

Enhancing the Strategic Alignment Model: The Contribution of BiSL

Ronald Beffers and Benny de Waal

HU University of Applied Sciences Utrecht, The Netherlands

ronald.beffers@agentschaptelecom.nl

benny.dewaal@hu.nl

Abstract: Scientific literature and practices emphasize that organizations have to align their business strategies with their IT strategy. Strategic alignment of business with IT in organizations is not only a prerequisite for organizations to be successful or competitive but also positively influences IT effectiveness and leads to greater profitability. At the same time organizations have been struggling for a long time with the concept of strategic alignment. In this paper an enhanced concept of strategic alignment is given in such a way that organizations can practically use to align their business and IT. Based on scientific research in this study the existing concept of strategic alignment model, i.e. the relationship between business and IT, was enhanced by placing the discipline of information management between business and IT and thus making information management responsible for the alignment or linking of business with IT. This conceptually enhanced concept of strategic alignment was practically enhanced even further with the use of the Business Information Service Library (BiSL) framework. This framework links business with IT on the strategically, managing and operational level of an organization. The BiSL process framework thus provides a description of the information management processes on the different levels of an organization that have to be implemented and carried out to achieve strategic alignment within an organization. With the support of three experts in the field of information management and BiSL, an enhanced Strategic Alignment Model was constructed. To validate this model 25 semi-structured interviews were conducted in eleven organizations. The results of these interviews show not only a strong and solid support for adding information management to the existing concept of strategic alignment but also indicate a strong and solid support for the use of the BiSL framework for implementing information management. These findings support the notion that the BiSL enhanced Strategic Alignment Model not only provides a conceptually enhanced strategic alignment model but also provides organizations with a concept of strategic alignment that organization can practically use to align their business with IT.

Keywords: Strategic alignment, Business Information Management, BiSL framework, Qualitative research

'However there is little research published that attempts to validate the SAM or describe its use in practice.' (Avison, Jones, Powell and Wilson, 2004).

1. Introduction

Organizations need to align their business with IT to be successful or competitive (Bennis, 2013; McKenna, 2000). At the same time there is a debate in scientific literature about what alignment actually is, why it is needed, how organizations may go about the task of becoming aligned and how it should best be researched (Silvius, De Waal and Smit, 2009). As a result many different ideas or concepts of strategic alignment exist (Chan and Reich, 2007). Organizations also seem to be struggling how to make practical use of the concept of strategic alignment to align their business with IT (Avison et al, 2004). And although attempts have been made to enhance the concept of strategic alignment these studies provided little information what one could do with these enhanced strategic alignment concepts and models except understand them conceptually (Avison et al, 2004). For any model to continue to exist it should not only be conceptually relevant but also practically relevant (McKay and Marshall, 1999). According to Sabherwal and Chan (2001) this means that the processes by which alignment is accomplished, i.e. practically and effectively worked out in organizations need to be better understood.

One of the strategic alignment models that provides such a process oriented approach is the Business Information Services Library (BiSL) (Van der Pols, Donatz and Van Outvorst, 2005). BiSL describes a process framework that links business with IT (Van der Pols and Backer, 2007). Since the business information management processes in BiSL link business with IT, BiSL therefore can be used to enhance the concept of strategic alignment. In this study we use the Strategic Alignment Model by Henderson and Venkatraman (1989) as a starting point for our research since much of the research on strategic alignment is based on this model (Avison et al, 2004; Coltman et al, 2015). We explore BiSL because BiSL enhances the concept of strategic alignment by providing a process oriented concept of strategic alignment that organizations can use to align their business with IT. Both theoretically and empirically, the main research question of this paper is: *How can the concept of strategic alignment be enhanced with BiSL?*

In the following section, the theoretical foundation of the research is presented. Thereafter, the research methodology is presented, followed by the description and analysis of the results. In the final section, the conclusions and a discussion of the implications and limitations of this paper will be presented.

