Dialogical Action Research for Better Enterprise Architecture Implementation

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Abstract

Business-IT alignment has been studied for quite some time but it is still a key concern for IT executives. Traditional approaches may have been successful in the past, as researchers have been studying business-IT alignment concerning its impact on organizational performance or its antecedents. However, the question remains: "how to provide an easy and quick way of achieving and sustaining Business-IT alignment?"
Enterprise Architecture implementation under a Business Process Management approach may be a useful way of looking into good practices to achieve and sustain business-IT alignment. This work emphasizes the adoption of Dialogical Action Research as an adequate methodology to improve theoria and praxis for a better enterprise architecture implementation. Supported on reflective one-on-one dialogues between researcher and practitioner, dialogical action research acknowledges the important role and contributions of the latter for enterprise architecture implementation when compared with the modest contributions from academia.
Emerging from many years of practice, a particular praxis is under examination in this work particularly regarding the development of an organizational competences model considered as an important piece for enterprise architecture implementation. Such model fosters the discussion of the business strategy while making clear the interrelations among competences and more explicit the business model.
From a dialogical action research, as work is carried out, recommendations will be issued to improve consulting praxis and inform theoria while solving real world problems in the course of enterprise architecture implementation at municipalities.

Keywords: dialogical action research, enterprise architecture, organizational competences model, Business-IT alignment.

INTRODUCTION

Organizations have been relying more and more on computers for their daily operations. A more competitive marketplace, changing at a rapid pace, is requiring new ways of aligning information systems and technology with the business so activities like planning or decision making can be better supported to improve organizational performance.

Either studying the impact of business-IT alignment on organizational performance (Kearns and Lederer 2000; Tallon and Kraemer 2006) or the antecedents of business-IT alignment (Reich and Benbasat 2000; Kearns and Sabherwal 2006), considerable research has already been done over the past two decades regarding business-IT alignment (e,g., Burn 1996; Chan, Huff et al. 1997; Sabherwal and Chan 2001; Denford and Chan 2007) specially since the conceptualization provided by Henderson and Venkatraman (1993) with the Strategic Alignment Model (SAM).

However, despite all the research efforts, achieving and sustaining business-IT alignment remains quite a challenge particularly in turbulent environments like the ones organizations operate nowadays. More flexibility and agility is required now from organizations in meeting business expectations. In addition,

issues such as complex organizational settings, limited resources in SMEs or outsourced IT remain to be addressed in research on alignment (Silvius 1999).

So far, both academics and professionals have identified business-IT alignment as one of many benefits from enterprise architecture implementation but research is scarce not only on how that happens but also on empirical evidence to support what seem to be reasonable explanations (Tamm et al. 2011). Nevertheless, organizations are putting significant efforts on enterprise architecture and business-IT alignment has even been pointed out as a key objective, in fact, the most quoted objective for doing enterprise architecture (Obitz and Babu K, 2009). As an outcome of enterprise architecture, business-IT alignment is expected to work as an underlying enabler of organizational benefits.

Some well known frameworks as TOGAF or FEAF have been quite used for enterprise architecture. One important question is how to use these or other frameworks for enterprise architecture implementation so, as a possible outcome, business-IT alignment can be achieved and sustained in effective ways (Malta and Sousa 2010). Among several approaches, the ones that use methods, techniques, and tools under a business process management orientation may be promising (Indulska et al 2006; Reijers 2006).

As a set of models for getting a coherent and comprehensible picture of the enterprise (Vasconcelos et al 2005), enterprise architecture is an essential organizational strategic element (Vaidyanathan 2005) where it is important to know the place of the business processes and which ones belong to the scope of a given project (Coelho 2005). Looking at a specific approach that comes from years of consulting practice (Coelho 2010), models for organizational competences, motivation, stakeholders or continuous improvement have come under analysis in our research. In a team work effort, while developing a shared understanding of what is the mission and vision of their organization, top and middle managers come up with an organizational competences model in a short period of time, usually three days. We want to know what makes this approach so effective in some of the adopted practices. On the other hand, the approach may benefit from research contributions related to enterprise architecture implementation. This is something worth to consider for action research.

