announced a new passenger record for 2017: Passenger numbers rose by 2.3 million to a new high of 44.6 million. This was an increase of 5.5 percent over the previous year. Furthermore, FMG also recorded an increase in takeoffs and landings from more than 10.000 to approximately 405.000 movements which was an increase of 2.6 percent over the previous year. A decision was to be made.

4.4.3 The outcome of the policy round and its aftermath

The year 2018 should start off with a big surprise. Prime minister Seehofer officially announced to step back and Söder, former minister of finance and chairman of the FMG executive board, was designated as successor in office. In the national elections in the end of 2017, the CSU had lost more than 10 percent of its votes in Bavaria which raised pressure on Seehofer's person and finally ended in his withdrawal. Furthermore, he was expected to become appointed as minister of interior in Angela Merkel's new cabinet. Söder should lead the CSU in the upcoming state elections in autumn 2018. In February 2018, a turning point in the decision-making process emerged. In a statement, Söder moved away from a quick decision regarding the construction of the third runway. He stated that in general the government would endorse the project but that there would be no need for immediate action. Rather, a sustainable solution was the key where it was adequate to start with a construction the earliest in 2021. Also, the CSU delegates seemed to support the new course of its newly elected prime minister. The immediate change in course could be seen as an electoral subterfuge. On the one side, the CSU was afraid to lose even more votes if they pushed the subject further. On the other side, it was important for Söder to come out of his first elections strengthened. Thus, a possible referendum that in some circumstances could have occurred that year was off the table and the decision about the third runway postponed. Even though the runway-opponents considered the drawback as a stage win, they criticized the CSU government for not burying the project once and for all. According to them, it was only pretense to sooth their upcoming election campaign. Runway-proponents and FMG in particular reacted disappointed to the announcement of Söder. They argued that the courage to fight for a major project like the airport expansion was lacking (SZ 2018).

In the subsequent election campaign, all opposition parties (SPD, Bündnis 90/ die Grünen, FW, Die Linke) positioned themselves against the third runway in their election program. The political barometer already indicated that the CSU would most likely lose its absolute majority

in Bavaria and that a possible coalition with the FDP, the only party endorsing the project next to the CSU, would not give the sufficient majority to form the government.

On October 14 2018, the election day had come. With 37.2 percent of the votes, the CSU still stayed strongest power, however, lost more than ten percent in comparison to the previous elections in 2013. The FDP only reached 5.1 percent which eliminated the option of a possible coalition. In the subsequent time, a coalition with the FW was formed who positioned themselves against the third runway in their election program. In their coalition agreement, both parties agreed to a moratorium regarding the future of the third runway. Thus, it was decided that the third runway would not be built for at least another five years. Due to its low approval ratings already during the electoral campaign, the CSU had already settled with the fact that most probably a coalition had to be formed with one of the opposition parties where the rejection of the third runway was one of the main preconditions. Even though most of the opponents were relieved about the result, many others felt betrayed by FW and the decision for a five-year moratorium. FW gained approximately three percent more votes compared to the previous elections also as they positioned themselves clearly against the third runway and voters believed they would stop the project entirely. The last round in the Munich Airport expansion project had ended. The decision about the third runway, however, is pending but still opened.

5. Analyzing process and outcomes

In this section, the success or failure of the policy debate concerning the future of Munich Airport will be discussed from a network governance perspective. This is done by asking if cognitive, strategic or institutional learning occurred during the process. As these concepts provide important criteria for success or failure, they allow for the judgement of complex governance processes. Reversely, by assessing the generated outcomes of the process following these questions, important explanations can be sought which can be referred to as cognitive, strategic and institutional causes. Furthermore, by asking if the adequate management style of network governance was applied, management causes can be derived. These causes will be discussed and demonstrated in detail after the overall assessment of the process. Additionally, external causes will be outlaid that influenced the decision-making process and its outcomes.