2. Theoretical perspective

All organizations have to align their business with IT. Scientific literature suggests that organizations cannot be competitive or successful if their business and information technology strategies are not aligned (Avison et al, 2004; Coltman et al, 2015). This alignment of business and information technology strategies has been conceptualized in scientific literature as strategic alignment or business IT alignment (Henderson and Venkatraman, 1989). But organizations seem to be struggling with the concept of strategic alignment and they have been struggling for a long time (Chan and Reich, 2007; Luftman, 1996; Luftman et al, 2015). In regard to question why organizations are still struggling with strategic alignment, Avison et al (2004) point out that despite the widespread acceptance that business and IT strategies should be aligned the nature of alignment is inadequately clarified in literature because the concept of this linkage has been historically invoked as a metaphor to argue for the integration of business and information technology strategies without adequate articulation or clarification of its characteristics. As a result of this inadequate articulation or clarification of the characteristics of the concept of strategic alignment many pseudonyms of strategic alignment and different strategic alignment models have been proposed to conceptualize alignment in scientific literature (cf. Silvius, De Waal and Smit, 2009). It has been named as *linkage* (Henderson and Venkatraman, 1989), *fit* (Chan, 1992; Henderson and Venkatraman, 1993), *integration* (Weill and Broadbent, 1998), *harmony* (Luftman et al, 1996), *bridge* (Ciborra, 1997), and *fusion* (Smaczny, 2001). Of the models that have been proposed in Information Systems (IS) literature the one that has attracted the most attention from researchers is the Strategic Alignment Model (SAM) by Henderson and Venkatraman (1989). In Figure 1 an adapted version showing the relevant organizational aspects of this strategic alignment model for this research is shown.

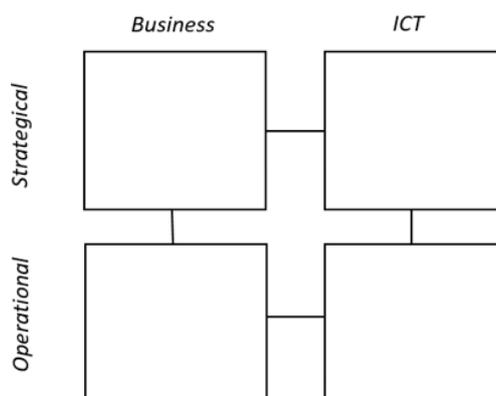


Figure 1: An adapted version of the Strategic Alignment Model by Henderson and Venkatraman (1989)

According to Avison et al (2004), SAM emerged from the part of the MIT90s Framework by Scott Morton (1991) that looked at the link between business strategy, IT, structure, and management processes (Venkatraman, 1991) and a series of three MIT Sloan School/CISR working papers that appeared at the same time that essentially looked at the cross-domain linkages between different quadrants in SAM (Henderson and Venkatraman, 1989; 1990) and highlighting results from a survey linking IT business partnerships, IT planning, to four measures of fit (Henderson and Venkatraman, 1992). Since much of the research has been based on SAM this strategic alignment model will be used in this research (Avison et al, 2004; Coltman et al, 2015).

The Strategic Alignment Model was enhanced by the generic framework for information management developed by Maes (1999; Maes et al, 2000). An adapted version of the generic framework for information management showing the relevant organizational aspects of this strategic alignment model is shown in Figure 2. In the generic framework for information management the functional layer of information and the organization layers of managing and operations were added to the concept of strategic alignment to reflect the current need for information and communication between business and IT on the different levels of an organization (Coltman et al, 2015).

