1 Introduction

The following sections in this chapter outline the motivation for studying the topic of this thesis and present the core research questions. Subsequently, the structure of the thesis is presented, followed by a description of the overall research context and research design. Finally, the anticipated contributions of the following dissertation will be introduced.

1.1 Motivation

> *"Greater use of renewable resources is no longer just an option, it is a necessity. We must drive the transition from a fossil-based to a bio-based society, with research and innovation as the motor."*
>
> (European Commission 2013)

Systems of production and consumption today face an increasing need to respond to societal challenges, such as climate change, environmental pollution, or scarcity of natural resources (McCormick and Kautto 2013). This development has resulted in the need for a transformative change and a transition from a fossil- and mineral resource-dependent paradigm towards a path that takes advantage of bio-based resources (Staffas et al. 2013). However, an economy founded on biomass instead of fossil and mineral resources requires a significant shift in socio-economic, agricultural, energy, and technical systems (McCormick and Kautto 2013). As a result, various international organizations and national parliaments (e.g., the Organization for Economic Cooperation and Development (OECD), the European Union (EU), the United States of America (USA), and Germany) have developed policies for designing a bio-based economy. The different strategies have often been summarized and published under the conceptual umbrella of the term bioeconomy. The policy agendas highlight that substantial advances and benefits can be expected in the field within the coming decades at regional, national, and international levels, including the reduction of greenhouse gas (GHG) emissions, less dependence on fossil resources, a better management of natural resources, and an increased food security (e.g., BMBF 2011; Commission 2013; OECD 2009).

As indicated by the introductory quote, Europe's bioeconomy strategy strives for the transition from a fossil-based to a bio-based society. In turn, it focuses on the production of renewable resources and their conversion into products that range from food and feed to bio-based products and bio-energy. While the potential benefits of an advanced bioeconomy appear to be immense, the transition towards it will depend heavily on the availability of sustainable biomass

(Hennig et al. 2016; Scarlat et al. 2015). However, biomass availability is limited in Germany as well as in the EU and also worldwide (Hennig et al. 2016). As a consequence, existing and future renewable resources have to be managed both efficiently and effectively in order to reach the expected benefits.

In this context, next to agriculture, forestry is the most important sector that supplies raw materials for the bioeconomy (Bioeconomy Council 2016). In contrast to other biomasses, forestry provides several advantages: relative to agriculture, it offers a large production potential that does not threaten food security, which is a major concern in fostering the development of a bioeconomy (Scarlat et al. 2015). Furthermore, forests cover more than 40 percent of the EU's landmass and this figure is gradually increasing. Therefore, the supply potential of wood is large and also on the rise (Ollikainen 2014). In addition, and most importantly, significant amounts of wood residues (about 176 million m^3) can be recycled, recovered, and reused for further processing in products or in energy (Mantau 2012a). Hence, through the lens of cascading utilization, where the ultimate aim is to maximize the sequential reuse of a material followed by a final use for energy generation (Höglmeier et al. 2013), wood, in particular, is going to be an important feedstock and an essential enabler towards the transition from a fossil-based to a bio-based society (Hennig et al. 2016).