5.1 Assessment of process and outcomes

For assessing cognitive learning in networks, the concepts of joint image building and goal intertwinement can be taken as evaluation criteria. Joint image building can be seen as an indicator for the process of perception and frame-alignment. It "has been accomplished when actors achieve better insight into the nature of the problem […] and parties have come to an agreement about perceptions and the authoritativeness of the available knowledge" (Klijn and Koppenjan 2016: 247). If actors meet not any of these criteria, substantive complexity will persist and problems not be solved. It also does not help if research is conducted but actors do not agree on the meaning and significance of it, hence, the process stagnates and substantive complexity enhances (van de Riet 2003).The achievement of goal intertwinement reflects cognitive learning as actors agree upon innovative and enriched policies or services that intertwine their diverging goals. Thus, intertwinement can be also compared to finding win-win situations where objectives of multiple actors are realized at the same time (Kickert et al. 1997). Goal intertwinement can be measured by what is called ex-post satisficing, the degree to which actors are content with the outcomes of the process or intermediate outcomes (Klijn and Koppenjan 2016). When looking at the criteria for cognitive learning, it can be concluded that the absence of cognitive learning overweighed during the decision-making process about the future of Munich Airport. First of all, there was mostly no sign of joint image-building. The involved actors neither managed to align their perceptions nor did they realize negotiated knowledge as no agreements about the nature of the problem were made and solutions found which were supported by scientific knowledge (Klijn and Koppenjan 2016: De Bruijn and ten

Heuvelhof 2002). Rather, a knowledge-conflict could be witnessed over the course of the rounds which progressively disconnected both sides. As substantive complexity was enhanced, the consequences were stagnations in policymaking. However, in round four, some form of frame-alignment between runway-proponents (CSU, FMG) and runway-opponents (SPD) could be witnessed as they both made the initiation of a second referendum dependent on the development of flight movements. Thus, they had come to an agreement about the significance of flight movements as the main indicator for the necessity of the runway. Interesting was thereby, that over time also the citizen groups oriented on this frame as they increasingly argued on basis of this topic. Thus, the presence of their other arguments completely vanished in the course of round four. Nevertheless, this learning effect was mitigated as both sides interpreted the results differently. Whereas the CSU interpreted the increase in flight movements in 2017 already as a steady trend that justified the initiation of another referendum, the SPD did not see a significant change. Also, the citizen groups kept on criticizing the interpretation of flight movements by FMG over the entire course of round four. Nonetheless, Söder officially explained the postponement of the project later on also referring the flight movement development and that the current capacities at Munich Airport were still sufficient for a couple of years before an expansion would become necessary. However, it can be assumed that mostly political-strategic factors were responsible for this decision. Furthermore, the second indicator for cognitive learning, goal-intertwinement, did not occur over the course of the rounds. The concept of ex-post satisficing thereby holds important explanations for the evolution of the process. The initiation of the referendum in round two and the start of the legal battle in round three expressed the dissatisfaction of runway-opponents with previous outcomes. Especially after the PFB decision, they felt left out of the decision-making process as the FMG proceeded with its plan despite their disapproval. Furthermore, actors could not agree on innovative or enriched solutions such as the creation of win-win situations where objectives of multiple actors are realized at the same time. The neighborhood advisory council could be seen as the most promising attempt to incorporate suggestions of relevant actors. However, as it failed, each side positions were more entrenched leaving little room for enriched solutions in the subsequent time. This pattern even amplified in the following rounds as it seemed that actors had given up on finding a collaborative decision.

As a second evaluation criterion, strategic learning assesses the quality of the process. It describes if parties growingly acknowledged the involvement of other actors and their interdependence and is accomplished, when actors have successfully managed mutual negotiation processes where problem formulations and solutions are identified. Thus, looking

at the strategies deployed, the game types played and the length of the process allow for the judgement of the process (Klijn and Koppenjan 2016). High transaction costs and a long duration do however not indicate that a process was unsuccessful. This measure has to be taken regarding if cognitive learning appeared or not. Furthermore, the occurrence of blockages, stagnations and breakthroughs holds important implications for the evaluation of the quality of the process. When looking at the decision-making process, it can be concluded that signs of strategic learning occurred over the course of the rounds; it did however not result in the successful management of the process as no joint-solutions were found and rather fueled the conflict between both sides. Following the deployed strategies, they have not always been conflictual. This got for instance visible after the PFB decision where FMG had the right of immediate execution of the project. However, as they renounced their right and decided to wait until the court had ruled on the remaining 17 lawsuits, they enabled runway-opponents to pursue with their legal action which also gave them time to coordinate their next steps as the process was prolonged. Furthermore, in round two, after the runway-opponents had announced to initiate a referendum and include the citizens of Munich to decide on the project, the CSU and SPD as proponents of the project accepted the change of course and supported the idea to involve citizens in the decision-making process. Thus, the SPD was even willing to initiate a referendum in the city council regardless if runway-opponents would collect all necessary signatures to initiate a citizen-induced referendum. Yet, as they collected enough signatures, two referenda were put to a vote that were equal in their content. However, this reaction mechanism also conveyed the impression that the process had more the form of a strategic power game. Thus, they rather led to an opposite effect and disconnected actors even further. This power game character should shape the entire decision-making process and also how actors perceived it. Therefore, even though new actors emerged over the course of the rounds, this split between both sides could never be overcome. Direct consequences of this lack of social variety were stagnations in the decision-making process. As cognitive fixations were reinforced, actors were unable to arrive at joint-actions as no common ground could be found. Thus, the long duration in this case also indicates that the process was unsuccessful from a network governance perspective. Even though strategic learning could be witnessed and progress partially recorded, it ultimately did not result in the emergence of a consensus.

