Chapter 15
Advancing Cybersecurity for Business Transformation and Enterprise Architecture Projects: Deep Learning Integration for Projects (DLI4P)

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ABSTRACT

In this chapter, the author bases his research project on his authentic mixed multidisciplinary applied mathematical model for transformation projects. His mathematical model, named the applied holistic mathematical model for projects (AHMM4P), is supported by a tree-based heuristics structure. The AHMM4P is similar to the human empirical decision-making process and is applicable to any type of project; it is aimed to support the evolution of organisational, national, or enterprise transformation initiatives. The AHMM4P can be used for the development of the cybersecurity subsystems, enterprise information systems, and their decision-making systems, based on artificial intelligence, data sciences, enterprise architecture, big data, deep learning, and machine learning. The author attempts to prove that an AHMM4P-based action research approach can unify the currently frequently-used siloed MLI4P and DLI4P trends.

INTRODUCTION

In this chapter, the author presents a Project based generic concept for decision making that is based on DLI4P; where the AHMM4P manages various types of algorithms. A transformation depends on the capacities of the decision-making system and the profile of the Business Transformation Manager (or simply the *Manager*) and his team; who are supported by a holistic framework (Trad & Kalpić, 2020a).

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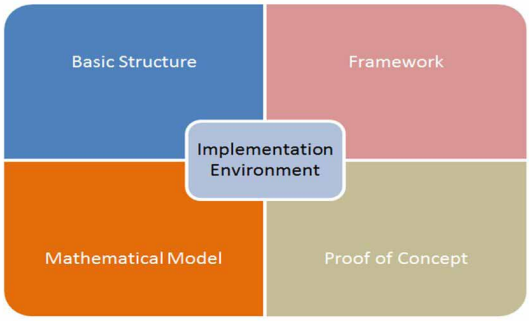
The role of Deep Learning Integration for Projects (DLI4P) and the AHMM4P is essential for managing various type of algorithms in a transformation project. All the author's research publications deal with Business Transformation Projects' (or simply a *Project*) complexity as well as the use of underlying Decision-Making System for Projects (DMS4P) and Enterprise Architecture Integration for Projects (EAI4P). The author's framework promotes *Project* technics to ensure success, by: 1) modelling artefacts; 2) implementing Machine Learning Integration for Projects (MLI4P) and DLI4P components; 3) EAI4P support; 4) the use of a Generic Project Pattern (GPP) as an interface; and 5) using complex algorithmics.

Figure 1. EAI4P cycles synchronize with Project resources



As shown in Figure 1, the implementation of such *Project*s requires significant knowledge of EAI4P. GPP handles DLI4P calls and offers: 1) a generic data architecture; 2) an interfaces; and 3) data and modules modelling. GPP is a part of the Selection management, Architecture-modelling, Control-monitoring, Decision-making, Training management and Project management Framework (SmAmCmDmTmPmF, for simplification in further text the term Transformation, Research, Architecture, Development framework or *TRADf* will be used). As shown in Figure 1, *Project* resources interact with all the enterprise's (or simply an *Entity*) architecture phases, using the data Building Blocks for Projects (dBB4P) or the holistic brick (Trad & Kalpić, 2020a). GPP is MLI4P's main interface and the trends of using DLI4P for 2021, is tremendous, as shown in Figure 2 (Kapoor, 2021).

Figure 2. The growing role of MLI4P and DLI4P on Hyperautomation (Kapoor, 2021)

AHMM's Application and Instantiation for a Specific Domain

$$Domain = \text{Geopolitical Analysis (GA)} \quad (14)$$

$$\text{AHMM}(Domain) = \bigcup \text{ADMs} + \text{MMs}(Domain) \quad (15)$$