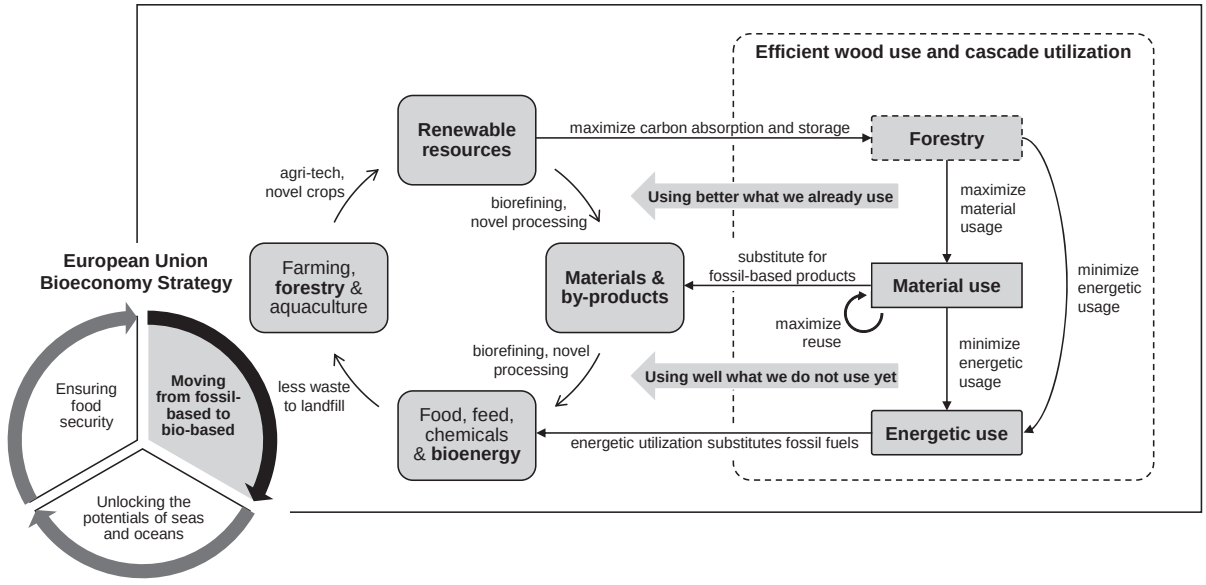

Figure A-1. Efficient wood use as an integral part of EU's bioeconomy strategy (based on BioVale 2017; European Commission 2017)

As a result, forestry contributes to the objectives of the EU's bioeconomy strategy in a number of ways (see Figure A-1). First, wood directly increases total carbon storage. Compared to other sources of biomass, forests have a high potential in carbon sequestration, meaning that wood

products serve as a carbon pool during their lifetime (Höglmeier et al. 2013; Ollikainen 2014). For example, in 2010 products of the pulp and wood industry in the EU-27 stored an equivalent of 104 million tons of CO_2 in the long run (Mantau 2012a). Second, wood can substitute for other fossil-intensive materials. For instance, around 85 percent of oil-based polymers could be replaced by bio-based alternatives (Scarlat et al. 2015). Furthermore, compared to the use of virgin wood or non-wood products, the cascading reuse of wood leads to additional positive effects on carbon and energy balances (Höglmeier et al. 2014; Sathre and Gustavsson 2006). Third, wood can displace fossil fuels, when used for combustion with energy recovery after material use (Höglmeier et al. 2013). Hence, prioritizing the material use of wood does not foreclose its use for energy generation. Instead, if preliminary material use and subsequent energy based utilization are combined or if by-products and waste products are ultimately utilized for energy generation, then a double dividend can be achieved (Bioeconomy Council 2016). Consequently, the efficient use of wood represents an integral prerequisite for achieving the sustainability goals of EU's bioeconomy strategy.

However, wood is not available infinitely with respect to both volume and regional availability (Höglmeier et al. 2013). Nonetheless, the material reuse of wood has remained well below its potential so far (Bioeconomy Council 2016). As a consequence, organizations of the wood industry are facing an increasing competition for raw materials, associated with rising prices (Höglmeier et al. 2013; Schwarzbauer and Stern 2010). In order to meet the growing demands and to ensure stable supply for multiple purposes, and, to ensure, in turn, competitiveness of this crucial sector of the bioeconomy, increasing the efficiency of the processing and utilization of wood is an imperative (Höglmeier et al. 2013; Ollikainen 2014).

In this context, modern information and communication technologies can play a decisive role, as they facilitate effective information sharing and decision making, and thereby, enhance organizational flexibility, efficiency and responsiveness while minimizing risks and costs (e.g., Kohli and Grover 2008; Masli et al. 2011; Melville et al. 2004). In addition, the integration of IT across organizational boundaries (Interorganizational IT) is a prerequisite for an effective collaboration and coordination among distributed organizations (e.g., Grover and Kohli 2012; Saraf et al. 2007). This is particularly true for the wood industry, where organizations are typically closely linked to a high degree of cascade utilization. This calls for holistic optimization across the entire supply chain, so that full advantage can be taken of by-products and reusable materials while minimizing waste, which results in an optimized and boundary-spanning allocation of resources (Narodoslawsky 2003). Hence, for the efficient processing of wood and its

by-products, the management of information across organizational boundaries is essential, and, as a result, interorganizational information and communication technologies play a crucial role in supplying relevant information to the different actors involved (Fröhling et al. 2011; Uusijärvi 2010). In fact, precise and timely data provided by interorganizational IT are said to be a precondition for an effective management of wood supply chains. Previous research suggests that interorganizational IT can help overcome resource allocation problems and reduce uncertainty in the processing of wood in a number of ways (Appelhanz and Schumann 2015; Dykstra et al. 2002; Uusijärvi 2010). For instance, tracking and tracing systems in wood supply chains offer a wide range of benefits, including the reduction of risks and costs, an improved quality and order fulfillment process, less environmental impact, and a better service for clients and customers (Appelhanz 2013; Taskhiri et al. 2013). In addition, interorganizational IS can provide accurate real time data (such as demand data or quality data from suppliers) that are needed for an optimized and resource-efficient production planning in the wood industry (Ide and Tiedemann 2013; Tiedemann and Ide 2013). Furthermore, interorganizational IS can also enhance the consumer acceptance of wood-based products by providing information regarding quality and origin, which enables the reduction of purchase barriers (Appelhanz and Schumann 2015; Osburg et al. 2016).

