



INTEGRATED BUSINESS AND TECHNOLOGY MANAGEMENT

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KEYWORDS

Business development, business design, technology governance, technology architecture.

ABSTRACT

This research aims to develop and validate an integrated methodology capable of linking management techniques of business, organization and its supporting technologies. This methodology will provide a better understanding of the business model, organization structure and technology architecture contributing to its development. The resulting management technique will enable executives to analyse, define, communicate and optimize the organization's structure contributing to its development. They will also assist the operations managers to develop and optimize the technological architecture necessary for achieving the business' objectives. This research project goal is to create a management approach building upon recent contributions to the area and using an incremental building process that involves validation with international specialists and empirical action research. The expected result of this research project is a methodology that will overcome existing shortcomings that prevent an integrated way to manage business and technology.

LITERATURE REVIEW

Reviewed articles from areas of business management and technology management were classified into two dimensions: business and technology. Each dimension was further sub-divided in two sub-dimensions. The business dimension was split in two sub-dimensions: i) management practices, techniques or methodologies; ii) conceptual models or frameworks. The second dimension, technology, was also split in two sub-dimensions: i) management practices, engineering techniques or development methodologies; ii) design models or conceptual frameworks. Finally, the articles were analysed taking into account the integration aspects of the proposed models and methodologies.

Management Approaches

The existing methodologies and models for business and technology management practices deal with different elements hindering their integration. Kaplan and Norton (2005) state that business management systems are

disconnected among themselves. They presented the results of a survey showing that 60% of companies do not link budgeting to strategy and 67% of HR and IT are not aligned with business' strategy. Technology management practices are also lacking of alignment with strategy. For many years business and information technology alignment has been one of foremost topics of professional and academic publications. However, no practical solution was been developed yet. So, it remains as an open issue and it is the main concern of IT managers (Luftman 2009).

The research on business models have been extended lately and this modeling technique also attempts to solve this alignment problem (Demil and Lecocq, 2010; Casadesus-Masanell and Ricart, 2010).

On the technology side, business/enterprise architecture frameworks were devised to cover perspectives or viewpoints, according to ISO/IEC 42010:2007. However, the resulting conceptual frameworks do not establish how the perspectives interconnection can be performed and usually do not show what elements or components could make such connection (Winter, 2006; Boucke, 2008).

Authors that analyzed the most cited in architectural frameworks in the literature (e.g. Object Management Group / Business Architecture Special Interest Group – OMG BASIG; The Open Group Architecture Framework – TOGAF 9; US Department of Defense Architecture Framework – DoDAF e The Zachman Enterprise Framework) agree that none of them is complete (Glissmann and Sanz, 2009; Leist and Zellner, 2006). Each framework misses parts from the standpoint of the general model requirements and its components relationship. With these limitations, modelling together business and technology remains difficult.

RESEARCH OBJETIVES

This research has the objective of developing and validating business management approach that is capable of linking business, organization and support technologies. A major component of the sought approach is its modelling features. It is a proposal of one meta-model to do the connection with all other modelling practices. The main difficulty to overcome is to identify the gaps in current business and technology frameworks that prevent the conceptual integration of



perspectives and impede an effective combination of business and technology development. Business modelling is therefore at the core of the sought methodology.

The application of such methodology will enable companies' practices that have the potential of giving companies a way to be more assertive in implementing their strategies through better design of business structures. Companies will be able to reduce costs by doing organizational structure optimization that take into consideration people and technology in a combined way. Companies will also find cost-saving opportunities in technology spending using this integrated tool that defines accurate business requirements for technology applications.

RESEARCH DESIGN

The objective of this research is to develop and validate a new business management approach, supported by a meta-model that integrates the various models or views of a business. To achieve this goal the research is designed to be implemented in three phases: i) problem analysis, ii) solution development and iii) validation of the solution. A review of literature is planned for analysing the problem of fragmented management process and to be the inspiration of first solution and a qualitative research methodology is established for improving and validating the solution (new management approach). Qualitative research is more appropriate because it seeks to study a particular subject in depth as opposed to quantitative whose focus is the numerical generalization. Qualitative research methods are "designed to help researchers understand the social and cultural contexts within which people live" (Myers, 2009).

RESEARCH PLAN

The research project can be organized into three stages:

Stage 1) Doctoral course (12 months): This stage includes attending the subject courses of the doctoral program on Information Systems and Technology at Universidade do Minho. This stage has been started in October 2009 and is now being finished with the presentation and defence of a research proposal that includes a literature review and a research plan. The literature review focused on frameworks, approaches, methods and techniques for business modelling.

Stage 2) Methodology creation and validation (24 months): The methodology creation and validation will be carried out using an iterative approach. Each iteration will comprehend conceptual development and a validation of the outcome. The succession of iteration will enable both the improvement and refinement of the

sought methodology. The first version of the methodology will be produced based on a literature review of stage 1. Further versions will result from the conclusions reached in the validation procedures.

Several types of validation are planned: i) application of the methodology to typical examples such as those used to demonstrate the feasibility of modelling approaches and frameworks and comparison of results; ii) presentation of examples to an international panel of experts from academia and consulting firms; iii) application of the methodology in real business development situations in an action-research setting.

The methodology creation involves approaches described as conceptual analysis (Casadesus-Masanell and Ricart, 2010). The validation uses procedures typical of design research approaches (Hevner et al., 2004) such case study (Hafner and Winter, 2008) and action research (Lehtola et al., 2009).

Stage 3) Dissertation writing submission and defence. (12 months): As result of the work being carried out, several articles and conference communications are planned: results from literature review; rationale for the methodology and integrated modelling approach; intermediate results from methodology validation; final results.

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