

6-15-2020

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Recommended Citation

Kurnia, Sherah; Kotusev, Svyatoslav; and Dilnutt, Rod, "The Role of Engagement in Achieving Business-IT Alignment Through Practicing Enterprise Architecture" (2020). *Research-in-Progress Papers*. 4.
https://aisel.aisnet.org/ecis2020_rip/4

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THE ROLE OF ENGAGEMENT IN ACHIEVING BUSINESS-IT ALIGNMENT THROUGH PRACTICING ENTERPRISE ARCHITECTURE

Research in Progress

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Abstract

Business-IT alignment describes the consistency between the business strategy and processes and IT strategy and processes. Enterprise architecture (EA) is a collection of artifacts describing various aspects of an organization from an integrated business and IT perspective intended to facilitate information systems planning and improve business-IT alignment. Effective engagement between business and IT stakeholders has long been recognized as one of the major critical success factors of EA practice enabling the realization of business-IT alignment which in turn, contributes to higher organizational performance. However, the stakeholder engagement in EA practice received only limited attention in the literature and factors that facilitate or impede effective engagement are still unclear. To address this gap, this research-in-progress paper explores in detail how organizations enhance stakeholder engagement in EA practice to achieve business-IT alignment. Based on an ongoing in-depth case study, we construct a preliminary model to show how EA practice can facilitate engagement to achieve business-IT alignment. The model identifies enablers and barriers to stakeholder engagement in EA practice. Our findings contribute to the EA and alignment literature by clarifying various aspects of the relationship between practicing EA, engagement and alignment as well as by identifying relevant factors affecting stakeholder engagement.

Keywords: Business-IT Alignment, Enterprise Architecture (EA), Engagement, Success Factors, Problems, Case Study.

1 Introduction

Business-IT alignment represents the congruence between the business strategy, IT strategy, organizational infrastructure and processes, and IT infrastructure and processes (Avison et al., 2004, Henderson and Venkatraman, 1993). Business-IT alignment facilitates the realization of business value from IT and improves overall business performance (Tallon, 2011, Gerow et al., 2014).

Enterprise architecture (EA) is a collection of special documents, or EA artifacts, describing various aspects of an organization from an integrated business and IT perspective that intend to facilitate information systems planning (Kotusev, 2019, Niemi and Pekkola, 2017)¹. The practice of using EA

¹ The term “enterprise architecture” has no single commonly accepted definition (Schoenherr, 2008, Kotusev et al., 2015, Lapalme, 2012, Radeke, 2010, Simon et al., 2013) and Saint-Louis et al. (2019) identify 160 different definitions of this term used in literature. In this paper we adopt the definition of EA advocated by Kotusev (2019) and consistent with many earlier definitions of EA as a set of descriptive documents or plans (Niemi, 2007, Simon et al., 2013, Spewak and Hill, 1992, Zachman, 1997, FEA, 2001)

involves a complex mix of interrelated organizational processes leveraging EA artifacts to support decision-making (Ahlemann et al., 2012, Kotusev, 2018). Practicing EA is intended to help organizations improve business-IT alignment thereby contributing to overall organizational performance (Valorinta, 2011, Alaeddini et al., 2017).

However, the ability of organizations to achieve better business-IT alignment is largely determined by the quality of communication, mutual understanding and partnership, or simply engagement, between business and IT stakeholders (Luftman et al., 1999, Preston and Karahanna, 2009, Teo and Ang, 1999, Kotusev, 2020). Similarly, various EA studies have identified engagement as one of the most critical success factors of EA practice (van der Raadt et al., 2010, Verley, 2007) and the lack of engagement among the major obstacles to establishing a successful EA practice (Banaeianjahromi and Smolander, 2019, Lohe and Legner, 2014).

Despite its acknowledged role in enabling business-IT alignment, engagement has received limited attention in the literature and various engagement-related factors that facilitate alignment from practicing EA remain largely unclear. In order to address this gap, this research-in-progress study explores how organizations enhance the stakeholder engagement in EA practice to achieve business-IT alignment. Our research questions can be formulated as follows:

- RQ1: How do organizations enhance stakeholder engagement in EA practice?
- RQ2: What are key factors that enable and inhibit stakeholder engagement in EA practice?

This paper is structured as follows: the next section provides a brief review of previous related studies and is followed by a description of the research design. We then present and discuss our preliminary findings. Finally, we conclude the paper by outlining the next steps of our on-going research.