However, previous studies suggest that the wood industry generally displays a reserved attitude towards the adoption of IT and also indicate that only little has changed in the behavior of organizations in this sector with regard to IT driven collaboration since the early 1990s. As a result, the application of IT remains only on a basic level and is still limited to rudimentary types of IT integration and support (Hewitt et al. 2011). Hence, despite the widely acknowledged benefits, compared to other manufacturing sectors, the wood industry lags behind when it comes to the adoption of new technologies in general and interorganizational IS in particular. This results in both unnecessary and avoidable financial and productivity losses and in lower levels of resource efficiency.

Therefore, this cumulative dissertation sets out to offer insights into the circumstances and causal mechanisms of IT usage behaviors in interorganizational networks of the wood industry. The central and underlying research questions guiding this work will be discussed in detailed in the next section.

1.2 Research Questions

As outlined above, the effective use of boundary-spanning IT is a necessary prerequisite for the efficient processing and utilization of wood within interorganizational networks. Hence, the goal of this cumulative dissertation is to investigate the factors that affect the adoption of interorganizational IT and to examine the circumstances under which IT creates value in the context of interorganizational networks in the wood industry. Therefore, it examines associated sector-specific characteristics that arise from the macro-, competitive-, and focal firm environment, and affect interorganizational IT adoption as well as the extent to which value from investments in IT can be generated and captured (e.g., Melville et al. 2004). By doing so, it seeks to offer insights and guidance for both research as well as for policy making and practice on how to effectively promote and leverage interorganizational IT. Following this aim, the thesis is structured along three guiding research questions as depicted in Figure A-2.

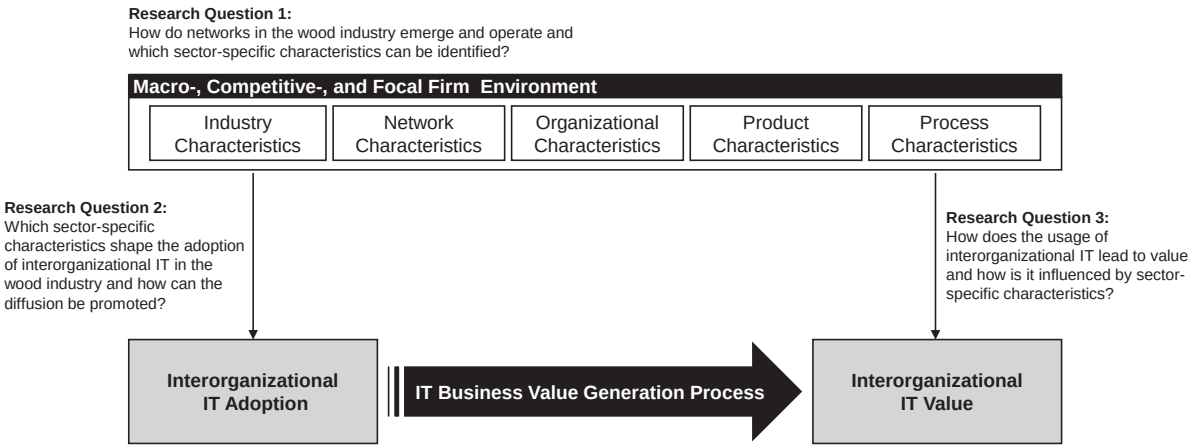

Figure A-2. Research framework and guiding research questions

Today, organizations across various sectors operate as part of highly distributed ecosystems and increasingly establish relationships and collaboration across organizational boundaries. This evolution has resulted in arrangements that are operationalized in interorganizational networks (Grant and Tan 2013; Zhu et al. 2006c). This is in particular true for organizations of the wood industry, and, accordingly, the wood supply chain has often been described as a network of actors ranging from forest owners and forestry organizations – that supply raw wood to sawmills and other organizations in the primary wood processing sector – to further processing organizations, such as furniture or the pulp and paper industry (e.g., Frank and Nagel 2009; Lemm et al. 2006). The notion of interorganizational networks is widespread in literature and the topic received considerable attention in research on interorganizational relationships (Provan et al. 2007; Provan and Kenis 2007).

Previous research on networks highlights that networks differ in terms of various aspects that are influenced by certain contextual variables. These differences are influencing both the emergence of networks as well as their operating principles, such as processes and structures, governance mechanisms, or their degree of centrality (Harland et al. 2001). In turn, this affects how information and resources are shared among network members and also determines network effectiveness and performance outcomes (Lamming et al. 2000; Provan et al. 2007; Provan and Kenis 2007). At the same time research highlights that such non-IT related factors and capabilities influence both the diffusion of IT as well as the creation of value through IT. For instance, Gibbons (2004) found that different network structures affect the diffusion of innovations and cause different adoption practices. Moreover, network-related patterns of communication and collaboration, such as information- and knowledge sharing routines are found to play a major role for the creation of IT value (e.g., Chen et al. 2013; Klein and Rai 2009; Saraf et al. 2007).

