


Chapter 3

An Applied Mathematical Model for Business Transformation and Enterprise Architecture: The Business Engineering and Risk Management Pattern (BE&RMP)

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ABSTRACT

This chapter on an optimal and adaptable enterprise architecture for business systems is one of a series of research chapters on enterprise architecture and business transformations. This one is about estimating the risk for transforming a business environment. It is a conclusion of many years of research, architecture, consulting, and development efforts. The model is based on an applied holistic mathematical model (AHMM) for business transformations. In this chapter, the CSFs are tuned to support the intelligent architecture concepts for business integration in the form of an applied pattern that is also a part or a chapter in this research series. This chapter is related to the feasibility and prototype of the business engineering and risk management pattern (BE&RMP) that should (or shouldn't) prove whether business transformation projects can optimize enterprise business capabilities and how microartefact implementation can offer a sustainable enterprise business system.

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INTRODUCTION

The BE&RMP is based on research, design and development on: 1) business and technical architecture related to case studies; 2) EA and risk mitigation/optimization processes; 3) continuous business and technical transformations; 4) the AHMM4RM; 5) software architecture; 6) business architecture and implementation; 7) financial/audit intelligent analysis (and not looting initiatives); 8) decision making systems and the use of AI; 9) standardized architecture methodologies; and 10) integrated EA as a central concept. The BE&RMP is based on an authentic and proprietary research method that is supported by a qualitative holistic reasoning module that is explained in this research and development project management (Trad & Kalpić, 2019b). The BE&RMP is an AI/empirical process that uses a natural language environment, which can be easily adapted by the architecture teams (Myers, Pane & Ko, 2004; Kim & Kim, 1999; Della Croce & T'kindt, 2002; Trad & Kalpić, 2017a, 2017b, 2017c, 2017d, 2019b; Gunasekare, 2015). The BE&RMP is implemented to check the feasibility of the proposed pattern, using the AHMM4RM and CSFs approaches. The BE&RMP supports BTP and Enterprise Architecture Projects (EAP) (or simply *Projects*). This chapter is supported mainly by an adapted business case from the insurance domain (Jonkers, Band & Quartel, 2012a). The uniqueness and market lead of the author's proposed AHMM4RM based solutions, promotes a holistic cohesive enterprise architecture, design and implementation model that supports complex *Projects* integrations using a targeted and genuine Proof of Concept (PoC); in this case the BE&RMP's experiment (Farhoomand, 2004). The implementation of the BE&RMP can result in an intelligent Business Management System (iBMS) that uses the iSDMS that can be used in a day to day business, architecture and technology problem solving activities (Trad & Kalpić, 2019f, 2019g; Trad, 2019a). In this chapter, the proposed solutions are supported by a real-life case of a *Project* methodology in the domain of EA that in turn is based on the alignment of various business, architecture and technology standards and avant-garde risk mitigation methodologies. The “i” prefix, which will be used later in this text, does not stand just for the common intelligent agile environments but for a distributed and holistic intelligent architecture concept's approach that identifies this work's background; and “a” will stand for artefacts. This Research and Development Project's (RDP) main focus is on: 1) the BE&RMP's integration with the iSDMS; 2) the use of the existing EA frameworks; 3) *Projects*; 4) selection of the *Project* manager's profile; 5) AHMM4RM; 6) AI; 7) holisms and global concept; 8) risk management; 9) The intelligent Strategic Decision Making System (iSDMS); 10) intelligent Strategic Knowledge Management System (iSKMS); and 11) innovation iterative approaches. Using the scholar engine, within Google's online search portal, in which the author combines the previously mentioned keywords and key topics; the results have

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