Furthermore, the success or failure of governance networks can be indicated by the degree to which institutional learning took place over time and is characterized by the creation of enduring relations, institutional rules and a high level of trust that supported interactions between actors in the rounds of decision-making. Institutional learning therefore refers to the

long-term development of institutions and has emerged when there has been a change in existing relation patterns of network actors towards stronger and more endured relationships (Klijn and Koppenjan 2016). “Actors and networks become linked, and the evolution of policy game(s) that develop around new problems or proposals for new policies and public services happens under more favorable conditions: supportive institutional arrangements facilitate and support the interaction between parties. Parties know where to find one another, know how to deal with one another, and can better shape their interaction” (ibid.: 253). Thus, when looking at the evolvement of the decision-making process, it can be concluded that institutional learning did not occur. Despite the neighborhood advisory council in the beginning of the process, additional supportive institutional arrangements to facilitate the interaction process lacked in the entire decision-making process. Therefore, over time actors did not arrive at endured relationships – rather, the impression occurred that the growth-coalition and local/environment-coalition distanced themselves increasingly over the course of time. Respectively, the level of trust in the governance network had also been consistently low which was confirmed by the interviewees. Furthermore, the prevailing institutions such as the administrative participation procedure could not support the interaction between both parties and rather hindered actors to become linked due to its rigid and hierarchical character.

5.2 Cognitive causes: diverging perceptions and knowledge conflicts

Following the for the most part absence of cognitive learning, an important explanation for the way the policy process evolved lies in the development of perceptions. It is a main characteristic of complex governance processes that due to the variety of actors involved, there are different views of the world and diverging interpretations of the environment. Thus, perceptions of actor’s clash. A similar starting position could be also witnessed in the beginning of the process with the growth-coalition on the one side and the local/environment-coalition on the other side. Thereby, especially the growth-prognosis was an issue of dispute. As also the neighborhood advisory council could not bring actors together, their varying perceptions were rather reinforced than aligned. Over the course of the meetings, the actors did not come to an agreement about perceptions and the authoritativeness of available knowledge. The reports that were solely presented by FMG and delegated surveyor were contested by the citizen groups resulting in a knowledge conflict and enhanced substantive complexity. With the subsequent initiation of the ROV process, even though a majority of the council members had voted against the project, the collaborative decision-making process was further frustrated which also resulted

in the withdrawal of several citizen groups from the platform. Also, the fact that municipalities stated not to talk about the third runway in the advisory council anymore illustrated the split of perceptions and that no common ground could be found. As the neighborhood advisory council had failed, the chance for arriving at joint-solutions had diminished concurrently. The consequences were stagnations in the following administrative procedure where in the public participation phase of the ROV 41.000 objections and in the PFV process almost 60.000 objections were raised. Objections and the demand in turn for updated documents and commentaries led to a cycle where actors reacted to counter-expertise and thus prolonged the process. It can be assumed that the outcome of round one had direct implications on the initiation of the referendum in round two. As the government of Upper Bavaria granted FMG with the PFB permission to build the third runway, the remaining 20.000 objections were not discussed in a public consultation anymore. Therefore, clashing perceptions persisted and runway-opponents felt left out of the decision-making process. In the course of round two, the main coalitions moved apart from each other even more. A substantive deadlock had emerged where both sides were not driven by dialogue finding but on winning. Thus, it took more the form of an argumentation game where they tried to win over as many supporters as possible with their standpoints. This led even to the consideration of the CSU to transform FMG into an incorporated company in the aftermath of the referendum and illustrated that a collaborative decision-making approach was out of question. Eventually, in the third round, the knowledge-conflict reached its peak. In the two-year-long trial a paper battle was fought between runway-proponents and opponents with petitions, answers and counter-arguments and lead to what is called report rains in literature where communication processes are limited to the formulation of scientific reports and the reaction to these (Hoppe 1999, 2011). Also, since the neighborhood advisory council had been barely active since the referendum, there had been no content-exchange anymore whatsoever and the legal arena was left as the only platform. As a consequence, the process stagnated once again.

