Deriving a Process for Interorganizational Business Capability Modeling through Case Study Analysis

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Abstract: To stay competitive in a globalized, constantly changing market environment with ongoing technological advancements, companies are not only focusing on their organization's key capabilities but also collaborate more closely with partners, suppliers, customers, and also competitors. By analyzing an enterprise's business capabilities, business leaders get an abstracted, holistic view of the organization and the alignment of its business model and visions with the IT. Further, business capabilities and visualizations can help to improve the communication with business partners. Therefore, different companies operating in the same industry collaboratively identify and model common business capabilities to define a shared ontology. Based on the knowledge gained through literature review carried out on the topic of business capability modeling, we conducted a multiple case study in this field. As a result, we derived a reference process for interorganizational business capability modeling which we evaluated by conducting semi-structured interviews with members of different interorganizational initiatives. The outcome of our research is an iterative process of modeling business capabilities in interorganizational collaborations.

1 INTRODUCTION

For decades, companies work together due to many benefits for the collaborating organizations (Diirr and Cappelli, 2018). This becomes especially important as enterprises and their IT landscapes become more and more interconnected (Drews and Schirmer, 2014). To manage the rising complexity of business processes and IT components communicating across the enterprise's boundaries, the concept of interorganizational Enterprise Architecture Management (EAM) has gained interest from the industry and science (Yilmaz et al., 2020).

According to Moore, companies are shifting to collaborate not only with their suppliers and customers but also with their competitors working in the same industry (Moore, 1996). Since these companies often have similar capabilities, it appears natural to collaborate in modeling these capabilities. The design and model of business capabilities supports the alignment of business and IT as it allows an abstracted and holistic view of an organization's abilities and its components (Ulrich and Rosen, 2011). The way a single company can identify, and design its capabilities was subject to an increasing amount of research (Brits et al., 2007). But despite the shift to cooperating business ecosystems and interorganizational collaborations, the process of developing and modeling business capabilities involving multiple companies is barely studied and might vary widely from the one in a single company. With this background, we identified the following research questions (RQ):

RQ 1: How do companies from the same industry proceed in modeling common business capabilities?

RQ 2: How does the interorganizational business capability modeling process differ from the modeling process of a single organization?

To answer the first research question, a literature review according to Webster and Watson was conducted (Webster and Watson, 2002). The relevant literature provided a basis for the analysis of documents and protocols and conducting semi-structured interviews following the guidelines for multiple case study (Runeson and Höst, 2009; Yin, 2017). We evaluated the developed draft process by conducting interviews with experts involved in interorganizational business capability modeling initiatives. The findings are eventually compared to the literature-based approaches of modeling business capabilities in a single company to find differences as well as similarities.

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2 RELATED WORK

Before identifying steps of interorganizational business capability modeling, we conducted a literature review to find relevant publications about the modeling steps of business capabilities within a single and multiple organizations (Table 1).

Brits et al. (2007) propose a conceptual framework for modeling business capabilities, where an organization first needs to extract its "critical information", including "Business Entities", "Business Rules", "Business Processes" and "Strategic Artifacts". In this framework, people are not part of resources but a separate component.

España et al. (2015) propose strategies for modeling business capabilities based on the capability-driven design. All strategies consist of three steps: "Capability Design", "Capability Evaluation", and "Capability Delivery", with the research focus lying on the design. Regardless of which starting point for capability design is taken, an iterative structure is proposed involving the business goals, processes, and eventually the context affecting the capabilities (España et al., 2015).

Zdravkovic et al. (2013) conducted research on capability modeling and delivery using cloud services. It is based on a meta-model for capability-driven development (Stirna et al., 2012). The design, which is, next to the delivery, one of the two perspectives in capability-driven development, starts with modeling the enterprise. The Capability-Driven Design and Development (CDD), which is the underlying methodology in the research of España (2015), Zdravkovic (2013), and Stirna (2012), involves enterprise models, goals, processes, the underlying resources, as well as concepts. It also considers the application context in delivering the capabilities to allow a fast reaction to changes (Zdravkovic et al., 2013; Stirna et al., 2012).

Bondel et al. (2018) report from the modeling of a business capability map (BCM) based on a case study. The desired goal was the improvement of business/IT alignment through the application of the BCM (Bondel et al., 2018). A guideline for BCM creation by The Open Group was used as a basis for their approach (TheOpenGroup, 2018). The case study started with the identification and modeling of more general, top-level capabilities first.