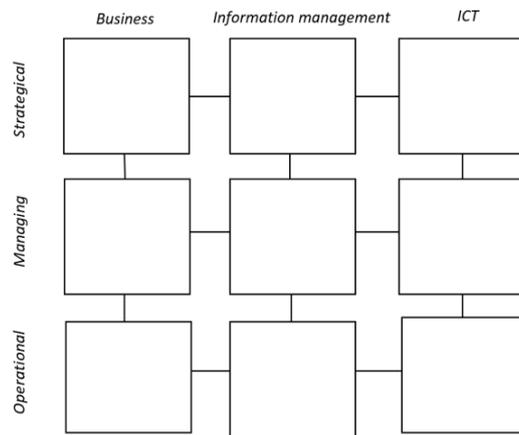


Figure 2: An adapted version of the generic framework for information management by Maes (1999).

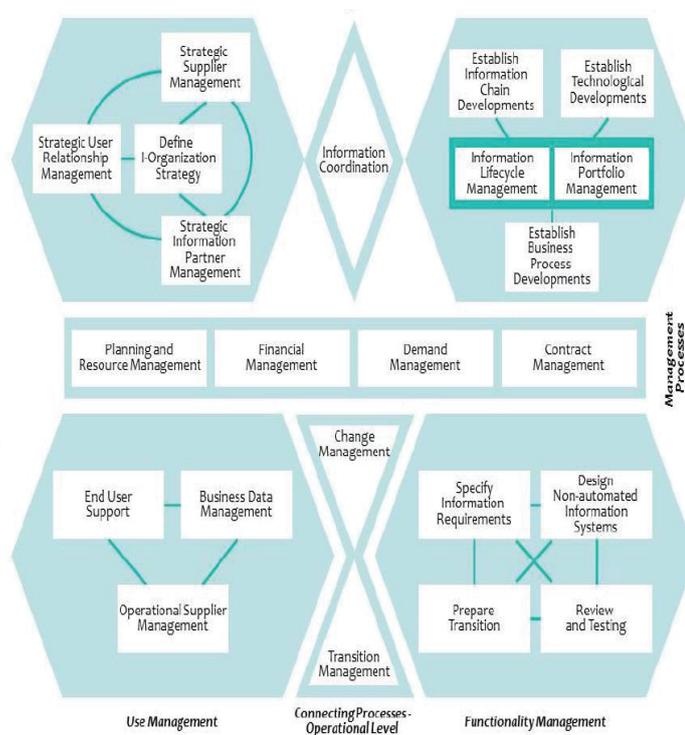


Figure 3: The BiSL Framework (ASL BiSL Foundation, 2017)

To manage the information on the different levels of an organization a process framework for business information management, better known as the Business information Service Library (BiSL) was developed by Van der Pols, Donatz and Van Outvorst (2005) based on their experience and lessons from practice. The BiSL process framework describes the business information management processes that link business with IT. The BiSL process framework is depicted in Figure 3. Since these business information management processes link business with IT, the BiSL process framework can be used to enhance the existing concept of strategic alignment. Although attempts have been made to enhance SAM these studies provided little information what one could do with these enhanced Strategic Alignment Models except understand them conceptually (Avison et al, 2004). For any model to continue to exist it should not only be conceptually relevant but also practically relevant (McKay and Marshall, 1999). According to Sabherwal and Chan (2001) this means that the processes by which alignment is accomplished, i.e. practically and effectively worked out in organizations need to be better understood. The BiSL process framework provides such a process oriented approach.

The conceptual model for this research was constructed by combining the generic framework for information management by Maes (1999) with the BiSL process framework by Van der Pols, Donatz and Van Outvorst

(2005) and by positioning the BiSL process framework in the middle column of information of the generic framework for information management. This positioning is possible because the BiSL process framework provides an implementation of the information management processes needed to manage the information on the different levels of an organization in the middle column of the generic framework for information management by Maes (1999). The BiSL enhancement of SAM was discussed in three interviews with experts in the field of strategic alignment, information management and BiSL. By positioning the BiSL process framework in the middle column of information of the generic framework for information management, a BiSL enhanced Strategic Alignment Model as depicted in Figure 4 was constructed.

