

Developing a Maturity Model for IT Alignment in a Cross-Organizational Environment

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Abstract. Business-IT alignment is pervasive today, as organizations strive to achieve competitive advantage. Nowadays, there are maturity models to assess such alignment. Those models, however, do not specifically address the aspects needed for achieving alignment between business and IT in cross-organizational settings. Business-IT alignment in such settings is different, as in cross-organizational collaborations, alignment is driven by economic processes instead of centralized decision-making processes. In this research, we develop a cross-organizational business-IT alignment maturity model that takes this difference into account.

1 Introduction

Business-IT alignment is the problem of matching services offered by IT with the requirements of the business [1]. In businesses of any significant size, business-IT alignment is a hard problem that currently is not completely solved. With the advent of cross-organizational collaborations, the problem gets a new dimension because in cross-organizational settings there is usually no single decision point. Different decisions are often taken at different times and by different individuals or groups in a cross-organizational collaboration, and these have to be coordinated.

Various maturity levels can be identified for the alignment between business and IT. Therefore, maturity models seem a suitable vehicle for cross-organizational collaborations to use in order to gain a deeper understanding of how they progress toward better business-IT alignment. There have been some proposals for alignment maturity models, e.g., Luftman's strategic alignment assessment [2]. However, as they are oriented to single enterprises, they lack a cross-organizational viewpoint that takes specific characteristics of this setting into account. To face this problem, we are developing a Value-based business-IT Alignment Maturity Model, which we call the VITAL MM.

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2 The Problem

A maturity model (MM) is a framework that describes, for a specific area of interest, a number of levels of sophistication at which activities in this area can be carried out. Existing literature indicates important criteria to judge the level of alignment between business and IT within a single enterprise. However, identifying such criteria in a cross-organizational environment –or re-thinking the existing ones, is hardly addressed at all. Therefore, nowadays, there is no MM to assess business-IT alignment in a cross-organizational environment.

To bridge this gap, we are developing the VITAL MM. In a collaboration, each participating organization can have a different level of maturity in its alignment between business and IT. The maturity of each participating organization is going to influence the maturity of the business-IT alignment of the entire cross-organizational collaboration. A maturity model can take the standpoint of one participant and limit itself to the maturity level of that participant, but our model is being developed to take the standpoint of entire cross-organizational collaborations. It will assess the business-IT alignment of the collaboration at large. In addition, as our model will be a development MM [3], besides being a guide for determining the maturity of the IT alignment, it will provide an in-depth business transition plan for the collaborations including a roll out of recommendations, e.g., coordination mechanisms, implementation strategies and organizational changes, to make it easier for cross-organizational collaborations to establish goals for process improvement and identify opportunities for optimization.

Research Questions

The objective of this research is to enable assessing business-IT alignment in cross-organizational collaborations by developing the VITAL MM. To discuss our research questions, we use the distinction between world problems and knowledge problems [4]. So, our objective is a world problem and to solve it, we should gather knowledge. We can see an example of the mutual recursion of world problems and knowledge problems of this research in Fig. 1.

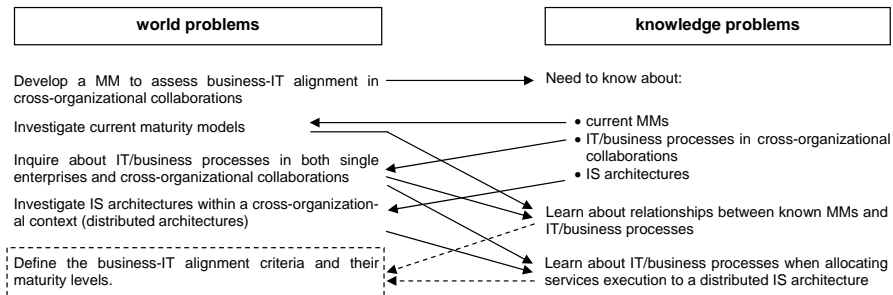


Fig. 1. World problems and knowledge problems.

The problems identified in Fig. 1 led us to formulate our research questions. As indicated in our previous work [5], a MM has two dimensions: the maturity levels and the areas to which these levels are applied. In the context of assessing maturity of IT alignment, these dimensions are accounted for in our main research question:

Q1 *What are the business-IT alignment criteria, i.e., the main areas to consider to achieve business-IT alignment, when dealing with a cross-organizational environment? How can maturity levels for this alignment be defined?*

Currently, we have a proposal concerning the business-IT alignment criteria to be included in the model (see Section 4). The next question arises as to:

Q2 *How do we know whether the criteria we propose are complete and suitable?*

Assuming that in cross-organizational settings there is usually no single decision point and investment decisions are based on the value all parties of a cross-organizational collaboration are going to obtain, we also defined the following research question:

Q3 *Which processes take place in cross-organizational collaborations when allocating services execution to each of the criteria included in the model?*

Finally, our last research question relates to the validation of the MM:

Q4 *How can we judge the fit of the VITAL MM in real-life cross-organizational settings?*

3 Research Approach and Methods

This research is conceptual, qualitative and interdisciplinary. It is a formulative investigation [6] that is going to involve synthesizing and integrating information in order to develop a final maturity model. Because our research questions are empirical, not normative, we will investigate them by means of case study research that will take place in cross-organizational collaborations.