5.3 Strategic causes: power games reproducing stagnations

When analyzing the development of actors, their deployed strategies, the games types played and the length of the process, important explanations can be sought. The policy debate revolved around two rather stable coalitions, with the growth-coalition on the one side and the local/ environment-coalition on the other side. Even though new actors emerged over the course of the rounds, this divide was never overcome with the consequence that social variety was lacking. At the same time, this reinforced the cognitive fixation mentioned above. Due to

diverging perceptions and remaining adversarial attitudes, the rounds took the form of a power game where each side deployed strategies for the sake of winning and in turn led to stagnations and blockages in the decision-making process. In the beginning of the process, when FMG pushed forward their plans and officially initiated the ROV process despite the disapproval of a multitude of actors, they met with hard resistance of the runway-opponents. The direct consequences were stagnations in the subsequent ROV and PFV process. Therefore, the central PFB decision to end the administrative decision-making process was only made after five years. Already back then, the process had taken the form of a power game. As FMG was the winner of round one, the runway opponents were looking for ways to still stop or at least prolong the realization of the project. Hence, they changed their tactics and came up with the idea of the referendum to create a possible blockage situation in the decision-making process. Furthermore, in the course of round two, runway-opponents initiated the coalition Munich against the third runway which was later on reacted to with the establishment of a contra-coalition by runway-proponents. These reaction mechanisms indicated the ongoing power game between both sides. Eventually, round two ended with the win of runway-opponents. Thus, they had reached their goal and the city of Munich as shareholder was forced to use its veto-power and block the process. The consequence were further stagnations in the decision-making process due to the legal obligation which however should persist beyond the binding period of one year as the mayor and SPD felt dependent on the referendum. Literature stresses that blockages can under circumstances also move stagnations forward as actors have to rethink their strategies and might activates them to invest in the process which results in breakthroughs. Breakthroughs mostly indicate that actors were successful in their intertwinement of goals and have learned (Klijn and Koppenjan 2016). In the Munich case, however, rather the opposite could be observed. The power game was continued in front of court and should prolong the process for another two years. Furthermore, what already started in round two, was that the decision-making process had become politicized. This intensified over time and also led to the political power game in round four. Here, the decision-making process became non-transparent for runway-opponents as political power games were played. Characteristic was for instance Seehofer's initial support of runway-opponents which should turn around within one year also due to political pressure of his own party. Especially the CSU thereby tried to exclude runway-opponents from the decision-making process to bring about a speedy decision.

5.4 Institutional causes: Incompatible institutions and low level of trust

Following the absence of institutional learning, another important explanation how the policy process evolved lies in the development of relationships, rules and the level of trust. Especially the level of trust has significant implications on the performance of networks. A high level of trust can thereby enhance the willingness of actors to make investments as well as improve knowledge exchange and foster learning mechanisms. However, trust in networks is rare to find as interest's conflict and strategic behavior overweighs which was also confirmed in the Munich Airport decision-making process. The development of relations between actors and the level of trust thereby followed a similar course as already shown above. With the start of the decision-making process, the neighborhood advisory council was designed as a supportive institutional arrangement to facilitate and support the interaction between parties. However, as it turned out to have the opposite effect with the knowledge conflict and later on withdrawal of several citizen groups, the level of trust diminished thoroughly. Interviewees thereby confirmed that especially in the first round a trustworthy relationship between runway-proponents and opponents was damaged which had negative impact on the entire subsequent decision-making process and also led to the following power-game character of policymaking. With the decision of remaining municipalities not to talk about the third runway in the council anymore, there were no common institutions for content-exchange left but the administrative decision-making procedure. Even though the special administrative procedures for infrastructure projects include public participation, it can be questioned if it serves the purpose and acknowledges the complexities of governance processes. Due to its bureaucratic character and rigid rules, the procedure leaves little room for flexibility which has negative effects on cooperation in governance networks. Although citizens were able to bring in their objections bit by bit, there was no proper exchange of interaction; it always followed a bureaucratic, structured procedure which is consistent with the top-down administrative culture in the Federal Republic of Germany. Thus, the process of action and counter-reaction rather reinforced the split of the two coalitions and further diminished trust. Furthermore, what additionally added fuel to the fire was that the government of Upper Bavaria as the competent authority was deciding on the project – a sub-authority of the state of Bavaria who planned the project as a shareholder. Thus, the opponents sensed a biased decision-making process which had negative effects on the legitimacy of the administrative procedure. In the following course of the rounds, neither a relationship of trust nor stable relationships between actors could be re-established as shared

institutions were lacking and ultimately also led to stagnations in the consequent decision-making process.