Hence, and particularly from an information systems perspective, it is important to acquire a deeper understanding of the sector-specific characteristics. As a result, it is reasonable to delve deeper into the circumstances that drive the emergence and operating principles of interorganizational networks in the wood industry before aiming to explain further IT-related issues. Consequently, the first research question derives as follows:

1) How do networks in the wood industry emerge and operate and which sector-specific characteristics can be identified?

The boundary-spanning aspect of interorganizational networks implies a level of cooperation and coordination that goes well beyond traditional arms-length relationships (Kumar and van Dissel 1996). Thus, the use of interorganizational IT pledges several advantages for collaborating organizations, including enhanced operational efficiency, cost reductions, increased ability to compete, or a better service for clients and customers (Iacovou et al. 1995; Rajaguru and Matanda 2009). As a result, the application of interorganizational IT, such as electronic data interchange, knowledge sharing systems or supply chain management systems, has become widespread across most industries (Zhu et al. 2006b). According to Shook et al. (2002), these systems have also the potential to dramatically change how wood and wood-based products are marketed and exchanged between partnering organizations. However, despite the potential benefits, organizations in the wood industry display a surprisingly cautious attitude towards IT adoption. As a result, the sector exhibits a low degree of diffusion of both organizational as well as interorganizational IT (Hewitt et al. 2011). Insights from previous studies on IT adoption cannot directly be transferred to this context, as the wood industry differs from other sectors

in a number of ways, such as industry structure, organizational culture, or products and processes (Appelhanz 2013; Kies et al. 2010; Mrosek et al. 2005). These issues lead to the following research question:

2) Which sector-specific characteristics shape the adoption of interorganizational IT in the wood industry and how can the diffusion be promoted?

The mere adoption of IT, or investments in IT resources, such as software, hardware or IT human resources, do not lead to an enhanced performance or productivity per se (Prasad et al. 2013; Rajaguru and Matanda 2013; Sanders 2007). Instead, organizations have to develop capabilities for implementing and using IT resources in combination with other organizational resources, in order to derive value from IT investments (Ray et al. 2005; Wade and Hulland 2004). While much effort has been invested in order to investigate IT value from the perspective of a single firm, less is known about how networks of organizations can benefit from investments in IT (Kohli and Grover 2008; Saraf et al. 2007). As Grover and Kohli (2012) point out, "We need to understand how IT-based value is co-created and shared among multiple partners in multi-organizational relationships". However, the sources of value from IT in the context of interorganizational relationships differ from those of a single firm (Saraf et al. 2007). In addition, and in contrast to the perspective of a single organization, networks of organizations are more complex as they consist of a variety of external and largely autonomous entities that differ in terms of their operating environment, culture, social capitals, and goals (Camarinha-Matos et al. 2009). In order to handle these complexities, specific interorganizational capabilities, which are influenced by several external factors, are needed (Melville et al. 2004). Consequently, the following research question arises:

3) How does the usage of interorganizational IT lead to value and how is it influenced by sector-specific characteristics?

1.3 Structure of the Thesis

The dissertation is of cumulative nature and consists of five parts (see Figure A-3 on page 11). While the first and the last sections (Parts A and E) frame and synthesize the thesis with regard to the usage of interorganizational IT in the wood industry, the middle parts (Parts B, C, and D) represent the body of the thesis and cover nine interrelated studies. Each part focuses on one of the three guiding research questions presented in Section 1.2. While all studies address the general topics of collaboration in networks or interorganizational information systems, not all of them have been conducted in the context of the wood industry. Nevertheless, each study offers

valuable insights to certain aspects of the research questions defined above and also provides implications for organizations of the wood industry. Each of the studies included in this cumulative dissertation has been published as a completed research paper in leading and VHB-ranked IS conference proceedings or Journals (see Table A-1).

Part A (Foundations) deals with the underlying motivation of the thesis and then presents the central and guiding research questions. Subsequently, the research context and the research design as well as the anticipated contributions are outlined. The next subsection provides background on the unit of analysis. Consequently, an overview of the German wood industry and the role of interorganizational networks is given. Furthermore, existing solutions of interorganizational IT support for organizations in the wood industry are reviewed. The last subsection sets this research in the theoretical context of related IS research on IT adoption and IT value.