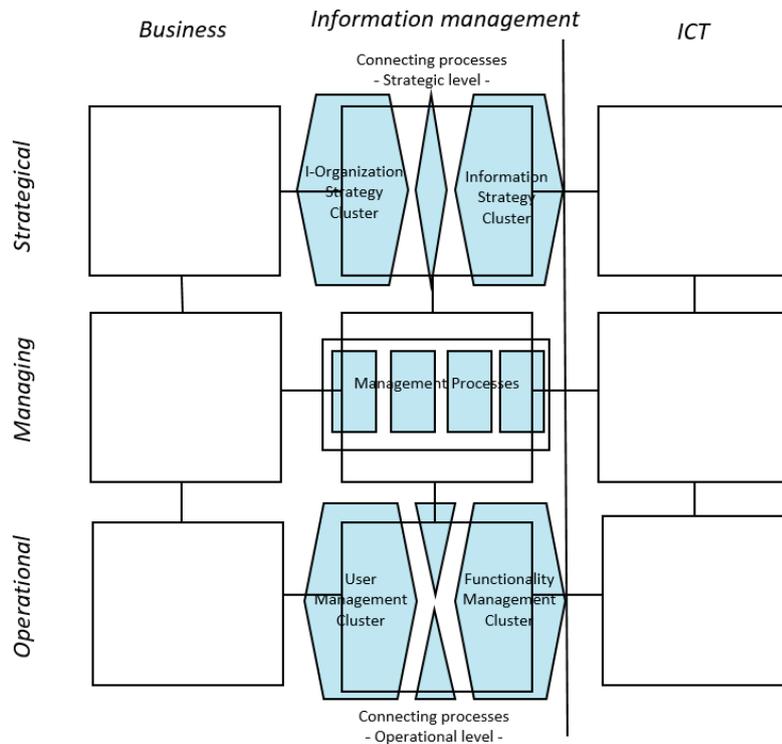


Figure 4: The BiSL enhanced Strategic Alignment Model

Our conceptual model consists of two assumptions or hypotheses which are examined in this study:

1. The Strategic Alignment Model by Henderson and Venkatraman (1989) can be enhanced by adding the functional layer of information and organizational layers of managing and operations to the concept of strategic alignment as proposed by Maes (1999) in the generic framework for information management;
2. The generic framework for information management by Maes (1999) can be enhanced even further by positioning the BiSL process framework by Van der Pols, Donatz and Van Outvorst (2005) in the middle column of information of the generic framework for information management by Maes, resulting in the construction of a BiSL enhanced Strategic Alignment Model.

In the next section the research methodology used for the research will be described.

3. Research methodology

The BiSL enhanced Strategic Alignment Model was constructed according the Design Science Research Methodology (DSRM) by Peffers et al (2007). As part of DSRM a literature study was conducted to introduce the key concepts on strategic alignment and BiSL for this study. The BiSL enhanced Strategic Alignment Model was evaluated by a case study method (Yin, 2014). An embedded, in-depth, multiple qualitative case study (Yin, 2014) was conducted at 11 case organizations in the period between June and September 2016 where 25 semi-structured interviews were taken to test our hypotheses. The case organizations in question were carefully selected and varied on their organizational characteristics (industry, company size, profit and not-for-profit, governmental and public owned organizations) as proposed by Benbasat, Goldstein and Mead (1987).

3.1 The interviews

The participants from the 11 case organizations that participated in this research were selected based on their professional knowledge of strategic alignment and information management or the function or position they fulfil in the case organization. Based on these selection criteria the group of participants consisted mainly of CIO's, (senior) business managers, heads of IT departments, heads of information management departments, information managers, strategic alignment experts and BiSL-experts. The choice for primarily targeting this group of participants for this case study research was based on the assumption that these professionals should have a clear and professional understanding of what is meant by strategic alignment and information management and what kind of (information) management processes are needed in an organization to realize both.