2 Literature Review

2.1 Business-IT Alignment and Enterprise Architecture

Business-IT alignment can be understood as the mutual consistency between the business strategy, IT strategy, organizational infrastructure and processes, and IT infrastructure and processes (Avison et al., 2004, Gerow et al., 2015, Coltman et al., 2015, Henderson and Venkatraman, 1993). Business-IT alignment increases financial business performance (Gerow et al., 2014, Gerow et al., 2015, Gerow et al., 2016) and overall organizational success (Chan et al., 1997, Cragg et al., 2002, Yayla and Hu, 2012, Chan et al., 2006, Luftman et al., 2017). Moreover, business-IT alignment also facilitates the realization of business value from IT (Tallon, 2007, Tallon, 2011), supports the use of IT resources for gaining competitive advantage (Kearns and Lederer, 2000), improves effectiveness of IT investments (Byrd et al., 2006) and organizational agility (Tallon and Pinsonneault, 2011). Furthermore, nowadays the alignment between business and IT gradually transforms into the inseparable fusion of business and IT (Haki et al., 2016, Bharadwaj et al., 2013, Drnevich and Croson, 2013).

EA describes various aspects of an organization from an integrated business and IT perspective. It is intended to bridge the communication gap between business and IT stakeholders, facilitate information systems planning thereby improving business-IT alignment (Kotusev, 2019, Niemi and Pekkola, 2017). The practice of using EA, or simply EA practice, represents a complex set of interrelated organizational processes leveraging EA artifacts to support decision-making and helping align business and IT activities (Ahlemann et al., 2012, Kotusev, 2017a, Kotusev, 2018).

Positive effects of EA practice for business-IT alignment in organizations are widely recognized in the EA literature (Gregor et al., 2007, Pereira and Sousa, 2005, Sidorova and Kappelman, 2011, Martin et al., 2009, Martin and Gregor, 2002). Rodrigues and Amaral (2013) identify business-IT alignment as the single most important value driver of EA. Furthermore, the existence of a statistically significant relationship between using EA and achieving better business-IT alignment has been confirmed by several survey-based studies (Valorinta, 2011, Alaeddini and Salekfard, 2013, Alaeddini et al., 2017).

2.2 Alignment, Enterprise Architecture and Engagement

The term “engagement” in the EA and alignment literature has no commonly accepted definition, conceptualization or operationalization and is used by different authors rather loosely as an umbrella term for referring to communication, collaboration and partnership between business and IT (Levy, 2014, Al-Kharusi et al., 2016, Brosius et al., 2018, Mondorf and Wimmer, 2017, Fonstad and Robertson, 2006). In line with an intuitive understanding of engagement prevalent in literature, in this paper we understand it as an active communication between various business and IT stakeholders, conscious participation of these stakeholders in business-IT alignment processes, collaborative decision-making and mutual commitment to the agreed decisions (Kotusev and Kurnia, 2019). Multiple empirical studies have identified the lack of effective engagement (e.g. communication, cooperation, interplay, etc.) between business and IT stakeholders as one of the most significant inhibitors of alignment (Lederer and Mendelow, 1989, Luftman et al., 1999, Luftman and McLean, 2004, Luftman et al., 2006).

From the EA perspective, numerous studies of EA-related problems (Ajer and Olsen, 2018, Banaeianjahromi and Smolander, 2019, Dang and Pekkola, 2016, Levy, 2014, Hauder et al., 2013, Lohe and Legner, 2014, Lucke et al., 2010, Chuang and van Loggerenberg, 2010, Seppanen et al., 2009) recognize the problem of achieving engagement between architects and other EA stakeholders among the most prominent obstacles to effective EA practice. Banaeianjahromi and Smolander (2019, p. 20) further “identified lack of communication and collaboration as the core obstacle that can explain most of the other obstacles”. On the contrary, establishing effective engagement between architects and other EA stakeholders has been long recognized as one of the prerequisites of successful EA practice (Verley, 2007, Fonstad and Robertson, 2006).