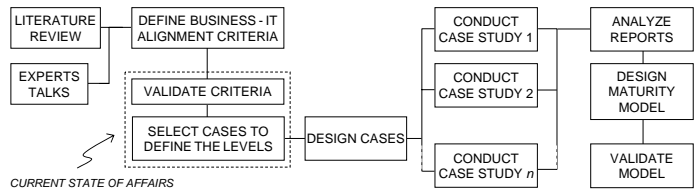


Fig. 2. Research approach.

A high-level description of our approach is presented in Fig. 2. We started with a literature review and talks with experts, in order to learn about current

MMs, and to identify common IT/business process architectures from two perspectives: single enterprise and cross-organizational environments. At this point, we have recognized what IT processes take place in organizations [7] having an idea concerning how such processes are managed in real-life settings. Based on these two steps, we defined the first proposal of the business-IT alignment criteria to include in the VITAL MM. Then, we began to validate those criteria by using a focus group and a case study [8]. Our next step is to identify IS architecture/partnering structure/process architecture/coordination in established cross-organizational collaborations by conducting case studies. We expect this knowledge to help us recognize the processes that take place in cross-organizational collaborations when allocating services execution to each of the current criteria included in our VITAL MM. This will help us define the maturity levels of such criteria (see Section 4).

Having (i) the results of the case studies, (ii) some results of the other sub-projects of the VITAL project¹, and (iii) the knowledge obtained from the review of literature as basis, we will settle the criteria that should ultimately be included in the VITAL MM. These final criteria should be both complete and suitable for the purpose of assessing the maturity of business-IT alignment in a cross-organizational environment. Then, we need to validate the complete model. As we have it presented in a previous publication [3], we will validate the VITAL MM using expert panels and conducting industrial trials. The research methods that we intend to use for each research question are the following: synthesis/integration of information² (for Q1), focus group sessions and case studies (for Q2), case studies and literature review (for Q3), and expert panels and industrial trials/action research (for Q4).

4 The VITAL MM

Currently, our VITAL MM is a work in progress which just reached its first milestone, “DEFINE BUSINESS-IT ALIGNMENT CRITERIA”. At this moment, we are working on the steps “VALIDATE CRITERIA” and “SELECT CASES TO DEFINE LEVELS” (see Fig. 2). In an earlier publication [5], we reported on our motivation for developing the VITAL MM, the fundamental principles of its design, the research challenges we met (the definition of the model’s standpoint, the specification of the model’s type – i.e., assessment versus development model, the identification of the units, the determination of the model’s architecture – i.e., staged versus continuous model, the definition of the maturity levels, and the validation), and the first proposal concerning the criteria [3] to be included in the model.

We claimed that enterprise architecture, IT governance, workflow structure, IT/business processes and coordination were the most important topics to consider when dealing with cross-organizational collaborations so that value is created for the participating organizations and IT alignment is achieved. These criteria were

¹ For more information, please refer to <http://www.vital-project.org/>

² This information will be obtained from the case studies and the literature review.

included in our first model proposal. Then, to validate our model, we devised a multi-method approach [8]. We used a focus group session and a case study as instruments to take this first step in validating the business-IT alignment criteria.

Our first validation experience has shown this multi-method approach is useful to validate MMs in their initial stage of development. As a result of this validation effort, the criteria included in our first model proposal have been significantly changed. Fig. 3 presents the new criteria addressing the scope of our current model proposal. They are the following: IS architecture, partnering structure, process architecture, and coordination.

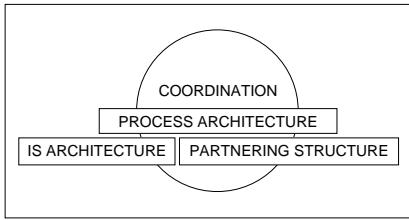


Fig. 3. Relationships among the ‘new’ criteria of the model.

Fig. 3 indicates that an understanding of both partnering structure and IS architecture is needed to efficiently support the process architecture of the cross-organizational collaboration. Professionals involved in cross-organizational IT alignment can (re)design the partnering structure and IS architecture separately, however, they need to understand both in order to create and maintain a solid basis for the processes required to achieve shared goals and to exchange information in the collaboration. Coordination, then, comes next to manage the dependencies among the collaborative activities.

5 Conclusion and Future Work

In this paper, we formulated and motivated our problem, our research questions and our approach used to develop a maturity model for cross-organizational business-IT alignment, called the VITAL MM. We also presented our preliminary results stating how our model is different as compared to existing alignment maturity models.

In this research, we analyze business-IT alignment in cross-organizational environments in order to propose the main criteria to achieve such alignment while value is created for the participating organizations. So, taking a cross-organizational point of view, we will produce, with the information obtained in case studies and literature review, a maturity model to assess business-IT alignment in cross-organizational environments.

Currently, in order to have a better basis to continue the development of our model, we are delimiting the scope of the MM. For doing that, we are using the value chain idea of Porter [9] and the GRAAL framework [10], by analyzing the possible interactive relationships among participating organizations in cross-organizational collaborations. Future work includes practicing our validation process, i.e., conducting more focus groups and case studies in different cross-organizational environments, to replicate or counter the results of our first validation process and to generalize findings. Moreover, we will also need to identify what is a good and a not so good practice for each of the business-IT alignment criteria of the VITAL MM to determine their maturity levels.

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