Overall, these papers granted us profound knowledge about the modeling steps of business capabilities in a single organization, including the role of the involved components. We further conducted a literate review on interorganizational business capability modeling initiatives, methods and strategies. Due to the novelty of the topic, we were not surprised to only find a handful of papers that mention business capabilities in an interorganizational context.

Table 1: Steps of BCM Modeling in Single Organization.

Step	Authors
Use draft capability model	Brits et al. (2007), Zdravkovic et al.(2013), Bondel et al. (2018)
Analyze business processes & functions	Brits et al. (2007), España et al.(2015), Zdravkovic et al. (2013)
Analyze visions & goals	Brits et al. (2007), España et al.(2015), Zdravkovic et al. (2013)
Include resources	Brits et al. (2007), Zdravkovic et al. (2013), Bondel et al. (2018)
Include responsibilities & roles	Brits et al. (2007), Bondel et al. (2018)
Relations between business capabilities	Brits et al. (2007), España et al.(2015), Zdravkovic et al. (2013), Bondel et al. (2018)
Define KPIs	España et al.(2015), Zdravkovic et al. (2013)
Analyze application context	España et al.(2015), Zdravkovic et al. (2013)
Create BCM	Bondel et al. (2018)
Evaluation and refinement	Brits et al. (2007), Bondel et al. (2018)

Bakhtiyari et al. (2015) introduce a capability-based approach for enterprise architecture in business network planning (Bakhtiyari et al., 2015). By using a BCM, the individual partners align their capabilities with the capabilities of a global capability map. This is used to map global capabilities to requirements and relations. However, a description for the creation of the global BCM itself is not presented.

Fleischer et al. (2007) use business capabilities to configure and evaluate value-added networks. This allows improved coordination of the single nodes inside the network (Fleischer et al., 2007). The result of their research is a process for configuring the value-added networks. A BCM is developed and used to map business capabilities to the nodes of the network and to compare the individual nodes' BCMs. This research does describe the identification and modeling of business capabilities in an interorganizational context, but the identified business capabilities are derived from the added value of a single company and include the outsourced capabilities of its partners and suppliers to configure the nodes in the network. In contrast, our research is focusing on the collaborative identification and modeling of common business capabilities by companies working in the same industry.

Overall, we did not find literature proposing a general process of defining business capabilities in interorganizational collaboration. Despite this result, the industry projects that are currently in progress underline the actual relevance of this topic.

3 CASE STUDY

The main objective of our research is the identification of general steps in the process of modeling business capabilities in interorganizational collaborations with companies from the same industry. In order to build profound knowledge in the area of business capability modeling, we first conducted the literature review as described in the previous section.

As our research uses different case studies as a basis for collecting information, we now want to present the case studies. In the first case study, the cooperating enterprises are public service media companies from one European country cooperating in a working group. The second case study consists of public service media companies from several European countries within a community of practice (Wenger et al., 2002). The documents and protocols provided by these case studies were analyzed to derive a draft process of collaborative business capability modeling.

To enrich and evaluate the findings, we conducted semi-structured interviews with case study partner 1, 3, and 4. Case study 3 is an interorganizational collaboration active in the gambling domain. The interviewee is a research assistant, who was responsible for planning, consulting, and implementing the project. The fourth case study was carried out with an association of organizations operating in the finance industry. The interviewees were enterprise architects and project leaders of involved companies. Their motivation for collaboration was to provide industry-specific enterprise architecture artifacts, which are not only limited to a BCM. A summary of involved organizations can be seen in Table 2, whereas our case study design is illustrated in Figure 1.

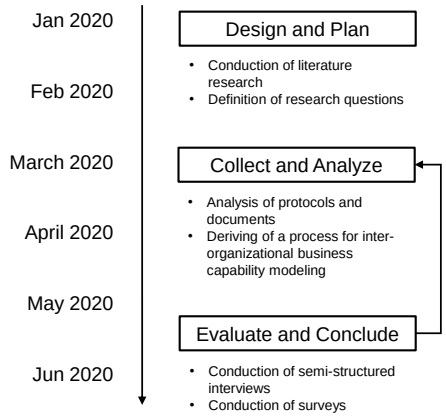

Figure 1: Study Design acc. Runeson and Höst (2009).

