Chapter 15
Business Transformation Projects:
The Role of a Transcendent Software Engineering Concept (RoTSEC)

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ABSTRACT

The hyper evolution of technologies is a major problem for transformation projects because such projects take a long time to terminate. That is why there is a need to find transcendent technological artefacts for all technology generations. The role of a transcendent software engineering concept (RoTSEC) is central for implementation projects in general and is also especially crucial for business transformation projects (or simply projects) because transformation phases incur major changes in the existing sets of the archaically defined requirements, development, and platform models. Software engineering (SE) is probably the riskiest part of a project because it consists of many related complex factors and dependencies, for example, the need for SE's artefacts to interact between various actors like project management, business users, business architects, implementation developers, and other project actors.

INTRODUCTION

This chapter keywords clearly show the complexity and the need of having a holistic *Project* approach in order to scope its strategic goals and objectives. That is achieved by defining a generic and standardized Enterprise Architecture (EA) based RoTSEC that can be used in any final application (or business) domain, like finance, education, industry, finance, or any other. Where RP's main concerns are reversing common Source Code Components (SCC), business models, algorithmic codebases, and data structures refinements. These operations are carried out mainly in phases B and C, as shown in Figure 1. An RP can be conducted using a polytechnical mathematical (or simply a Polymathic) model or the AHMM4SE,

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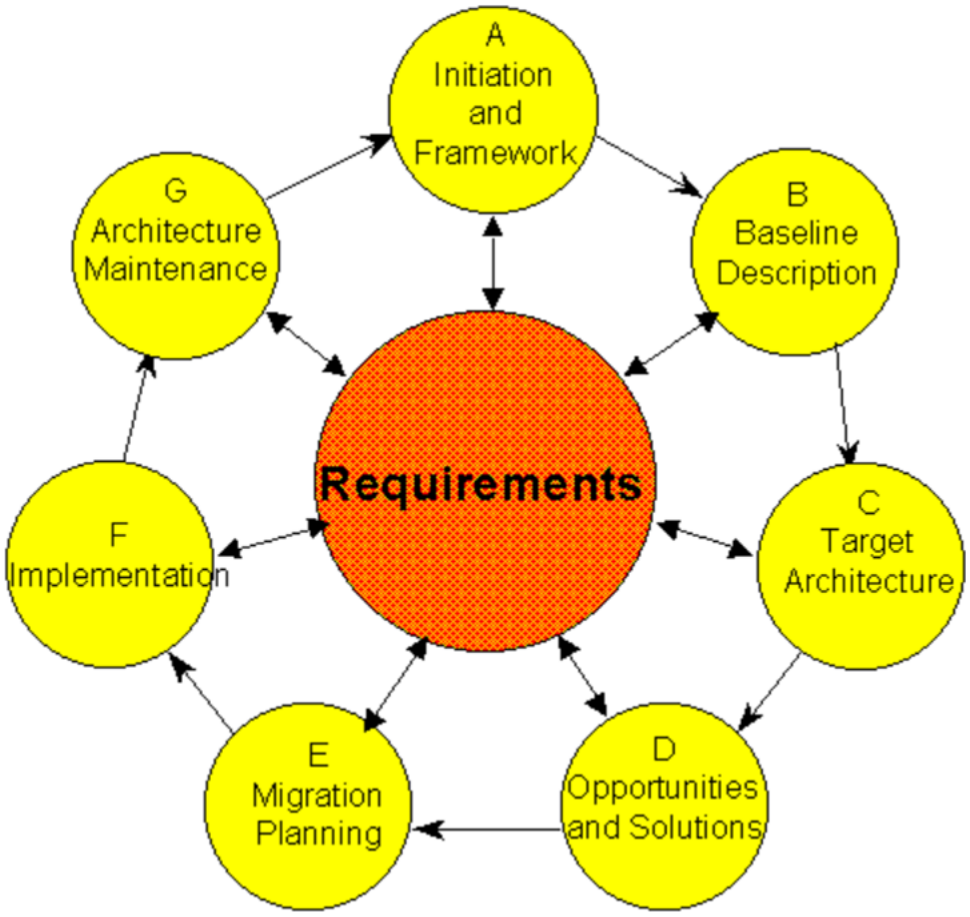
Figure 1. The architecture development cycle
Source: The Open Group (2011a)



which uses a transcendent approach, that refers to surpassing the complexity of heterogenous approaches and ensures its integrity.

The proposed Polymathic AHMM4SE, supports the iterative transformation of a legacy system, using standard methodologies, like The Open Group's (TOG) Architecture Framework's (TOGAF) Architecture Development Method (ADM) as shown in Figure 1.

Like in all Information and Communications Systems' (ICS) related development works, the recommended approach is a cyclic one, which is based on *Project's* implementation phases, that includes the SEP and RP. RPs are performed mainly for SCCs that include: 1) Refinement; 2) Development and Operations (DevOps); 3) Automated tests and qualifications; and 4) Modelling and design activities. The RoTSEC proposes an efficient use of RP, which might face complexities due to: 1) The implementation of complex and heterogenous software components; and 2) Their maintenance (Koenig, Rustan, & Leino, 2016). In this chapter the RoTSEC was applied on a concrete *Project* in the form of a Proof of Concept (PoC), that is related to a leading *European Bank*. The mentioned *Project* was mainly used to support an SEP/RP transformation process of the Bank's legacy framework which is based on an International Business Machine (IBM) Mainframe and Java Extended Edition (JEE) 1st tier concept and architecture.