DIALOGICAL ACTION RESEARCH

Action Research "produces highly relevant research results, because it is grounded in practical action, aimed at solving an immediate problem situation while carefully informing theory." (Baskerville 1999). A five stage, cyclical process is the most common used one for action research: diagnosing, action planning, action taking, evaluating and specifying learning (Susman and Evered 1978). In fact, it is basically an iterative process with two clearly distinct stages (Baskerville and Myers 2004):
• A diagnostic stage that involves the researcher and the subjects of the research in a collaborative analysis of the social situation for the formulation of theories;
• A therapeutic stage that involves collaborative change to make changes and study the effects.

Action research usually puts the researcher in a helping role with the practitioner clearly showing the primacy of theory and the researcher as "the" expert. However, in the case of enterprise architecture development, the academic activity has been modest when compared to the practitioner one. In the enterprise architecture domain, the researcher should accept the practitioner as an equal, speak the practitioner's language and see the world through the practitioner's eyes. This balance on the importance of theory and practice requires a dialogue between equals, a new form of action research called dialogical action research.

Using reflexive dialogues between the practitioner and the researcher in an iterative way, dialogical action research leads to improvements in both researcher and practitioner's expertise (Figure 1):
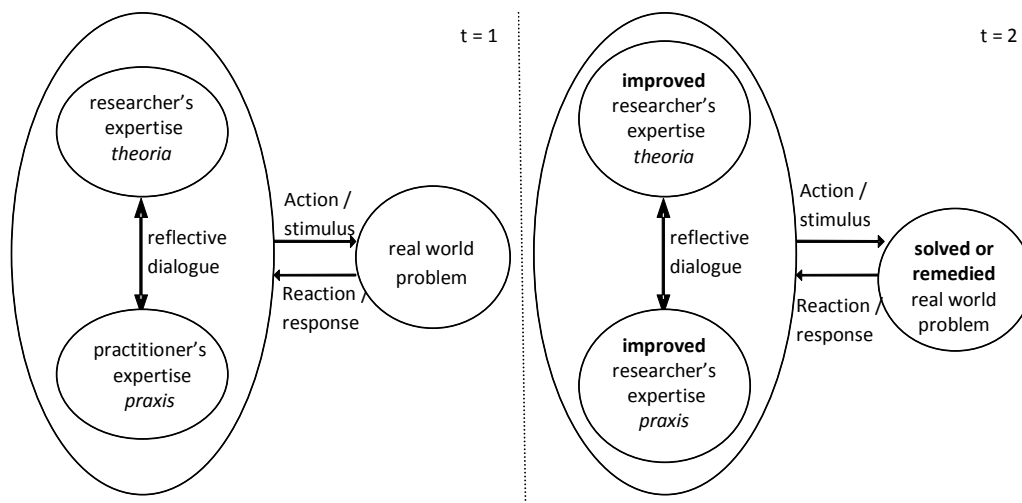
Figure 1: Dialogical Action Research (Adapted from Mårtensson and Lee 2004)

Ultimately, improved theoria and praxis coming from these reflexive dialogues should result in better world solutions, in our case, in better enterprise architecture implementations.

Data for this research process may come from multiple sources:
• Annotations in documents from the organization;
• Field notes from direct observation of the practitioner while doing an organizational intervention;
• Own documentation from interviews.

FIELD WORK

The praxis here under study for enterprise architecture, MLearn, is a process-oriented one that has been followed in different types of organizations: hospitals, wine regulatory commissions or municipalities to name a few. At the wine regulatory commission, the human resources management has particularly benefited from this organizational intervention resulting in its better alignment with organizational strategy (Malta and Sousa 2011). At a given municipality, among other results, paper has been significantly removed from the relationship with the citizens. Regardless of how far the enterprise architecture development has gone in the several interventions, one of the main results is the organizational competences model.

Organizational Competences Model
The importance of the organizational competences model and how to get to it in an effective way can be seen in a project that took place in a set of Portuguese Municipalities under the sponsorship of the Douro Inter-municipal Commission involving nineteen municipalities.

To achieve good results in a reasonable period of time for so many municipalities, it was quite important to have, as a reference, an organizational competences model developed in another municipality by a team of about twenty persons, involving president, city councilmen, department directors and section managers.

Having that reference, the consulting intervention at Douro Inter-municipal Commission region, involved an average of ten decision makers at each municipality, mainly focused on the following set of objectives:

- retrain involved human resources;
- homogenize municipalities' organizational model;
- ensure administrative modernization and simplification;
- make efficient and improve the quality of services provided.