4 RESULTS

4.1 Reasons and Expectations

Before deriving the process of modeling business capabilities in an interorganizational collaboration, the individual reasons of the case studies' members for participating in the collaborative modeling activity need to be analyzed (Yilmaz et al., 2020). This provides a holistic view of the projects and allows to identify possible influencing factors.

The reason for the first case study is to provide a basis for mapping their application portfolio to the capabilities. This is then used to visualize which applications are used by the organizations in which group of capabilities, which organizations are similar or different in certain business capabilities with regard to their application landscape, as well as revealing the potential for standards and consolidation. The second case study's aim is to establish an industry-specific reference model of a BCM and exchange knowledge and experience. In the third case study, the involved companies want to identify and visualize similar and overlapping capabilities to reveal the potential for synergies, merging, and acquisitions, and create a common understanding and taxonomy. The fourth case study justified the collaborative modeling of capabilities with the creation of a reference model to be used by organizations operating in the same industry.

4.2 Structure of the Meetings

The first case study's modeling team consisted of the heads of departments in IT and EA, project leaders of IT- and EA projects, and enterprise architects. By involving project leaders and heads of departments, the companies ensure that employees with fundamental knowledge about their own company's business architecture can represent the enterprise appropriately as well as guarantee high quality of the result. Additionally, each member had to name a stand-in, who was continuously kept up-to-date. Still, internal presentations and discussions with business leaders and executives as stakeholders of the project were performed in order to collect feedback and impressions from a business point of view. This was observed in the second

Table 2: Case Study Partners.

	Case Study Partner 1	**Case Study Partner 2**	**Case Study Partner 3**	**Case Study Partner 4**
Industry	Broadcasting	Broadcasting	Gambling	Banking and Finance
Source of Information	Documents, protocols and semi-structured interview	Documents and protocols	Semi-structured interview	Semi-structured interview
Collaboration Form	Working group	Community of practice	Working group	Community of practice
Collaboration Goal	Basis for further collaboration	Reference architecture	Identify synergies and create taxonomy	Reference architecture
No. companies involved	13	4	10	>30
Meeting Structure	Physical	Virtual and physical	Physical	Virtual

and fourth case study as well, where the relevance of getting a cross-section of stakeholders, especially but not only from the business side, was pointed out. The meetings in the first case study were physical as all member organizations operated in the same country and should take place every quarter with extra meetings arranged when needed. In between the meetings, feedback was collected inside each company by the corresponding team members and presented in the next meeting.

The second case study's modeling team consisted of enterprise architects working in each of the participating organizations. The meetings were scheduled every two weeks and were mostly virtual due to the international scope of the project. Additionally, the team conducted a physical workshop in the last third of the project. In the meetings, the members provided feedback regarding the current work results, gained from internal discussions in their organization, which was then revised by the members responsible for this deliverable.

With the third case study project being solely driven by strategic goals, namely the revealing of potential for synergy and acquisitions, the people involved in capability modeling were mostly business leaders and heads of departments. This also illustrates the relevance of business capabilities for the business perspective. It stands out that in the third case study the interviewee, a research assistant acting as an enterprise architect, was coordinating and leading the project because most of the participants were new to the field of business capabilities or enterprise architecture itself. Here, the participants delivered ideas, information, and held discussions which were collected by the enterprise architect, accumulated and evaluated through several interviews and presentations.

The modeling team of the fourth case study consisted of enterprise architects and project managers.

In the first case study we could observe an assignment of responsibilities and tasks to subgroups. The allocation of roles and responsibilities was performed by the members of the second case study as well. Here, certain members were responsible for collecting and implementing the feedback provided by the individual members and their stakeholders. Noteworthy is the allocation of a coordinating role in case study 1, 2, and 3. Appointing a moderator to coordinate the meetings as well as to collect and distribute feedback and tasks is supporting a clear structure of the meetings and serves as a contact person. The forming of subgroups as in case studies 1 and 2 to collaborate on specific topics was not confirmed by case studies 3 and 4. Analyzing the first two case studies, we could identify a disagreement in the form and relevance of the venue. This was confirmed by case studies 3 and 4, as the meetings of case study 3 were physical interviews and workshops, whereas the members of the fourth group only had virtual meetings.