Parts B, C, and D represent the main body of this cumulative thesis and include nine studies (published in eight different essays) in total. **Part B** (Exploring the Domain) focuses on the first research question and deals with aspects of network formation and operation as well as with associated industry-specific characteristics. As a result, Part B sheds light on the domain from different perspectives: The first study (#1) provides an overview of existing literature on IT-enabled collaboration in the context of interorganizational networks in general. The second study (#2), then examines drivers of interorganizational networks in the wood industry in particular. Lastly, the third study (#3) of Part B identifies industry-specific characteristics that are related to the usage of interorganizational information systems in the wood industry.

Part C (Studies on Interorganizational IT Adoption) comprises of three different studies and focuses on the adoption of interorganizational information systems. Hence, insights from this part mainly contribute to answering the second research question. The first study (#4) of this part continues from the last study of Part B and elaborates and tests an industry-specific IS adoption model in order to explain the low rates of IS diffusion. The second study (#5) examines the predictive power of different IS adoption models in the context of the wood industry and provides recommendations for base model choices. Finally, while the prior studies focus on organizational adoption variables, the last study (#6), takes a socio-technical perspective and concentrates on the role of trust in the acceptance (i.e., post-adoption usage) of interorganizational IS in networks.

Part D (Studies on Interorganizational IT Value) deals with the creation of interorganizational IT value and thus mainly provides answers to Research Question 3. This part comprises three studies that deal with different aspects of the generation of interorganizational IT value. The

first study (#7) contributes to the understanding of how interorganizational networks in general can effectively manage IT integration in order to create value. Building upon this, the second study (#8) examines the role of collaborative network structures in the wood industry and how this is related to superior supply chain performance. Lastly, the third study (#9) of part D provides insights into the contextual conditions under which interorganizational IS create value for organizations in the wood industry.

Part E (Contributions) closes the thesis. It reflects and synthesizes the findings from the different studies with regard to interorganizational networks in the wood industry. Subsequently, contributions to research as well as implications for policy making and practice are given. Lastly, the limitations of this thesis are outlined and future research directions are derived.

Table A-1. Overview of studies included in the thesis

No.	Outlet	Ranking	Section	Core research question
#1	Hawaii Conference on System Sciences 2015	C	B.1	To what extent has the body of literature already explored IT-enabled collaboration in the context of interorganizational networks?
#2	Journal of Cleaner Production	B	B.2	What are the main drivers for the emergence of interorganizational networks in the wood industry?
#3	Pacific Asia Conference on Information Systems 2015	C	B.3	Which IT-related and sector-specific characteristics of the wood industry can be identified?
#4	Pacific Asia Conference on Information Systems 2015	C	C.1	Which sector-specific characteristics affect the adoption of interorganizational IS in the wood industry?
#5	International Conference on Information Systems 2014	A	C.2	Which theoretical lens should be applied for studying interorganizational IT adoption in the wood industry?
#6	Pacific Asia Conference on Information Systems 2014	C	C.3	What is the role of trust in the acceptance (post adoption usage) of interorganizational IS in networks?
#7	Americas Conference on Information Systems 2015	D	D.1	What are the network characteristics that facilitate the development of IT integration to enhance IT value in interorganizational networks?
#8	Americas Conference on Information Systems 2016	D	D.2	How do collaborative network structures influence IT integration and supply chain performance of organizations in the wood industry?
#9	European Conference on Information Systems 2016	B	D.3	Which contextual factors affect the creation of IT value in the wood industry?

Note: The ranking is based on the VHB Jourqual 3 ranking. Study B.3 and Study C.1 have been published together in a single mixed-method paper.