5.5 Management causes: fallback to hierarchical forms of network management

Lastly, the absence of applied network governance methods contributed to the failed collaboration and stagnations in the decision-making process. Literature stresses that an adequate management style is needed to govern these complex decision-making processes which can be referred to as network governance, "a specific policy or management style to be applied in multi-actor settings" (Huys and Koppenjan 2010: 1). Thus, a traditional way of management based on command and control stands little chances of success in governance networks (Klijn and Koppenjan 2016). Therefore, it requires negotiating skills, skills to link actors and skills to satisfy the interests of a wide variety of actors whose resources are needed to implement solutions. Over the course of the rounds, rather a traditional, hierarchical way of management could be identified as the process followed the administrative steps of decision-making illustrated by the administrative decision-making process in round one and the legal battle in round three. The static and hierarchical administrative procedure applied in such infrastructure projects thereby appeared rather difficult to reconcile with network governance methods as it left little room for flexibility; thus, cooperation was limited. As there was also no platform for network managers to deploy facilitative strategies and little room for negotiations was given, the interests of all relevant actors could not be satisfied and the process was thus prolonged over and over again. The establishment of the neighborhood advisory council by FMG with an independent network manager who should guide and facilitate the interaction-process could be regarded as a promising sign that network governance efforts were applied. In the following time, however, a generic phenomenon in interactive governance processes could be observed where actors tend to fall back to hierarchical forms of network management. Although FMG designed a new platform that met the demands of network governance, it also set clear limits in terms of content and outcomes as the process was not open and biased. Thus, the interactive governance process was frustrated and distrust was generated. This matches the propositions of Klijn and Koppenjan (2012) who state that involving stakeholders in such processes sometimes also lead to disappointments due to rising expectations. As citizens may be involved with regard to democratic perspectives, they usually expect substantive results. However, as also this example indicates, often boundaries of these processes are set in such a way "that it is hard to meet the preferences of participants" (ibid.: 593). This caused

disappointment should shape the relationship and the level of trust between both sides in the following rounds thoroughly. Additionally, what already started in round three and continued later on in round four was that at some point the debate about the realization of the third runway was narrowed down and fixated on the development of flight movements. With the slowly increasing flight movements at Munich Airport from 2015 on, FMG tried to build up pressure and coupled the realization of the runway to the development of movements in the next years. This frame was picked up by politics and especially demonstrated in round four where this topic should dominate the political decision-making process. It could be seen positive in some way as the debate about the realization of the third runway was from now on bound to the development of actual numbers and thus more tangible for actors outside the political decision-making arena. However, it also triggered strategic behavior and that other important content got left out of the process which in turn limited the scope that leaves room for potential negotiations and the chance to arrive at joint-solutions. Thus, topics such as noise protection or environmental guidelines were completely left out of the policy debate – measures, that have been effectively used before in similar cases as leeway to arrive at package deals.

5.6 External causes

The process and outcomes of complex governance processes might be furthermore influenced by external factors or developments in the environment of networks. Thereby, the "occurrence of crises, accidents, events, but also swings in the political or societal climate, economic or demographical developments […], may lead to changing perceptions, changing power relations, or changing institutional structures in governance networks and the interaction processes within these networks" (Klijn and Koppenjan 2016: 306). Also, in the debate about the future of Munich Airport, there were external factors at work that are crucial when explaining the evolvement and outcomes of the decision-making process.

5.6.1 Political causes: government change and electoral reasons

When looking at the evolvement of the decision-making process on the third runway, it can be derived that the process was highly politicized. Mainly responsible for this development was the shareholder constellation of FMG consisting of the Federal Republic of Germany (51%), the state of Bavaria (26%) and the city of Munich (23%). Whereas all shareholders were endorsing the project in the beginning of the process, with the outcome of the referendum the decision-making process should take another turn. As the Federal Republic of Germany and the state of Bavaria under lead of the CSU were still supporting the third runway, the city of Munich