2.3 Existing Research Gaps

As demonstrated above, EA can be considered as an important instrument for improving business-IT alignment (Kotusev, 2020). At the same time, effective engagement between various business and IT stakeholders is widely recognized as both a critical success factor of EA practice and a major determinant of achieving business-IT alignment. However, engagement itself has received very limited attention in literature. For example, among hundreds of EA publications (Kotusev, 2017b), we were able to find only two studies focused specifically on engagement in the context of EA practice (Levy, 2014, Al-Kharusi et al., 2016). In particular, Levy (2014) recognized that effective engagement was a necessary precondition for a successful EA practice and proposed four theory-driven pillars of engagement: psychological engagement, behavioral engagement, procedural justice and identity judgment. Via reviewing the available EA literature, Al-Kharusi et al. (2016) identified three broad categories of factors that are likely to determine the quality of engagement (technical, organizational and personal) and 12 specific success factors of engagement related to these categories. However, these efforts are somewhat speculative in nature and offer only a tentative outlook on the problem of engagement, while intentional empirical studies thoroughly exploring engagement are essentially missing. As Al-Kharusi et al. (2016, p. 2) fairly observe, “there is scarcity of studies that uncover the factors dominating the engagement between the enterprise architects and the EA stakeholders”. Consequently, despite its acknowledged importance, stakeholder engagement in EA practice evidently remains an understudied area, where a clear definition of engagement is absent, sound theoretical conceptualizations of engagement are lacking and only some factors potentially influencing engagement have been identified in literature. Motivated by these gaps, this study aims to explore how organizations enhance stakeholder engagement in EA practice to achieve business-IT alignment.

3 Research Design

This study is exploratory, inductive and qualitative in nature. For this reason, we chose the case study research method as the most suitable approach for studying qualitatively a contemporary, but

insufficiently explored phenomenon in its full complexity and natural settings (Darke et al., 1998, Eisenhardt, 1989, Lee, 1989, Benbasat et al., 1987). For the purposes of this study, we selected a single case study which can be considered as both revelatory and longitudinal (Yin, 2017).

In order to answer our research question, we selected a large and complex case organization with a genuine need for a mature EA practice. Moreover, it was desirable to analyze an organization which previously experienced problems with establishing value-adding EA practice in order to understand the contrast between its past and present conditions and to be able to highlight respective differences from the perspective of an EA practice, its contribution to business-IT alignment and various factors influencing this contribution. According to these criteria, for our research we have chosen a large government department in one of the Australian states, which previously faced significant challenges with its EA practice, but then greatly improved its EA maturity and realized substantial benefits from practicing EA. The organization was initially studied in early 2016, when it was struggling with establishing effective engagement between architects and other EA stakeholders (Kotusev and Kurnia, 2019). Since then, the organization has invested considerable efforts to evolve its EA maturity and has achieved significant improvements in its EA practice. Although no formal EA maturity assessments have been undertaken (and there is also no single “right” way to assess or understand EA maturity (Vallerand et al., 2017, Salmans, 2010, Meyer et al., 2011)), it was evident from the interviews that the organization has advanced significantly in communication processes, stakeholder involvement, acceptance of EA and many other characteristic dimensions of EA maturity (van Steenberg et al., 2009, van der Raadt and van Vliet, 2009).

Our new data collection commenced mid-2019 (i.e. 3.5 years after the initial analysis of this organization) and is still in progress. By the present moment (October 2019), we took seven face-to-face interviews of one-hour duration with architects and other participants of the EA practice as follows: one with the architecture team manager, four with enterprise architects of various specializations, one with a solution architect and one with a program manager. Besides general contextual questions, our interview protocol covered areas related to business-IT alignment, its success factors and the role of EA in achieving alignment as well as to engagement, its success factors and role in alignment processes. All but one of the interviews have been recorded with the permission of the interviewees and transcribed verbatim for further analysis, while during the unrecorded interview extensive notes have been taken by one of the researchers. We also studied the existing EA documentation and analyzed the EA artifacts used in the organization.

We selected the grounded theory method as the most suitable approach for data analysis (Glaser and Strauss, 1967, Strauss and Corbin, 1998). During the data analysis we followed the three essential steps of the grounded theory method: open coding, axial coding and selective coding (Corbin and Strauss, 1990, Strauss and Corbin, 1998). These steps resulted in the development of our preliminary conceptual model explaining the relationship between EA practice, alignment, engagement and a number of enablers and barriers as presented in the next section. Some illustrative samples of the applied grounded theory coding procedures are provided in Table 1.

