

The E-Business Transformation Framework for E-Commerce Control and Monitoring Pattern

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INTRODUCTION

A determinant factor in the continuous process of transforming a traditional business environment into an innovative and lean business services oriented environment, is the role of: 1) the e-Business Transformation Manager (e-BTM); and 2) the needed e-commerce/e-business transformation framework. Such a framework should support to govern, automate, trace-monitor and control the e-business transformation project's artifacts and outcomes; the same framework can be used later in the production phase to monitor the finalized e-business system. Another important element in transforming a traditional business environment and its business information system into an innovative and controlled e-business platform is the role of governance and traceability of atomic e-business services; this capacity should be crafted in an e-commerce/e-business transformation framework that offers an adaptable architecture pattern (Trad, 2015b).

The e-BTM's role is crucial for the implementation phase of the complex e-business/e-commerce transformation projects (e-BTP). Where his or her (for simplicity reasons the authors will use his/he in further text) decisions can be made in a just-in-time manner using outputs from existing monitoring and logging systems, to govern (or control) the e-BTP. Unfortunately a holistic control and monitoring module for such e-BTPs does not exist and are very complex to implement. A decision making environment can also be used in the e-commerce production phase which comes after the finalization of the implementation phase of the e-BTP. This research phase focuses on the control and monitoring module for the Selection management, Architecture-modelling, Control-monitoring, Decision-making and Training management Framework (SmAmCmDmTmF for simplification, in further text, the term *Environment* will be used), that supports various aspects of e-BTP's activities. In this chapter the authors present a set of e-commerce/e-business control and monitoring managerial and technical recommendations, as well as a set of reusable patterns in the form of reference architectures (ISO, 2000; ISO, 2007). The *Environment* puts forward a solution for an overall control and monitoring of the e-system's resources.

The control and monitoring component's role is of central importance for the implementation of atomic or micro services based e-BTPs; unfortunately an enterprise control and monitoring pattern for e-BTPs does not exist. A control and monitoring pattern or architecture reference model can be also used in the enterprise's production maintenance activities, which come after the finalization of the implementation phase of an e-BTP.

BACKGROUND

E-Business refers to various types of businesses that are conducted using different types of electronic media and avant-garde services oriented technologies; where the most common form is the business that makes its transactions and revenue via the web (e-business, 2014); therefore there is a need for robustness that is supported by the control and monitoring module. The development and evolution of e-business related application fields like e-commerce are a fundamental factor for any e-economy and their usage makes an important difference between competing companies. The application of e-business related technologies increases savings in the building of global e-business infrastructures; and they are also an enabler for distributed control/monitoring systems (Trad & Kalpić, 2011). E-business projects are very difficult to implement, because of their complex and holistic nature, where the complexity is encountered in its implementation phase (Watt, 2014; Gudnason & Scherer, 2012). The technical implementation phase of an e-BTP is the major cause of high failure rates; therefore e-BTMs' qualifications should encompass many types of skills that are needed for the automation in real-time of e-business related environments (Willaert, 2001). The *Environment's* control and monitoring component supports the e-BTM in the process of controlling, evaluation and management of complexity in the e-BTP's implementation phase.

The global topic's final research question (RQ) or hypothesis #1 is: "Which e-business transformation manager characteristics and which type of support should be assured at the implementation phase of an e-business transformation project?". The targeted business domain is any business environment that uses frequent transformation iterations. For this phase of research the sub-question or hypothesis #4 is: "What is the impact of the control and monitoring architectures on e-enterprise architecture and e-business transformation projects?"

FUTURE RESEARCH DIRECTIONS

Most of e-BTPs fail and the probable reason for such a de facto situation is the complexity of its implementation phase. The classical "research & development" approaches to solve such problems are too much based on the scoping of topics (or questions) and the over simplification of such complex and holistic problems. The future activities of the *Environment's* "research & development" process will focus on a new component that is the financial aspects of e-BTPs.

THE ENVIRONMENT

The authors have developed the *Environment* concept that is based on the fact that only around 12% of business companies terminate innovation-related e-BTPs (Tidd & Bessant, 2009). It is a fact that organizations which successfully finalize e-BTPs have a substantial competitive advantage over other companies in terms of e-business and financial performance (Tidd, 2006). To support such e-BTPs the *Environment's* control and monitoring module should include the following characteristics: 1) that it has to support real world e-BTP's control and monitoring interfaces; 2) to support services level management; and 3) that it proposes a balanced set of e-business/e-commerce control and monitoring managerial and technical recommendations.

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