(SPD-ruled) used its veto-power and spoke out against the project from this moment on referring to the citizens' will. In the following time, a political power game should emerge where the CSU was looking for different ways to stop the blockage. In the fourth round of policy-making, the idea of the initiation of another referendum in the city of Munich became predominant. This was made dependent on the development of flight movements. As FMG could announce new records in passenger numbers and an increase in flight movements in the subsequent time, the CSU pushed mayor Reiter and the SPD to open the way for a new referendum, also in consideration of the upcoming elections in the end of 2017 and 2018. However, Reiter refused to make a quick decision and stressed the premise of a long-term increase in flight movements to proceed with the idea of a referendum. The consequence were further stagnations in the decision-making process. Only in the beginning of 2018, the process gathered pace again. As flight movements were still increasing, mayor Reiter wanted to reassess the statistics in order to decide on a possible referendum. However, at this time, where the policy-window appeared to be opened, a change in government emerged which should postpone the project for the longer term. With the withdrawal of Seehofer and the designation of Söder as new prime minister, the CSU changed its course. Söder, who was also chairman of FMG executive board and a proponent of the project, surprisingly put off the project preliminary. Thereby, several factors have to be taken under consideration that potentially led to the change in perceptions and the postponement of the project. As the CSU lost approximately ten percent of its votes in Bavaria in the national elections in 2017, Seehofer was increasingly criticized which ended in his withdrawal as prime minister. Thus, Söder should strengthen the party again and lead them into the upcoming state elections in the end of 2018. It could be seen as tactical maneuver that the decision was made to postpone the runway project as they were afraid to lose more votes if the subject was further pushed. Furthermore, also due to prevailing low approval ratings, it could be assumed that the CSU would lose its absolute majority. Since all the opposition parties, except the FDP, were opponents of the project, the third runway could have become a burden for potential coalition talks. Thus, it was left out of the electoral program of the CSU in order to calm its election campaign. Additionally, as Söder's future as prime minister would also be benchmarked with the results of the elections, he had his own interest of coming out of his first elections strengthened. With the subsequent coalition formation with the FW, the construction of the third runway was finally postponed to at least five years.

It can be concluded, that the political factors outlaid here were responsible for the evolvement and outcomes of round four. With the change of prime minister and in the light of the upcoming

elections, the perception and strategy of the CSU shifted which led in turn to the postponement of the project.

5.6.2 Societal causes: site-specific conditions and a culture of environmental sustainability

Additionally, societal factors contributed to the evolvement and outcomes of the decision-making process. Thereby, especially the site-specific conditions in the Munich region have to be taken under consideration. What was remarkable about the third runway project in Munich was the number of people/ actors who engaged in the process. Not only did affected citizens and neighboring municipalities fight against the realization of the third runway, also a multitude of citizen-groups, municipalities or districts that were geographically not directly affected were against it. What was repeated in interviews over and over was the prevalent situation in the city of Munich and its surrounding region. According to them, the region was bursting at the seams which led to extensive traffic problems, increasing costs of living and rental prices as well as housing shortage. Furthermore, as a new runway would additionally generate thousands of jobs, they feared that the region would grow further as more workers and families from outside would move into the region. Whereas in other infrastructure projects mostly only direct-affected actors fight against their realization and non-directly affected endorse them as they generally profit from them, it could be observed in the Munich case that a broad coalition offered opposition to the plans. This resistance was also indicated with the result of the referendum in Munich where a majority of the citizens voted against the project and thus postponed it.

Furthermore, what makes infrastructure projects harder and harder to realize is the predominant culture of environmental sustainability that directly influences societal perceptions. The strong resistance of runway-opponents could therefore also be explained from this angle. More and more opponents, among them several environmental groups, could be mobilized over time which also contributed to the win in the referendum. It is to be expected that this growing resistance will influence infrastructure projects increasingly and will make it harder, despite all prevailing complexities, to arrive at mutual agreements in such projects. Infrastructure projects have thus also become subject to the question growth versus environmental sustainability as the decision-making process about the third runway shows.

5.7 Relations and interactions between factors

Following the conceptual framework, five categories of factors were presented that may had influence on the governance network process, each of them consisting of various variables.

However, it became evident, that these explanatory factors did not function separately. They influenced one another and even reinforced themselves over time. Thus, the outcomes of the decision-making process have also to be seen in the light of the interplay between those factors. Therefore, it became visible that the development of perceptions, the development of relationships between actors and the level of trust in the governance network followed a similar course. The intensifying cognitive fixation and lacking social variety over time also affected the level of trust and development of relationships and vice versa. As diverging perceptions persisted, both sides drifted apart even more and strategic behavior was triggered. Thus, as the debate got polarized around those two distinct positions, also new emerging actors in the policy-arena positioned themselves respectively. Hence, social variety was lacking over the whole course of policy-making which also influenced the level of trust accordingly. As these factors reinforced themselves over and over again, the chance to arrive at a joint-solution decreased accordingly.