Quote	Identified codes	Resulting factors
“I have found <u>the business capability model [1]</u> to be very useful for [engaging with business] because you can point to their particular area, you can say “well, this is the functions that you perform as a business area” and that <u>immediately creates an understanding of what they are talking about [2]</u> ”	[1] Business Capability Model [2] Mutual Understanding	Use of Appropriate EA Artifacts
“It took a little while to get business stakeholders engaged. <u>When they hear the term “enterprise architecture” [1]</u> , they think about IT and <u>it took a long time for me to [overcome that] [2]</u> . Probably the longest part was starting up the project and <u>getting the people in the room [3]</u> ”	[1] IT-Specific Terminology [2] Problem [3] Involvement	Reluctance to Participate in EA

Table 1. Samples of grounded theory coding procedures

4 Preliminary Findings

4.1 Description of the Organization

The case organization ‘GovDept’ (fictional name to preserve anonymity) is a major government department in one of the Australian states. GovDept is controlled by the State Government and its ministers. It is responsible for a state-wide provision of important services of a social nature to the population of the whole state. In total, GovDept employs more than 14,000 people, including 250 internal IT staff. GovDept has been practicing EA in some form for the past 7-9 years. Previously GovDept experienced considerable problems with establishing a value-adding EA practice primarily due to the inability of architects to achieve effective engagement with relevant EA stakeholders, including both senior business leadership and project teams (Kotusev and Kurnia, 2019). Unsurprisingly, over the years GovDept’s architectural function has had a number of major restructurings and reorganizations.

Recently, significant efforts have been exerted by GovDept’s IT leadership to improve the EA practice, raise its status in the eyes of business leadership and establish effective engagement with stakeholders. As a result of these efforts, overall maturity of the EA practice and its acceptance in the broader organization increased substantially. Although not all earlier problems have been solved, the EA team was generally able to establish more constructive relationships with other stakeholder groups. The architecture function helped improve business-IT alignment in GovDept and also contributed to digital transformation of many GovDept’s business activities.

4.2 Emerging Model

Figure 1 shows the preliminary research model emerging from this study which revolves around three major concepts: the use of EA, alignment and engagement. The model shows how EA practice can facilitate engagement to achieve alignment and what factors may enable or present a barrier to engagement.

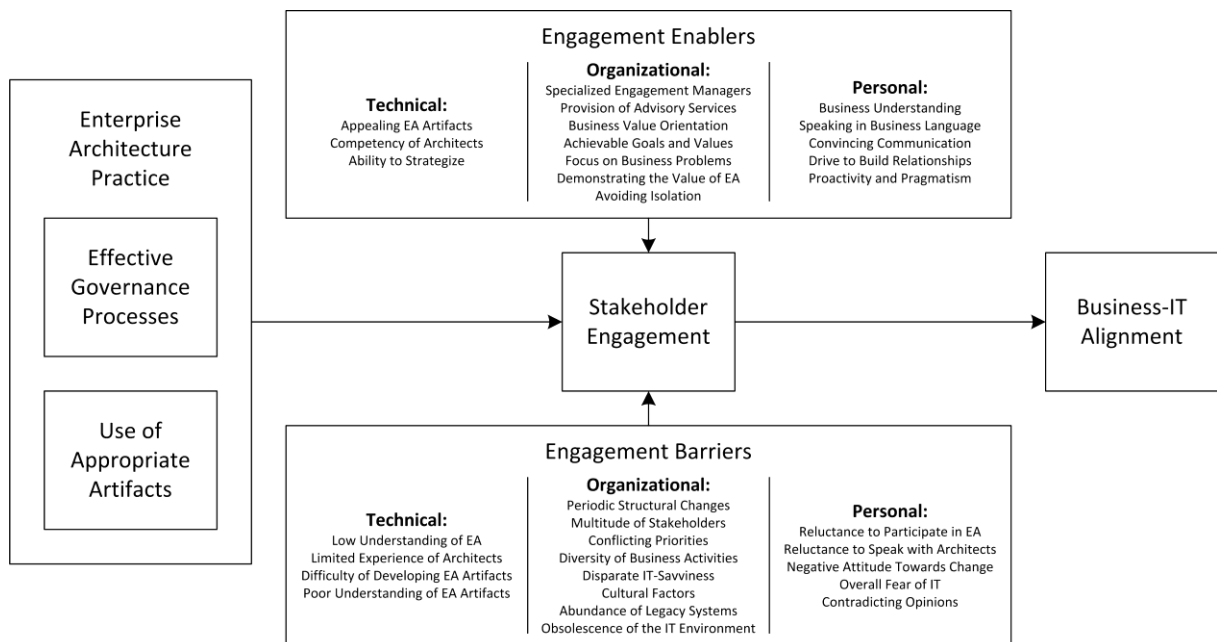


Figure 1. Preliminary research model

4.3 Enterprise Architecture Practice and Stakeholder Engagement

Our study identified two inherent elements of EA practice itself that heavily influence on the quality of engagement between architects and EA stakeholders: effective governance processes and the use of appropriate EA artifacts. First, effective governance processes enable interactions between various actors via bringing all relevant stakeholders together at the right time moments under the right agenda and instigating dialog between them. These governance processes relate to both global organization-wide (strategic) planning activities and local project-level (tactical) planning activities. The case organization has established effective governance processes that helped improve stakeholder engagement in recent years.