4.3 Collaborative Modeling of Business Capabilities

Each case study used a **draft business capability model** or business capability framework to get a better understanding of the desired outcome, to use it as a guideline, or as a foundation for their own modeling. The draft capability model can be provided by one of the members or obtained from external sources. In the second case study enterprise architects decided to use an external BCM to identify the appropriate level of abstraction and used it as a basis for the development of the own capability map. In addition to that, case study 2 and also case studies 3 and 4 used existing BCMs from some of the members, whereas in case study 1, a capability map from a company oper-

ating in the same industry, yet not participating in the project was used as a draft. As in case study 4, the BCMs which were brought in by members worked as a foundation first, but due to overlapping, duplication, and the lack of following any particular standard, it was decided to start from scratch, without using any draft in order not to be biased. Using existing BCMs from members or external sources provides a basic understanding for the stakeholders and also for the development team. In addition to that, it can be used as the starting point for identifying business capabilities and creating the BCM as it was done in case studies 2 and 4.

All projects started with the modeling of **general business capabilities** before adding granularity by modeling lower-level capabilities. This might be caused by the usage of draft models and frameworks that usually present a general, industry-independent high-level architecture of an enterprise. It also makes sense in the context of collaboration, as in a conglomerate of enterprises it may be easier to find common top-level capabilities, which can then be used as the basis for further decomposition if needed, than finding consensus for specific low-level capabilities. Additionally, as case studies 2 and 4 had the aim of building an industry-specific reference architecture, the needed degree of granularity was not as high as one might expect in a single company where the BCM is used for further, profound analysis. This was confirmed by the interviewees. The fear of revealing valuable insights and therefore potentially losing an advantage over the other members, which are still operating in the same industry, by modeling more specific, lower-level capabilities was not found to be a reason for starting with top-level capabilities. Business capabilities themselves abstract from the underlying technologies and processes and hence would not reveal many details. According to the interviewees, in case of different views on the desired modeling level of capabilities by the member organizations, discussions were held until a general agreement was achieved. In case study 3, the modeling group was working with a BCM from one of the members as a foundation. This map was extended in the interorganizational BCM creation by coloring the newly added capabilities. This helped to reach a consensus regarding the new capability map. Potential member-exclusive capabilities were not found to be problematic while modeling the capabilities and the creation of the BCM. The case studies introduced up to six categories to group the business capabilities. However, it was stated that grouping was not of great significance but only improves orientation in the BCM. Case studies 2 and 4 explicitly allow the enterprise-specific re-grouping of their grouping proposal. Examples for categories occurring in the capability maps are ”Core”, ”Strategic”, and ”Support” capabilities, which is also proposed by TOGAF (TheOpenGroup, 2018).

Modeling of business capabilities within a single enterprise can be based on the company's **business processes** (España et al., 2015; Brits et al., 2007; Zdravkovic et al., 2013). In case study 1, the underlying business processes of the different organizations were analyzed through the business process chains and used for identifying the business capabilities but were not modeled with them. During the evaluation through interviews, it was pointed out that the business processes and the internal structure of the organizations were too different to be embedded in the capabilities. Case studies 2, 3, and 4 did not involve the business processes. Case study 3 analyzed the business functions in order to identify the business capabilities. Additionally, organization charts were analyzed. Even though business processes can be helpful to identify or evaluate business capabilities, strict adherence to business processes in modeling the capabilities led to problems in the further progress of the project, as the developed BCM closely resembled a process map and caused the need for renewed discussion and revision.

The company's **vision and goals** can play a major role in defining the business capabilities within a single company (España et al., 2015; Brits et al., 2007; Zdravkovic et al., 2013). However, in all of the case studies, the companies' vision and goals were not analyzed in the modeling process. The obtained BCMs were throughout visualizing the current business capabilities and did not include a to-be view. Therefore, a company's goals and visions could be affecting the final usage of the obtained BCM but did not affect the creation of it in an interorganizational approach.

In literature, **responsibilities and roles** are components of business capabilities (Brits et al., 2007; Bondel et al., 2018). In most of the case studies, roles and tasks were no components of the modeled capabilities. This seems natural in a conglomerate of various organizations, where different skills and tasks enable the capabilities, depending on each company. Only in case study 3, people responsible for the capability were included in the capability description. This was caused by the fact that the initiative used the BCM from one member not only as templates for orientation but extended them with the capabilities from other members. The other case studies did not include responsibilities.