To gain a better understanding of the 11 participating case organizations and to prepare for the case study interviews a desk research was performed. Also the case organizations were asked to provide additional information and documentation on how strategic alignment and information management in their organization are realized. Between June and September 2016 a total of 25 interviews at the 11 case organizations were taken by the researcher usually at the case organizations' offices. The interviews were focused on how SAM could be enhanced by focusing on BiSL's contribution to strategic alignment. These 25 interviews also include two pilot interviews. The reason to include these pilot interviews was that these interviews were conducted in exactly the same way as the case study interviews. Table 1 shows the interviewees by job title and organization characteristics.

Table 1: List of interviewees by job title and organization characteristics

Organization	Interviewee job title	Sector	Number of employees (FTE)
1	Team Manager Functional Management	Insurance (health care)	2259
1	Manager Business Team	Insurance (health care)	2259
2	Test Manager	Financial sector(banking)	37170
3	Information Manager	Education (higher education)	3536
3	Information Manager	Education(higher education)	3536
3	End user support specialist	Education(higher education)	3536
4	Program & Project management Officer	Insurance (retirement)	1372
5	Corporate Information Manager	Education (higher education)	2812
5	Business Information Manager	Education (higher education)	2812
5	Business Information Manager	Education (higher education)	2812
6	Head Information Manager	Semi-Governmental (energy)	3061
6	Information Manager	Semi-Governmental (energy)	3061
7	Information Manager	Health Care	764
7	Head Information Management	Health Care	764
8	Information Manager	Health Care	7353
8	Team Manager Information Management	Health Care	7353
8	Chief Science Information Officer	Health Care	7353
8	Chief Medical Information Officer	Health Care	7353
8	Service Manager	Health Care	7353
9	Information Manager	Education	530
10	Coordinator Information Management	Semi-Governmental (law enforcement)	50747
10	Coordinator Information Management	Semi-Governmental (law enforcement)	50747
10	Team Manager Information Management	Semi-Governmental (law enforcement)	50747
11	Head Information Management	Education (university)	2610
11	Information Manager	Education (university)	2610

Since BiSL's contribution consists of the BiSL process framework that can be used for implementing information management the research questions were focused on the role of information management has in the alignment of business and IT and if the BiSL process framework can be used to implement information management in an organization. The length or duration of the interview was set to one hour. An interview guide was designed and applied, but deviations could occur depending on the answers. The interviews were digitally recorded using a digital voice recorder. The recorded interviews were professionally and fully transcribed (Patton, 2002). The transcriptions of the interviews were sent to the respondents for approval and possible comments and corrections. The transcripts from the interviews were then placed in, coded and analyzed using the CAQDA software package of Atlas.ti version 7. Further and additional analysis of the research data was done using the spreadsheet program of Microsoft Excel 2016.

3.2 Analysis procedure

The different types of interviews were analyzed using a cumulative editing approach (Runeson and Höst, 2009). For this approach each of the interview transcriptions were placed in Atlas.ti and then read by the researcher to determine the meaningful fragments of texts. This resulted in the identification of statements related to the key findings of the research on the BiSL enhancement of the Strategic Alignment Model. Since a combination of question and theme based coding was used for this research the fragments of text were first coded in Atlas.ti using structural coding (MacQueen and Quest, 2008). These structural coded text fragments were then read again to determine meaningful fragments within these structural coded text fragments using open coding. If necessary, the decision was made to merge codes or to change a fragment to another code following an axial coding procedure. This procedure was repeated for each interview. Because the structural codes were derived from the variables for this research this whole procedure could also be viewed upon as the selective coding process (Boeije, 2002; Neuman, 2002).