Second, the use of appropriate EA artifacts also positively influences the ability of the organization to achieve effective engagement between architects and other EA stakeholders. In particular, business capability model, ICT strategies, investment roadmaps and user journeys and stories proved to be especially helpful in the organization for communicating with business leaders regarding the future plans for IT investments and specific solution implementation options.

4.4 Factors Enabling Stakeholder Engagement²

We identified several enablers or success factors of engagement influencing the ability of the case organization to improve its business-IT alignment through practicing EA. These factors are organized into three categories proposed by Al-Kharusi et al. (2016): technical, organizational and personal.

First, technical factors (literally technical aspects as well as associated “hard” skills) include appealing EA artifacts, competency of architects and ability to strategize. Creating visually appealing EA artifacts generally facilitates their comprehension and acceptance by the intended business audience. Competency of architects implies the ability and previous practical experience in dealing with senior business stakeholders. Ability to strategize implies thinking in advance, envisioning the long-term picture and planning the desirable progression of events.

Second, organizational factors (all issues related to organizations as systems) include specialized engagement managers, provision of advisory services, business value orientation, achievable goals and values, focus on business problems, demonstrating the value of EA and avoiding isolation. Specialized engagement managers, formally titled in GovDept as strategic advisors, focus on bridging the communication gap between architects and business stakeholders and establishing productive collaboration involving both parties. Providing advisory services implies giving recommendations to interested parties regarding the possible or optimal use of IT for the business purposes. Business value orientation requires assessing and measuring the efficacy of various IT-related planning decisions in terms of their business value. Setting achievable goals and ideals requires avoiding “theorizing” and seeking perfect solutions in favor of more realistic objectives that can be realized with the available resources. Focus on business problems requires closely aligning all IT-related planning decisions to the actual problems experienced by the business. Demonstrating the value of EA motivates EA stakeholders to communicate more enthusiastically with architects. Avoiding isolation requires going out of the architectural “ivory tower” to actively seek conversations with business stakeholders and understand operational concerns.

Third, personal factors (primarily “soft” skills and attitudes) include business understanding, speaking in business language, convincing communication, drive to build relationships, proactivity and

² Some of the identified factors can be related either to enablers if formulated in positive terms (e.g. avoiding isolation) or to barriers if inverted and formulated negatively (e.g. perpetuating isolation). For this reason, the separation of factors into enablers and barriers is based largely on how the interviewees positioned these factors and certainly has a considerable subjective element

pragmatism. Understanding of the business and speaking in business language help architects communicate with business leadership, understand their problems, decisions and concerns. Convincing communication implies the ability of architects to convey their messages to business stakeholders in an intelligible and compelling manner. Drive to build relationships requires the genuine desire of architects to establish a trusting partnership with business leaders. Pragmatic attitude means staying realistic and adequately assessing benefits and costs of various planning decisions, while proactivity requires demonstrating initiative in conversations with business and empathy with their situation.

4.5 Factors Inhibiting Stakeholder Engagement

First, technical factors (literally technical aspects as well as associated “hard” skills) include low understanding of EA, limited experience of architects, difficulty of developing EA artifacts and poor understanding of EA artifacts. Low understanding of EA represents an insufficient understanding among business stakeholders of what EA is, how EA works and why their involvement in EA-related processes is required. Limited experience of architects represents an insufficient understanding of business operations and their specifics by architects. Hardships in developing EA artifacts represent significant efforts required to create necessary EA artifacts and achieve their acceptance by the business. Poor understanding of EA artifacts represents the inability of business stakeholders to interpret the information contents of EA artifacts and make respective planning decisions.