The creation of a **common vocabulary** seems to be crucial as we observed a shared glossary in case

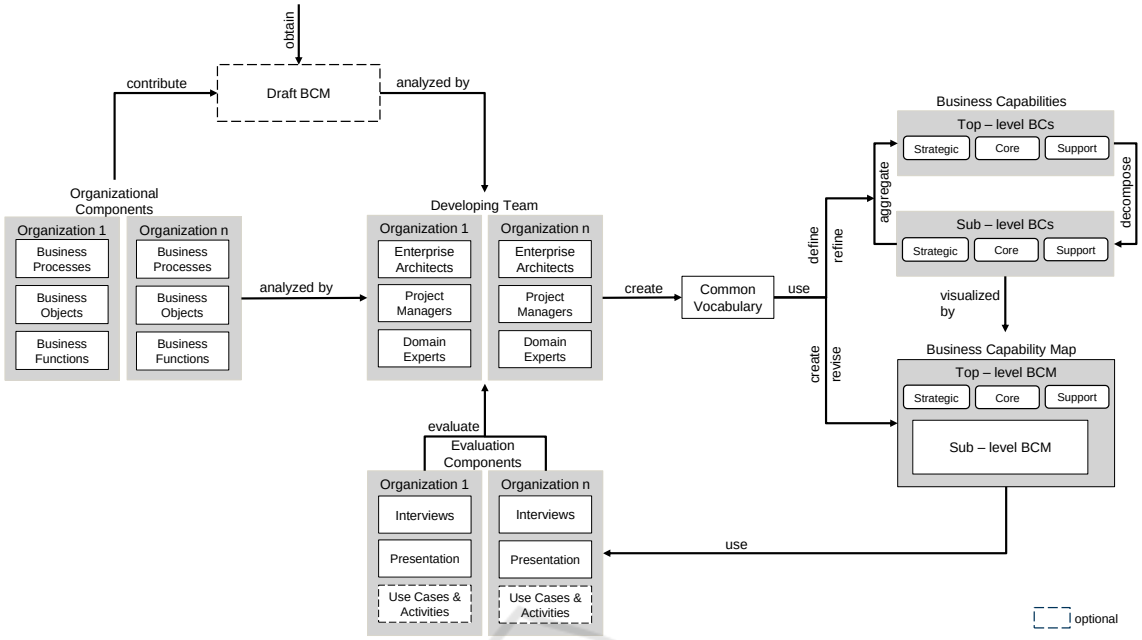

Figure 2: The derived reference process of interorganizational business capability modeling.

studies 2 and 4. Since these two groups contain organizations from different countries, they determined that the common language is English. In case study 4, the interviewees explicitly mentioned their focus on differentiating business capability names and names of the service domains. This is meant to prevent confusion within the member group. Case study 1 developed and introduced a glossary and naming convention to provide a common language and vocabulary in the first meetings. At the same time the finalized business capabilities were documented including a description, the outcome of the capability, and a reference to the position on the BCM. The descriptions introduced and followed this common vocabulary.

In general, the business capabilities modeled in the case studies did not embed **resources, applications or technologies**. Even if the organization's technologies play a negligible role, as the before mentioned internal structure and processes result in a variety of used technology. Only in the first case study, applications and technologies used by each member were collected, analyzed, and put in relation to the capabilities, which was caused by the additional collaboration target of building an application portfolio that should be mapped to the BCM. Nevertheless, the technologies were not modeled in the final description of the capabilities or in the BCM. In case study 4, it was pointed out that the technologies, roles, and business processes should not be modeled in the interorganizational BCM.

The identified business capabilities, their descriptions, sub-capabilities, and interrelations were **constantly evaluated**. This was done by presenting the BCM to the stakeholders of each company to collect feedback. But also use cases and activities were collected from organizations and used to validate the capabilities. In general, there was a high level of support and involvement of the business leaders and stakeholders from each contributing organization. The evaluation resulted in changes of capability names, the further decomposition of a former top-level capability, or the aggregation of sub-level capabilities until consensus was reached. In case study 2, the group focused mainly on modeling one core capability at a time until all members agreed on the naming, description, and the sub-capabilities. As the point of view got extended and shifted, the name, description or the composition of sub-capabilities to core capabilities had to be revised and adjusted. This iterative process validated the final capabilities and guaranteed the fulfillment of each organizations' expectations.