The goal, once assured the presence of all team's decision makers, was to get to a standard organizational competences model for a municipality. Even if each municipality has some different characteristics, similar requirements and competences exist. Using and comparing each working model, similar organizational competences were identified and put together, in a unique framework. Table 1 present some of the core and support organizational competences that can be found in a organizational competences model that may work as standard for a municipality:

Table 1: Organizational Competences Model

Core Organizational Competences	Support Organizational Competences
Manage Relationships with External Entities	Manage Litigation and Legal Services
Manage Relationships with Citizens	Ensure Local Authorities Operations
Promote Municipality	Manage Financial Resources
Manage Requests from Citizens and Institutions	Plan, Control and Manage Municipality
Coordinate Civil Protection	Ensure Continuous Improvement
Promote and Support Social Development	Define and Control Municipality Strategy
Contribute to Public Health	Manage Human Resources
Promote Economic Development	Manage Information Systems and Technology
Manage Water and Sanitation	Manage Municipality Buildings
Manage Waste Collection	Manage Municipality Image
Manage road networks and public spaces	Manage Information Resources
Manage Gardens and Green Spaces	Support Organizational Competences
(…)	(…)

Once the standard organizational competences model was obtained, each municipality carried on with the modeling of each organizational competence in terms of activities, tasks and operations mapping them to the organizational chart in terms of responsibilities.

When the motivation, technological skills, and organizational knowledge of people in the organization are more homogenous and there is also a large sense of the interrelated competences, the organizational competences modeling speeds up toward two major outputs:
- Indicators and goals for each organizational competence;
- Training plan to develop the required skills in the human resources available for each organizational competence;
- Improvement measures according to the objectives defined for each organizational competence.

Data Collection
As previously pointed out in the dialogical action research section, data is being collected from multiple sources. Apart the annotations from the praxis documentation regarding the project and field notes from direct observation of the practitioner in action, two other sources will be quite important:
- questionnaires and interviews to the people involved in the project;
- reflexive dialogues with practitioners from consultant companies.

To develop the questionnaires and guide the interviews, some other existing instruments will be taken into consideration such as TOGAF checklists as well as questionnaires to identify organization's strategic

aspects (Jeston 2006), assess process orientation (Reijers 2006) or business-IT alignment maturity (Luftman 2000).

OUTCOMES SO FAR

From the field work already done, we can say that the organizational competences model seems to foster teams' predisposition to discuss business strategy once identified the organizational competences (Indulska et. al 2006). The development of an organizational competences model, as part of enterprise architecture implementation, makes clear the competences interrelations and more explicit the business model.

Three points in this praxis should be highlighted:
• Practitioner: how well is conducted the interaction among the different stakeholders;
• Tools: how easy is to visually support the interactions and contributions from the participants;
• Language: how easy is to learn the modeling language.

Consultancy interventions at the municipalities in Águeda and in Douro, also showed various issues to consider for analysis regarding the success of the praxis:
• Top and middle managers participation, something not always easy to assure, especially in large organizations;
• Team's dimension: the smaller the team, the quicker the decision;
• Time and period for intervention: usually three working days are required to get an organizational competences model and sequential days seem to work better;
• Documentation: documents should be updated and improvement suggestions recorded:
• Reutilization: capitalization on previous developed organizational competences model.

CONCLUSIONS AND FURTHER WORK

The challenge to achieve and sustain Business-IT alignment strategies remains. The Strategic Alignment Model, Zachman framework and the Computer Integrated Manufacturing Open System Architecture (CIMOSA) are just some well known of many contributions to address that challenge.

Emerging from many years of practice, a praxis as Mlearn in under examination to be improved while informing theory. This praxis seems to help internal communication and better integration of methodologies and tools as well as reliability and confidence in information system resources for business-IT alignment.. We need to understand how this praxis works and what can be improved and could make it complete and successful in enterprise architecture implementation.

As a main result from this research, a set of recommendations will be issued so Mlearn become a better praxis to achieve and sustain business-IT alignment while implementing enterprise architecture. Those recommendations will also inform theory so researchers can take into account new approaches to enterprise architecture, especially the ones grounded on process orientation.

At the end, as expected while using dialogical action research, consultant companies get better praxis, researchers get better theoria and municipalities get better enterprise architecture implementation.

Acknowledgments

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