3.3 Validity procedure of interview data

For the interview data in this case study research the following four aspects of validity are used: construct validity, internal validity, external validity, and reliability (Yin, 2014). Construct validity in this case study is handled by using multiple sources of evidence (desk research, documentation and case study interviews) and establishing a chain of evidence. The internal validity was safeguarded by conducting interviews with multiple participants to check the statements made in the different interviews. To govern external validity multiple case studies were arranged for comparison, in particular with regard to the participation of different types of organizations but also the participation of senior information management executives in this case study research. Finally, to ensure reliability, the interview were professionally transcribed and the transcripts of the case study interviews in combination with a questionnaire were sent to the interviewees for approval and possible corrections and comments. To generally govern validity, a case study protocol and a case study database were created.

4. Results

The results of this study relate to the two topics that have been examined in the case study research. The first topic that has been examined is the topic of strategic alignment. This topic was examined based on the literature review to provide a contemporary insight of both the definition, importance and relevance of strategic alignment. The other topic that has been examined is the BiSL enhancement of the Strategic Alignment Model. This topic is the central theme of this study. The results on both strategic alignment and how the concept of strategic alignment can be enhanced with BiSL will be discussed next.

4.1 Results on strategic alignment

On the meaning of strategic alignment several descriptions were provided by the respondents but all these different description can be placed under one single description found in the scientific literature that describes strategic alignment as connecting the business strategy with the IT strategy (Avison et al, 2004). About the importance of strategic alignment all the respondents stated that the topic of strategic alignment is a very important topic. The reason why strategic alignment is so important several reasons were provided. One of the reasons is that it is seen as vital or important for the realization of the strategic or business objectives of the organization. Another reason is that IT has become part of the primary process and that IT is seen as an accelerator or enabler of new way of doing business.

4.2 Results on the BiSL enhancement of the Strategic Alignment Model

Since BiSL's contribution to strategic alignment consists of a process framework for implementing information management the research questions were focused on the two key elements of the BiSL process framework. The first key element involves the role of information management has in the aligning of business and IT. The second key element is that the BiSL process framework can be used to implement information management on the different levels of an organization.

All the 25 respondents agreed upon the fact that information management fulfills a role in the aligning of business with IT. This unanimous agreement among the respondents about the role information management fulfills in the aligning of business with IT indicates a strong and solid support for the enhancement of the concept of strategic alignment, i.e. the relationship between business and IT with information management as proposed in the generic framework of information management by Maes (1999). The interviewees gave several explanations. One of the frequent explanations given is that information management acts as a bridge

function between business and IT. Another explanation frequently found is that it acts as a translation function. Related to that another explanation that was found is that information management acts as a gatekeepers function between business and IT. In regard to the use of the BiSL process framework for implementing information management in 17 out of the 25 cases the respondents agree with such a use. In 7 out of the 25 cases this is probably the case because of the ambiguous or not straight forward nature of the answers the respondents provided. And in just one case the respondent did not agree with such an enhancement. The reasons why respondents agree with the use of the BiSL process framework for implementing information management can be best summarized as follows: BiSL provides an accurate and overall description of all the aspects of information management and the information management processes needed to implement information management in an organization.

4.3 Summarizing the results on the BiSL enhancement of the Strategic Alignment Model

Since all of the respondents agree with the role information management has in the aligning of business with IT and also a strong and solid majority of the respondents agree on the use of BiSL for implementing information management in an organization these results indicate a strong and solid support for the BiSL enhancement of the Strategic Alignment Model and therefore the construction of a BiSL enhanced Strategic Alignment Model. These results show that a BiSL enhanced Strategic Alignment Model not only enhances the concept of strategic alignment by introducing information management to the concept of strategic alignment. But by using BiSL for implementing information management the BiSL enhanced Strategic Alignment Model provides organizations also with a concept of strategic alignment that they can practically use to align their business with IT.