Based on our observation in the case studies, we designed a reference model visualizing the steps and components of an interorganizational business capability modeling initiative (Figure 2). By following the guideline, organizations operating in the same industry can collaboratively develop a common BCM.

We suggest to begin with the developing team consisting of enterprise architects, domain experts, and department heads. The developing team can assign responsibilities, e.g., a moderator for the meetings or someone to incorporate the feedback. The

structure of meetings, and their regularity has to be set. The development and use of a common language and vocabulary are crucial and highly recommended. With a common glossary developed, the modeling team analyses the organizations' charts, business processes, business objects, and business functions to identify common top-level capabilities. Identified business capabilities do not embed the underlying business processes, people, and roles as it might not be useful or even possible with multiple organizations involved. Further, the mapping of the underlying technology and application is optional. The identification and modeling can be supported by the usage of a draft business capability model. A draft BCM can also introduce stakeholders or members of the modeling team, who may be unfamiliar with the concept of business capabilities and illustrate the desired outcome. Our approach recommends the top-down approach, due to the background of the interorganizational context. The identified top-level capabilities should be extended with a description using the common vocabulary and be illustrated in a BCM to visualize relations between the capabilities. The top-level capabilities can be grouped to facilitate the identification of relations between the capabilities and their role in the organizations. We suggest the grouping into three categories as proposed by The Open Group (2018) and Ulrich et al. (2011): Core capabilities, support capabilities, and strategic capabilities.

This first version of the BCM is presented in the individual organizations to stakeholders and domain experts to collect feedback and to evaluate the first version. With the feedback incorporated, the BCM can be adjusted. This is an iterative process involving constant feedback and evaluation from the stakeholders and revision by the developing team. If a bottom-up approach is chosen, the specific lower-level capabilities should be grouped and their relations illustrated, before evaluating them using the stakeholders' feedback. With many organizations involved, this can bear a challenge and is only recommended if necessary for the collaboration goal. Aggregating the low-level business capabilities to higher-level capabilities involves the agreement of the modeling team as well as consensus with the stakeholders. In general, aggregation of capabilities can result in changes of relations or the composition in other layers, therefore a holistic view, achieved through the BCM, is crucial. The BCM should allow adjustments during the modeling, e.g., decomposing former top-level capabilities and vice versa. The degree of granularity for each business capability depends on its intended purpose. If the aim is the identification of synergies and potentials for consolidations a high granularity is useful. If defining a holistic reference architecture the granularity can be lower. Members of the developing team can submit change requests for the BCM if necessary in the later stage.

5 DISCUSSION

In this paper, we introduced a reference process of interorganizational business capability modeling derived from multiple case studies, in order to answer our research questions defined in section 1.

We could observe different approaches of collaborative BCM development. First, we identified the relevance of draft BCMs either submitted by members or obtained from external sources. A common glossary is an integral part of the process and is created at the beginning of as well as applied and refined during the modeling process. The developing team consists of enterprise architects as well as domain experts and department heads. By analyzing the companies' organization charts, functions, processes, and objects the developing team can further identify and describe capabilities. The derived process is of iterative nature, where each participant collects feedback from its company and stakeholders, which is merged and used to revise the capabilities. Responsibilities should be allocated inside the developing team to provide structure and a clear contact persons. After coming to an agreement of a final BCM, the result is being evaluated by the members regularly in order to find any deviations or needs for changes in the BCM. Due to the stability in the nature of a BCM, major changes in the BCM were not expected and observed.

The modeling of business capabilities in collaboration was found to be less driven by the companies' vision and goals as in the single enterprise. Even though the involved companies' technologies are analyzed, they play a minor role and are not modeled within the capabilities. Roles should not be taken into account in collaborative projects. BCMs obtained through interorganizational collaboration are found to be less granular than in a single organization. The introduction of a common vocabulary is not necessarily needed in a single organization whereas it is an important component in the interorganizational approach. The top management and stakeholders are usually supporting interorganizational collaboration and provide valuable feedback, whereas this is not generally the case in a single organization with, e.g., capability modeling initiatives driven by the IT department. Further, we could not confirm the application of KPIs. The reason for this can be the early stage of BCM usage in most of the observed cases.