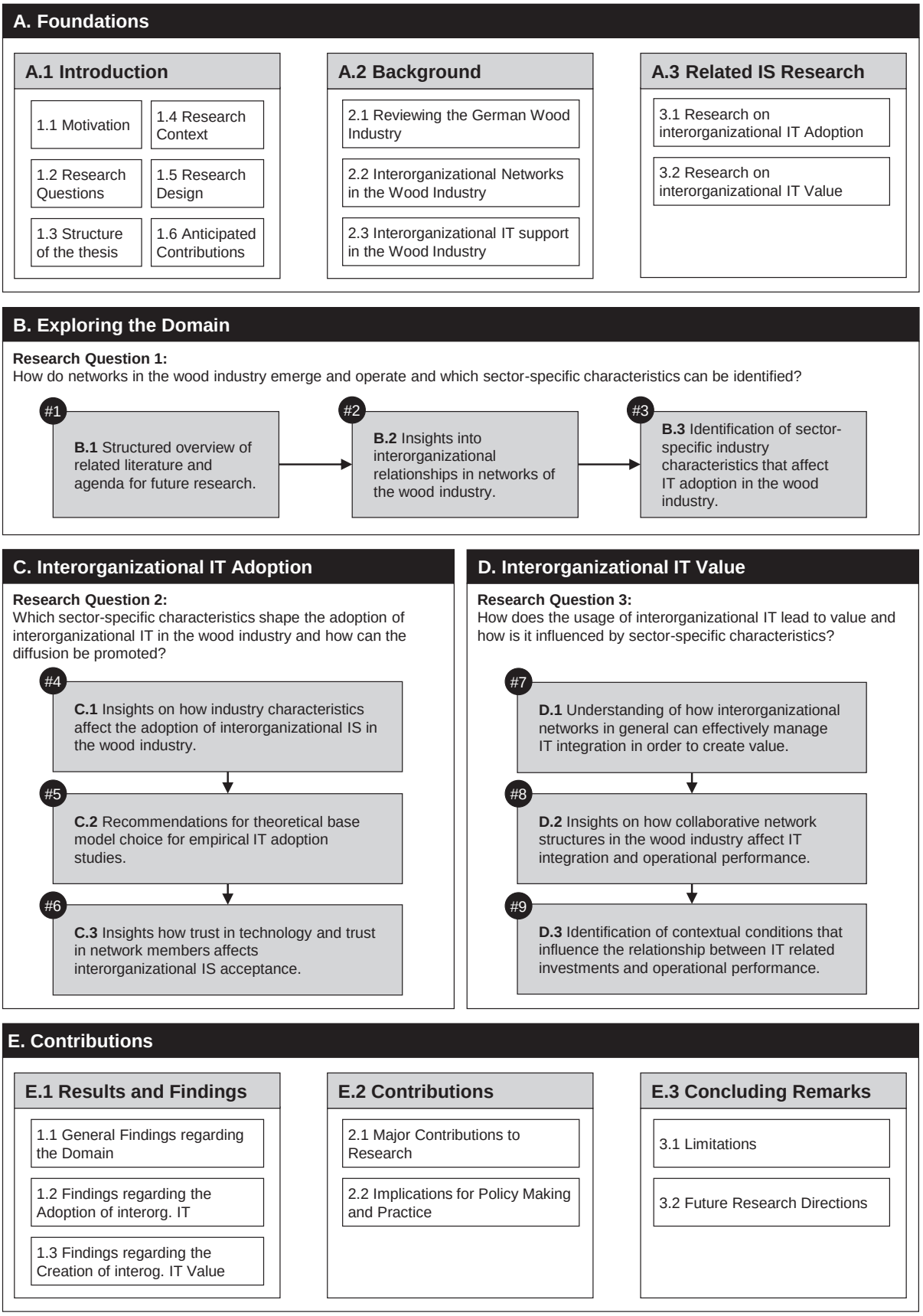

Figure A-3. Overview of the structure of the thesis

1.4 Research Context

The research included in this thesis has been conducted in the context of the Research Training Group (RTG) 1703 *Resource Efficiency in Interorganizational Networks*[1]. As a consequence, the aims and results are embedded in the overall theme of the RTG, which is the identification and improvement of methods, processes and technologies that contribute to the resource-efficient usage of renewable resources in interorganizational networks. This aim calls for a holistic optimization across the entire network of utilization and involves multiple actors along the supply chain that are linked - in both forward and reverse directions - through their common resource. As a result, the RTG integrates research from different perspectives, including material sciences, marketing, operations research, and information systems discipline. This interdisciplinary approach reflects in the structure of the RTG 1703 (see Figure A-4), which is divided into three different topical groups, namely *Material Sciences* (Topical Group A), *Operative Planning* (Topical Group B), and *Governance* (Topical Group C).

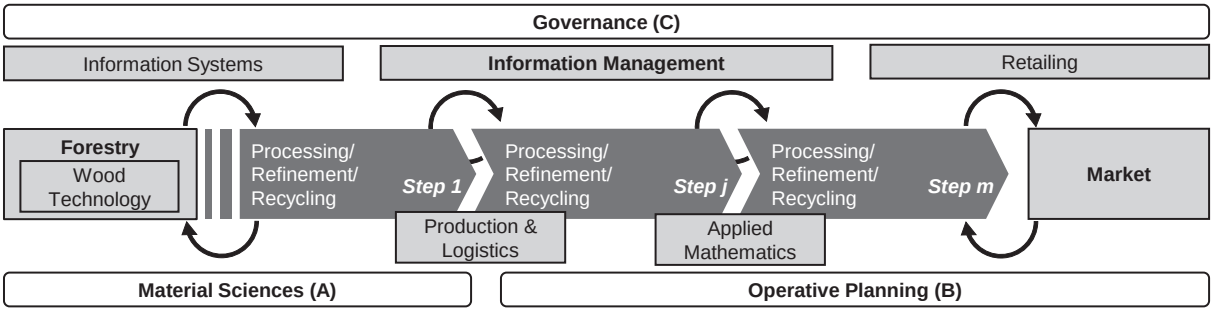

Figure A-4. Structure of the RTG 1703

Topical Group A deals with the optimization of processes and products for wood-based materials. It focuses on industrial production processes in the wood and wood-based industry, including both technological processes as well as chemical modifications for the development of new and innovative products. On the contrary, **Topical Group B** encompasses research on the planning of production and supply chains for renewable resources. It primarily deals with the application and improvement of methods and models for multi-criteria optimization as well as with the investigation of efficient logistics systems and planning algorithms. This cumulative thesis, with its focus on the application and its repercussions of interorganizational IT, relates to **Topical Group C**, which deals with governance-, coordination-, and distribution-related issues of networks from the perspectives of marketing and information management.