6. Conclusion and recommendations

By applying governance network theory to the Munich case, a thirteen-year-long decision-making process could be analyzed and important explanations for the evolvement and outcomes of the process be sought. The process was characterized by stagnations throughout four rounds of policy-making, in which parties failed to arrive at joint-solutions and win-win situations. With the assessment of the policy-making process from a network governance perspective, the main factors or causes were identified that contributed to the failed collaborations. Thus, also the main research question *"Which factors influence the realization of the new runway at Munich Airport?"* could be answered. Following this, diverging perceptions and knowledge conflicts between actors (cognitive causes), ongoing power games (strategic causes), incompatible institutions and a low level of trust in the governance network (institutional causes) and the fallback to hierarchical forms of network management (management causes) led to stagnations in the policy process. However, also political factors had significant impact on the evolvement of the process and especially on the outcome of round four. With the change in government and due to electoral reasons, perceptions and strategies were strongly shifted and ultimately resulted in the postponement of the project. Additionally, it can be assumed that societal factors such as the site-specific conditions and the culture of environmental sustainability played an important role in shaping the perceptions of actors and therefore influenced the decision-making process. Special for the Munich case in this aspect was the strong resistance of a broad opposition group. The direct consequences were delays in the policy-making process e.g. with the win of runway-opponents in the referendum and the resulting blockage.

With regard to this research, the network governance approach proved to be a proper tool to analyze a complex decision-making process. As it provides a set of important analytical tools, the main dynamics underlying the Munich case could be revealed. Furthermore, also following its normative character, crucial factors could be identified that explained why the process stagnated and was ultimately postponed. However, following section 5.7, due to the dynamic character of interaction processes within governance networks, effects of one factor are only hard to isolate. Thus, outcomes are usually the result of an interplay of a group of factors that are themselves subject to a certain dynamic (Klijn and Koppenjan 2016). This may uncover a weakness of the applied conceptual framework as explanatory factors are in reality far more linked together. Therefore, rather the configuration of factors that produce certain outcomes should be studied than the impact of individual factors (ibid.).

Furthermore, the question arises if the lack of success in the decision-making process can be solely attributed to the inappropriate application of network governance practices. With this regard, the analysis is not conclusive. It may be the case, that certain projects just simply lack a common ground. The Munich case has shown that win-win situations were only hard to realize. Compared to other infrastructure projects, the construction of a runway only leaves little room for compromises. Thus, it remains contested if the application of network governance automatically leads to successful governance processes where joint-decisions are made. It might be only suitable for processes in which there is not only black and white and room for compromises. Possibly this uncovers an important limitation on the normative implications of governance network theory and the recommendations it provides for successful network management. Nevertheless, there have been similar cases where parties arrived at joint-solutions such as the construction of a fourth runway at Frankfurt Airport in 2011. As a consequence of a war-like dispute between runway-proponents and opponents about the construction of a third runway in the 1980s - which ended in the killing of two policemen during demonstrations, the airport operator Fraport had learned and initiated an independent and unbiased as to the result mediation group that should link all relevant stakeholders and discuss potential solutions. After two years of negotiating, the result of the mediation process was a package of recommendations consisting of five categories designed to reconcile the demands and requirements of all actors involved (Fraport 2019):

1. Optimization of the existing system: through new technology, cooperation with other airports, transfer of flights to rail
2. Capacity expansion through expansion: recommendations were made on three runway locations options: North-east runway, north-west runway and south runway
3. Night flight ban between 23.00 - 05.00 o'clock
4. Anti-noise pact: Binding program to reduce noise through the allocation of aircraft noise contingents, new fee and charge regulations, new flight routes, passive noise protection, property management for affected residents, noise measurement programs and voluntary commitment to noise reduction
5. Regional dialogue forum: Establishment of a regional forum which should pursue and intensify the dialogue initiated by mediation

In the aftermath, Fraport officially initiated the ROV process following these principles and the runway north-west was ultimately opened in 2011. Consequently, and as also this case indicates, lessons and practical recommendations for the management of governance projects