6 LIMITATION

As our findings are based on case studies, which generally have limitations such as validity, generalizability, and reliability (Runeson and Höst, 2009). We used several methods to cope with these limitations. To ensure construct validity the interviews were conducted with employees from different organizations with the necessary background. By conducting multiple case studies from various industries with different collaboration motivations and goals, the derived process can be applied to most interorganizational collaboration projects. Therefore, the generalizability aspect is addressed. The reliability aspect is ensured by traceable analysis and results. To fulfill this criterion, the interviews were following a previously defined guideline reviewed by a second researcher.

7 CONCLUSION

In this paper, we presented related work in the field of business capabilities in a single- and interorganizational context. As a foundation, we conducted a literature review to obtain profound knowledge about business capabilities and their modeling in single organizations as well as available frameworks. Through the analysis of four case studies, we identified the steps of interorganizational business capability modeling. By conducting interviews, we could iteratively evaluate and revise the derived steps. This resulted in the process of interorganizational business capability modeling for companies operating in the same industry as illustrated in Figure 2.

Based on our research, future studies could be conducted on the composition and size of the teams in up-scaled projects. More organizations and stakeholders involved in the modeling process can increase the complexity and communication effort in the developing team.

REFERENCES

Bakhtiyari, A. R., Barros, A., and Russell, N. (2015). Enterprise architecture for business network planning: A capability-based approach. In *International Conference on Advanced Information Systems Engineering*, pages 257–269. Springer.

Bondel, G., Faber, A., and Matthes, F. (2018). Reporting from the implementation of a business capability map as business-it alignment tool. In *2018 IEEE 22nd International Enterprise Distributed Object Computing Workshop (EDOCW)*, pages 125–134. IEEE.

Brits, J., Botha, G., and Herselman, M. (2007). Conceptual framework for modeling business capabilities. In *Proceedings of the Informing Science and IT Education Joint Conference*, pages 151–170.

Diirr, B. and Cappelli, C. (2018). A systematic literature review to understand cross-organizational relationship management and collaboration. In *Proceedings of the 51st Hawaii International Conference on System Sciences*.

Drews, P. and Schirmer, I. (2014). From enterprise architecture to business ecosystem architecture: Stages and challenges for extending architectures beyond organizational boundaries. In *2014 IEEE 18th International Enterprise Distributed Object Computing Conference Workshops and Demonstrations*, pages 13–22. IEEE.

España, S., Grabis, J., Henkel, M., Koç, H., Sandkuhl, K., Stirna, J., and Zdravkovic, J. (2015). Strategies for capability modelling: analysis based on initial experiences. In *International Conference on Advanced Information Systems Engineering*, pages 40–52. Springer.

Fleischer, J., Herm, M., and Ude, J. (2007). Business capabilities as configuration elements of value added networks. *Production Engineering*, 1(2):187–192.

Moore, J. . (1996). *The Death of Competition: Leadership and Strategy in the Age of Business Ecosystems.* HarperBusiness.

Runeson, P. and Höst, M. (2009). Guidelines for conducting and reporting case study research in software engineering. *Empirical software engineering*, 14(2):131.

Stirna, J., Grabis, J., Henkel, M., and Zdravkovic, J. (2012). Capability driven development–an approach to support evolving organizations. In *IFIP Working Conference on The Practice of Enterprise Modeling*, pages 117–131. Springer.

TheOpenGroup (2018). *The TOGAF Standard, Version 9.2*.

Ulrich, W. and Rosen, M. (2011). The business capability map: the" rosetta stone" of business. *IT Alignment Enterprise Architecture*, 14.

Webster, J. and Watson, R. T. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MIS quarterly*, pages xiii–xxiii.

Wenger, E., McDermott, R. A., and Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Harvard Business Press.

Yilmaz, F., Akdemir, D., and Matthes, F. (2020). Why would enterprise architects work together?-a multiple case study. In *Americas Conference on Information Systems (AMCIS), Virtual*.

Yin, R. K. (2017). *Case study research and applications: Design and methods*. Sage publications.

Zdravkovic, J., Stirna, J., Henkel, M., and Grabis, J. (2013). Modeling business capabilities and context dependent delivery by cloud services. In *International Conference on Advanced Information Systems Engineering*, pages 369–383. Springer.