[1] The RTG 1703 has been funded by the DFG (Deutsche Forschungsgemeinschaft) from 2012 to 2016.

However, the multifaceted aspects of IT related issues with regard to resource-efficient processes are closely linked to other research endeavors from the fields of Material Sciences and Operative Planning. For example, interorganizational IT is a prerequisite for the provision of accurate real time data, which is an imperative for operative planning. In addition, material scientists can profit from insights on network structures and patterns of collaboration and communication for examining material flows and designing production and processing mechanisms for wood-based products and by-products.

1.5 Research Design

Compared to many other disciplines in business and social sciences, information systems research (ISR) is a relatively young and still emerging discipline. At the same time, ISR is unique in many aspects (Gregor 2006). On the one hand, it is capable of benefiting and borrowing from well-known and established theories and research approaches of other disciplines (Straub 2012; Wilde and Hess 2007). On the other hand, Information Technology – the primary driver of ISR – continues to develop rapidly and researchers are barely able to keep in step. As a result, ISR is an interdisciplinary field that encompasses a variety of different research paradigms, philosophies, designs, and methods (Palvia et al. 2003).

Since ISR strives to generate and disseminate knowledge based on the interaction between people, organizations, and technology, it can be attributed to social science (Bhattacherjee 2012). Two complementary but distinct research paradigms typically characterize most research in the Information Systems discipline, namely, behavioral science and design science. The design science paradigm has its roots in engineering and is fundamentally problem solving oriented. It aims to extend the boundaries of human and organizational capabilities by creating new and innovative artifacts, which can be easily transferred from science to practice (Hevner et al. 2004; Wieringa 2010). However, such artifacts rely heavily on existing theories that have been applied, tested, modified, and extended, which is part of the complementary behavioral science paradigm. The behavioral science paradigm has its roots in natural sciences. In contrast to the design science paradigm, it aims to develop and justify theories in order to explain or predict organizational and human behavior surrounding the management and use of information systems and information technology. Hence, it enables researchers and practitioners to achieve the stated purpose of information systems, namely, improving the effectiveness and efficiency of organizations (Hevner and Chatterjee 2010; Hevner et al. 2004). Consequently, as this thesis is dedicated to contribute to the understating of different aspects and circumstances surrounding

the adoption and value of interorganizational IT, it primarily follows the behavioral-oriented paradigm. However, by examining the causal mechanisms, it serves as the foundation for future design-oriented research in this domain.

All research is based on some underlying assumptions about knowledge and how it can be obtained. Since these assumptions influence the choice of appropriate research methods, it is important to know what these assumptions are (Myers 1997). From an epistemological perspective, three general different ideal types of positioning can be differentiated in IS research: positivist research, interpretive research, and critical research (Gregor 2006; Orlikowski and Baroudi 1991). The positivistic approach assumes that the reality is objectively and externally given and can be described by properties that are independent from the researcher. As a result, positivist research typically develops and tests theories by drawing on formal propositions or quantifiable measures in order to increase the understanding of a certain phenomenon and to generalize from the estimated sample to a stated population. In contrast to the positivistic approach, interpretive research assumes that access to reality is only possible through social constructs, such as language, consciousness, or shared meanings. Interpretive studies typically strive to understand the mutual relationships between a context and a phenomenon. As a result, interpretive research does not predefine dependent or independent variables. Instead, it focuses on the complexity of human sense making and emphasizes the importance of subjective meanings in the context of an emerging situation (Myers 1997; Orlikowski and Baroudi 1991). Lastly, the critical research philosophy assumes that reality is historically constituted and hence, that it is produced and reproduced by people. Critical research focuses on oppositions, conflicts, and contradictions. As a result, the main objective of critical research is social critique. Therefore it aims to create an awareness and understanding of various forms of social domination in order to provide guidance on how to avoid and eliminate restrictive and alienating conditions (Myers 1997; Orlikowski and Baroudi 1991). As this thesis strives to offer objective and neutral insights to provide guidance for future research and decision makers, it takes an observer-like position. As a result, it assumes a reality that is externally given. Accordingly, all studies take a positivistic research stance.