can be drawn. As both cases were similar in terms of their characteristics and starting position, the recommendations elaborated in the mediation process in Frankfurt also fit the findings of this research and thus also serves as a basis for effective suggestions that can be derived to arrive at a collaborative solution. The Frankfurt case thereby highlights the importance of widening the policy-scope that enhances the room for negotiations and the chance to arrive at a common solution. In the Munich case, however, this enrichment was clearly lacking over the whole course of the process. Thus, the example shows the importance of an interactive governance platform that is not predetermined on its results and unbiased. By furthering reflections on basic assumptions and through the inclusion of various topics, the policy-scope was widened and variety introduced to the process which counteracted cognitive and social fixations in the debate. As a result, the involved parties arrived at a consensus. With regard to the Munich case, the neighborhood advisory council can be seen as a main weakness that constrained collaborative decision-making. As FMG initiated the platform with a predetermined agenda and outcome, the scope was limited already beforehand leaving no room for actual negotiations about the realization of the runway. Thus, important topics were left out and also led to the polarization of the project around those two coalitions. As runway-opponents had no say in the council, distrust between both sides was generated. Therefore, prerequisites for successful process management are not to impose solutions on other stakeholders, not to marginalize interactive arenas and to manage the expectations of network actors (Koppenjan and Klijn 2004). Hence, following the set of measures from the Frankfurt mediation leads to the assumption that a joint-solution was possibly also realizable in Munich. In Frankfurt, one of the main factors that led to an agreement between both sides was for instance the introduction of a night flight ban from 23.00 - 05.00 o'clock. At Munich Airport, such a night flight restriction was already established, however from 00.00 – 05.00 o'clock. Thus, compared to the other main international airports in Germany (Berlin, Hamburg, Stuttgart) where the same night flight rules apply as to Frankfurt Airport or are in the case of Dusseldorf even stricter (22.00 – 5.00 o'clock), Munich has the shortest night flight restriction. Therefore, with regard to this subject, space for negotiations would have been given. Also measures such as the cooperation with other airports (closest airport Nuremberg for instance has no night flight ban), the facilitation of access to the rail network to transfer domestic flights to rail or applied anti-noise measures such as realized in Frankfurt could have been effective to enrich the room for solutions and thus could have contributed to arrive also here at joint-solutions and win-win situations. In addition, the different approaches of Fraport and FMG were reflected in the fact that Fraport waited for the results of the mediation process and then fully adopted the proposals

in the following zoning procedure whereas FMG initiated the ROV process already after a short time despite the disapproval of its council members.

Furthermore, as already stated in the introduction, the Munich expansion project can be perceived as a critical case. The project is a typical example of a wicked problem as it deals with competing values like economy versus ecology. As the application of governance network theory on cases in a German context has been low so far, important implications can be derived. The case study has shown, that the institutional setting in Germany rather constrains the application of network governance strategies. As the identical hierarchical administrative procedure is applied for all infrastructure projects in Germany, it can be assumed that the room for network governance methods is also limited for them. The consequence may be similar outcomes like in the Munich case and be characterized by no joint-solutions and long-term stagnations in the policy process. Another important finding are also the political factors that influenced the decision-making process. However, this was mostly due to the specific shareholder constellations in the Munich case and are thus not generalizable for other cases. Nevertheless, it implies that political factors may be crucial and should always be acknowledged when analyzing similar cases from a network governance perspective. Lastly, the decision-making process about the realization of the third runway illustrates the increasing societal trend for environmental sustainability. Thus, it can be assumed that in future there will be more and more resistance against such large infrastructure projects and will in turn result in the rising challenge to realize them as decision-making processes will become even more complex.

However, after all, this research comes with the common advantages and drawbacks of a case study design: While an in-depth analysis allows for detailed empirical findings, only the investigation of additional cases allows for ultimate generalization and the assumption of causality for the reported correlations. Therefore, the analysis of similar infrastructure projects in a German context from a network governance perspective is needed. If hypotheses such as that the administrative decision-making procedure in Germany constrains the application of network governance strategies and collaborative decision-making will be confirmed, important recommendations for the management of spatial projects can be derived that may help to organize such procedures in future more effectively.

As there is still no final decision about the realization of the third runway at Munich Airport, it remains to be seen how the process evolves in future. As the agreed moratorium between CSU and FW is bound to their common governing time, the earliest date for a new debate would thus

be the year 2023. Until then, upon existing foundations may have changed and possibly lead to a restructuring and reevaluation of the policy debate. If flight movements continuously increase in future for instance, a new policy window to realize the project may open again. Nevertheless, as it is to be expected that runway-opponents will still fight against the realization with strong or even stronger resistance also then, pre-existing problems will occur. Therefore, it is suggested here that FMG should follow the recommendations provided above and take a similar approach as Fraport did to arrive at a joint-solution regarding the construction of a new runway. As German law foresees, the implementation of a plan must be initiated within five years from the final juridical decision on or it expires (VwVfG: §75). Thus, the PFB will lose its validity in 2020. Hence, as FMG would have to initiate a new zoning procedure and the initial starting position would be restored, Frankfurt could be followed as a best-case example.

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