On the Way from Research Innovations to Practical Utility in Enterprise Architecture: The Build-Up Process

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ABSTRACT

Innovative Enterprise Architecture (EA) approaches developed by researchers and focused on the evaluation and the analysis of organizations require an extensive set of “measurable” input parameters. In practice, organizations often cannot provide the required data, which makes the implementation of these approaches difficult. In this work, the authors specify the build-up process that represents a systematic identification, gathering, and consolidation of data required by the target EA approach. This paper illustrates the build-up process by presenting a case study where the research approach to business-IT fitness measurement, in the context of a real industrial project in a mass retail company, is implemented. Initially, the poor quality of the input data presented a serious threat for business-IT alignment assessment using the fitness measurements. After the input parameters have been built up, the applicability of the fitness measurements were significantly improved and alignment assessment was accomplished successfully. By using the build-up process, it is possible to increase the applicability of any research approach in EA and, in spite of the initial absence of input measurable parameters, to deliver meaningful results to practitioners.

Keywords: Business-IT Alignment Assessment, Data Collection, Design Science, Domain-Specific Knowledge, Enterprise Architecture

INTRODUCTION

Nowadays, numerous approaches aiming at validation, measurement, and improvement of business-IT alignment are developed by the research community (Bleistein, 2005; Bodhuin, 2004; Kearns & Ledere, 2003; Campbell & Avison, 2004; Luftman, 2000; Rychkova, 2008; Simonin, 2007; Wegman, 2005; Wieringa, 2003; Barrios & Nurcan, 2004; Nurcan, 2004). However, many of these approaches have difficulties in being adopted by the industrial organizations whose needs they are addressing.

To identify and eliminate a malfunction in a car, a mechanic needs to know the vehicle’s technical characteristics (from the
car registration book), its current state, and accident history (from the car maintenance book), and its condition of exploitation. This information represents an important input for the diagnostics and repair. Along similar lines, approaches for diagnostics and assessment of business-IT alignment strongly rely on their input data - models, specifications, and other documents that describe an organization “As-Is”. The quality of this input data is one of the main factors affecting the applicability of EA approaches.

Problem: Research approaches in EA are particularly sensitive to input data quality. In practice, organizations cannot meet the high requirements that researchers define for the input data (e.g., data models, business process models, IS documentation, etc.). Often such data is incomplete or does not exist at all. This prevents the innovative research approaches from being adopted by practitioners (Figure 1).

In this work we do not encourage the organizations to improve their process documentation in order to benefit from innovative research. In contrast, we claim that researchers themselves can significantly improve the applicability of their approaches. In this article we discuss the guided implementation that allows a researcher (or a group of researchers) to build up necessary input data based on the documentation and other information sources available in the organization.

Hypothesis: We believe that using the build-up process, it is possible to increase the applicability of the research approach and, in spite of the initial absence of input measurable parameters, to deliver meaningful results to practitioners.

The approach to measure the fitness relationship between business and IT in organizations presented in (Etien & Rolland, 2005) is an example of an EA approach developed in academia. This approach addresses the problem of business-IT alignment: it defines metrics to quantify the fit between the business of an organization and the IT systems that support it. Metrics application (the process called here and below the fitness measurement) allows organizations (i) to identify precisely the aspects of business (business goals, activities, and so on) that are not supported or ill-supported by the existing IT and (ii) to specify strategies to improve business-IT alignment.

Method: In this work, we present a case study that validates our hypothesis on a practical example. The subject of our study is the fitness measurement approach proposed in (Etien & Rolland, 2005). We apply this approach to a project of business-IT alignment assessment in a mass retailer company - the ABC-Supermarket (by the agreement with the company, its real name will not be disclosed). To increase the applicability, we define a process that builds up required measurable parameters based on the available documentation and other information sources.

Case Evaluation: Our experience shows that small companies (10-50 people, up to 20 processes and applications) typically have no difficulties providing the information required for business-IT alignment assessment. Among the reasons, we can highlight the following: process and information system landscapes of such companies are not too complex and kept under control; the roles of data and process owners are well defined and can serve as trustworthy information sources. This is not always the case for the big organizations with hundreds of applications and processes on place. In such organizations the problem of inconsistent or missing data becomes a serious threat for business-IT alignment assessment. Thus, the bigger an organization, the worse applicability of the fitness measurement approach can be expected.
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