Both the underlying research paradigm and the epistemological positioning described above influence the choice of research methodology. As this thesis is assigned to both positivistic and behavioral science oriented research, it displays a combination of qualitative and quantitative research methodologies (mixed-method research design) from the field of social sciences. This diversity in research methods is considered a major strength of IS research, as it enables the

development of rich insights into the phenomenon of interest (Lee 1999; Venkatesh et al. 2013). Table A-2 provides an overview of the research design and the theoretical foundations for the studies included in this thesis.

Table A-2. Overview of research design and theoretical foundation of studies included in the thesis

No.	Core research question	Paradigm	Data collection	Data analysis	Theoretical foundation
#1	To what extent has the body of literature already explored IT-enabled collaboration in the context of interorganizational networks?	Design oriented / behavior oriented	Structured literature review *(N=31)*	Deductive reasoning, concept matrix	Classification of interorganizational networks
#2	What are the main drivers for the emergence of interorganizational networks in the wood industry?	Behavior oriented	Multiple case study *(N=5)**	Exploratory interview, secondary data analysis	Transaction cost economics, Resource-based view, Relational view, Learning theory, Institutional theory
#3	Which IT-related and sector-specific characteristics of the wood industry can be identified?	Behavior oriented	Multiple case study *(N=12)**	Exploratory interview, secondary data analysis	Three interrelated viewpoints of interorganizational IS
#4	Which sector-specific characteristics affect the adoption of interorganizational IS in the wood industry?	Behavior oriented	Cross-sectional survey *(N=204)**	structural equation modeling	Technology-organization-environment framework, Task-technology fit model, Unified theory of acceptance and use of technology
#5	Which theoretical lens should be applied for studying interorganizational IT adoption in the wood industry?	Behavior oriented	Cross-sectional survey *(N=204)**	Structural equation modeling, predictive power analysis	Technology-organization-environment model
#6	What is the role of trust in the acceptance (post adoption usage) of interorganizational IS in networks?	Behavior oriented	Cross-sectional survey *(N=121)*	Structural equation modeling	Theory of reasoned action, Technology acceptance model, Socio-technical Theory
#7	What are the network characteristics that facilitate the development of IT integration to enhance IT value in interorganizational networks?	Behavior oriented	Cross-sectional survey *(N=228)*	Structural equation modeling	Commitment-trust theory, Resource-based view
#8	How do collaborative network structures influence IT integration and supply chain performance of organizations in the wood industry?	Behavior oriented	Cross-sectional survey *(N=150)**	Structural equation modeling	Relational view, Resource-based view
#9	Which contextual factors affect the creation of IT value in the wood industry?	Behavior oriented	Cross-sectional survey *(N=150)**	Structural equation modeling	Organizational information processing theory

*Note: * Indicates that the study has been conducted within the context of organizations in the wood industry.*

1.6 Anticipated Contributions

The thesis covers aspects of interorganizational IT adoption and interorganizational IT value within the context of networked organizations in the wood industry. With a particular focus on the contingent role of sector-specific characteristics, it aims to provide insights into the circumstances that facilitate the adoption of interorganizational IT. Furthermore, it strives to explore the causal mechanism under which IT contributes to the creation of value. As a result, the thesis findings are directed to several audiences in both research and practice (see Table A-3).

Since behavioral research in the information systems discipline has often been criticized for a lack of practical relevance (e.g., Gill and Bhattacherjee 2009; Gregor and Hevner 2013), the thesis particularly strives to develop concrete implications for policy making and practice.

First, the thesis aims to provide recommendations for decision makers of organizations in the wood industry. Hence, it strives to offer insights into the circumstances affecting the adoption of IT and seeks to explore validated factors that influence IT adoption decisions. The results contribute to the understanding of the low degree of IT adoption in the wood industry and enable the identification of potentials and measures for overcoming adoption barriers. Practical and applicable suggestions, derived from scientifically validated tools and measures, should be given in order to equip managers with a solid knowledge on issues surrounding the application of IT and to guide future adoption decisions.

In addition, the thesis also seeks to generate implications for the integration of interorganizational IT in the context of organizations in the wood industry. The aim is to explore facilitating conditions of the effective integration of boundary-spanning IT resources and capabilities. Therefore, the thesis focuses on network-related characteristics as important antecedents of the successful integration of boundary-spanning IT. Recommendations for network managers on how to design and steer relationships with collaborating organizations will be derived in order to enhance the value of interorganizational IT resources. In addition, the thesis also reflects upon the contextual conditions under which IT creates value for partnering organizations and provides implications with regard to certain product- and process characteristics.

Given the high and rising importance of the wood industry with regard to both economical as well as ecological factors, it is an imperative to provide recommendations for public and governmental actions. Consequently, for policy making, the thesis seeks to provide implications that are designed along the unique characteristics of the wood industry. It strives to generate insights that can guide future decision-making processes with regard to the design of facilitating