Second, organizational factors (all issues related to organizations as systems) include periodic structural changes, multitude of stakeholders, conflicting priorities, diversity of business activities, disparate IT-savviness, cultural factors, abundance of legacy systems and obsolescence of the IT environment. Organizational restructures and periodic structural changes in IT represent major reorganizations of business and IT structures respectively that complicate their mutual alignment. Multitude of stakeholders complicates engagement due to the necessity to involve broader circles of people into decision-making processes. Diversity of business activities represents dramatic differences in business operations of various organizational units that complicate achieving organization-wide business-IT alignment. Disparate IT-savviness represents different maturity of different business areas from the perspective of their understanding and adoption of IT. Cultural features represent various peculiarities of the organizational culture that discourage architects and business leaders from establishing productive dialog and achieving mutual understanding. Abundance of legacy systems and overall obsolescence of the IT environment represent the need to consider peculiarities of the current IT landscape, which often preclude achieving alignment.

Third, personal factors (primarily “soft” skills and attitudes) include a reluctance of business stakeholders to participate in EA, their reluctance to speak with architects, negative attitude towards change, overall fear of IT and contradicting opinions. Reluctance to participate in EA and speak with architects represents the lack of motivation among business stakeholders to take part in EA-related processes and activities and establish direct communication with architects. Negative attitude towards change represents overall reluctance of the involved actors to alter the existing situation to improve alignment. The overall fear of IT represents “pathological” avoidance of all IT-related discussions among senior business stakeholders. Contradicting opinions and conflicting priorities represent differences in strategic and tactical plans respectively among the various stakeholders involved in decision-making processes.

5 Discussion of Findings

5.1 Enterprise Architecture Context

The findings of this study fill important gaps existing in both the EA and alignment literature. From the EA perspective, this exploratory research is among the first studies intentionally focusing on the

stakeholder engagement in EA practice, which has received limited attention to date. The factors identified in this study largely confirm but also significantly extend the earlier findings of Al-Kharusi et al. (2016) on engagement enablers. Such factors as architectural knowledge, culture, organization dynamism, governance, conflict of interest and participation, though with a slightly different interpretation, have been recognized earlier by Al-Kharusi et al. (2016). At the same time, many other enablers and barriers to engagement identified in this study (e.g. ability to strategize, specialized engagement managers, provision of advisory services, convincing communication, drive to build relationships, diversity of business activities and disparate IT-savviness, among others) have not been previously recognized in the existing EA literature. Furthermore, this study identifies specific EA artifacts that proved especially valuable for engaging with business, i.e. business capability model, ICT strategies, investment roadmaps, as well as user journeys and stories.

5.2 Business-IT Alignment Context

From the alignment perspective, this study offers a more detailed view of the factors that facilitate and inhibit stakeholder engagement, which in turn affect business-IT alignment. On the one hand, most of the factors identified in this study (e.g. setting achievable goals, ability to strategize, focus on business problems, diversity of business activities and disparate IT-savviness) represent completely novel insights into the relationship between EA practice and alignment. On the other hand, the definitive role of engagement for achieving alignment is widely recognized (Luftman et al., 1999, Luftman and Brier, 1999, Preston and Karahanna, 2009, Teo and Ang, 1999). However, factors that determine the quality of engagement itself remain largely unclear. Thus, this in-depth, longitudinal case study enhances the existing body of knowledge by identifying a number of factors facilitating and inhibiting engagement which have not been identified previously in the alignment literature.

5.3 Limitations of This Study

Since the studied organization belongs to the public sector and represents a rather peculiar case of EA practice, the resulting model might have a somewhat organization-specific “flavor”. For example, some of the identified factors may be not generalizable to commercial companies. This fact can be considered as a limitation of our study. Another limitation of this study is associated with the use of the grounded theory method, which always implies considerable subjectivity in data interpretation (Strauss and Corbin, 1998).

5.4 Preliminary Contribution of This Study

From the theoretical perspective, the proposed model is among the first available models providing a detailed conceptualization of engagement in EA practice, its enablers and inhibitors. It extends the earlier literature review-based work of Al-Kharusi et al. (2016) by means of offering a more concrete and empirically substantiated understanding of engagement, alignment and their relationship. From the practical viewpoint, this study identifies a number of factors conducive to engagement that may assist architects in organizations with improving the quality of their partnership with business stakeholders.

6 Further Research Steps

The theoretical model shown in Figure 1 represents only a preliminary model based on early findings from the case organization. At this stage of research, only a portion of all intended interviews have been conducted and a theoretical saturation has not yet been achieved. More interviews with other participants of GovDept’s EA practice are planned to be organized in the future. These interviews may help better understand the longitudinal aspects and temporal dynamics of the EA practice evolution and development at GovDept. Moreover, other organizations might be also involved and studied as a later part of this research. As a result of these efforts, the emerging model will be extended, refined and enriched with new insights from the additional data.

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