5. Discussion, conclusions and implications

In this paper we have elaborated on BiSL to explore how BiSL could be used to enhance the concept of strategic alignment. Since BiSL links business with IT the assumption was made that BiSL could be used to enhance the concept of strategic alignment. This assumption or hypothesis led to the construction of an BiSL enhanced Strategic Alignment Model. The results of the analysis not only indicate a strong and solid support that the concept of strategic alignment, i.e. the relationship between business and IT can be enhanced by adding information management between business and IT, but also a strong and solid support that the BiSL process framework can be used to implement information management on the different levels of an organization. Since the BiSL enhanced Strategic Alignment Model incorporates these enhancements, these results also indicate a strong and solid support for the BiSL enhanced Strategic Alignment Model. Based on these results the conclusion can be drawn that the BiSL enhanced Strategic Alignment Model not only enhances the concept of strategic alignment but also provides organization with a practical concept of strategic alignment that organizations can use to align their business with IT.

These findings have a number of practical implications. First, the results provide an answer to the research questions found in the scientific literature on the processes associated with strategic alignment and strategic alignment models (Avison et al, 2004; Coltman et al, 2015; Hussain, King and Cragg, 2002; Sabherwal and Chan, 2001). Second for practitioners, like for example information managers, head of information management departments and CIO's the results make clear that the BiSL process framework should be considered a serious alternative for implementing information management in the organization. To be able to use the BiSL process framework as a serious alternative for implementing information management we suggest to invest in acquiring adequate knowledge about BiSL and how BiSL can be used in the organization for implementing information management so that strategic alignment in the organization can be achieved.

6. Limitations and further research

Although the research was carefully designed, there are some limitations. One of the limitations was that the research was limited in both time and the resources available. This will impact the scope and the generalizability of the results. Another limitation is the number of case studies that were performed. Even though the number of case studies that were performed is considerable and appropriate measures were applied to ensure validity, it is still important to realize that the information obtained from the cases studies is bound to the context of the case studies and therefore is not automatically applicable in a broader context.

Also a limitation is the interview design, specifically the situation that the interviewing for this research was limited to one single one-hour-interview, that in a number of the cases proved to be a limitation. Therefore more case studies, preferably under modified conditions, are needed to validate the findings.

The results also have implications for further research. Based on the experiences and the results of the case study research we would suggest two different lines of research. The first line of research we would suggest is a continuation of the research conducted in this case study research. But for such a case study research we would recommend that enough adequate and detailed information should be available on how information management is implemented in the case organization. The absence of such information seriously hampered this case study research on one of the most crucial parts of the case study research since it was unclear what to expect and what to prepare for. The other recommendation we would like to make for such a case study is that some sort of follow-up to the interview is available. The availability of such a follow-up to the interview will provide an opportunity not only to present but also discuss and clarify some of the findings of the research. We believe that these two suggestions will have a strong and positive effect on the results of such a case study research.

The second and different line of research we would like to suggest is a line of research that takes a closer look at some of the results of this case study research. As described the results of this case study offer a strong support for the BiSL enhancement of the Strategic Alignment Model. But when taking a closer look at these results it becomes clear or obvious that these results in fact originate or come from two different types of sources. One of the type of sources are those respondents that agreed on the BiSL enhancement of the Strategic Alignment Model based on the comparison of the description of the information management processes implemented in the organization with the information management processes in the BiSL process framework. These respondents had no prior knowledge of BiSL. The other type of sources are those respondents that agreed on the BiSL enhancement of the Strategic Alignment Model based on an already present professional conviction or believe that the BiSL process framework provides them as described in the findings of this research with *“an accurate and overall description of all the aspects of information management and all the information management processes needed to implement information management in an organization”*. So these respondents had prior knowledge of BiSL. This raises the question why these respondents started looking at information management for aligning their business with IT. But also what the reasons were that these respondents came to believe or became convinced that the BiSL process framework provided them with a process framework that was suited for implementing information management in an organization. For this a deepened or intensified investigation of these research result on the BiSL enhancement of the Strategic Alignment Model is needed.

We believe that these recommendations for further research will show if these results can be generalized to more organizations and show how the BiSL enhanced Strategic Alignment Model provides organizations not only with an enhanced strategic alignment concept but also with a concept that can be practically used for aligning business with IT.

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