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主論文の要旨

論文題目 Adaptable Enterprise Business and Operation Architecture
(適応型エンタープライズビジネスおよび
運用アーキテクチャの研究)

氏 名 ALOLAYAN Nada Ibrahim S

論文内容の要旨

In this day and age, the world's most valuable commodity is Data. Digital transformation is connecting the world, and the massive data collected has excellent potential to improve many aspects of modern life endeavors. Today's organizations are information-driven, they are faced with many challenges such as the rapid change in technology and the constant growing competition, but the main challenge will always be to align and integrate loads of shared information strategies to a common business and technology context.

In this dissertation, we conducted a study on state-of-the-art enterprise architecture management frameworks (EAMF) to create our definition of an adaptive EA and its key features and presented an evaluation of EAMF from the point of view of digital transformation. To close the gap between business and IT, and to achieve integration with emerging services, we need to employ enterprise architecture management (EAM). However, the question still rises on how to achieve adaptability and which enterprise management system is suitable for the organization each time a change is needed, and an architecture process is evoked. The evaluation is useful for choosing a suitable EAMF for digital transformation.

In our second study, we addressed the business and operation architecture by investigating the change management process of the Enterprise Architecture (EA), we used TOGAF and its modeling language ArchiMate as the EAM framework of choice to improve adaptability.

We hypothesized that employing specific standards and documentations could aid the change management process and improve the integrity of the change in every stage. Our choice was the concept of operation document (ConOps) because it addressed and described the change in three distinctive sections: current state of the system, justifications for change, and the concept for the proposed system. We pointed out that these sections contribute to the motivation extension pattern of the ArchiMate modeling language, and the higher levels of the architecture development method (ADM) of TOGAF. However, since ConOps standard documentation does not have a specific development method, we proposed a method to create ConOps using ArchiMate to benefit the adaptive EA.

Considering the importance of the healthcare industry and the emerging technologies affecting e-health systems and the need to review a case study of an enterprise system, we found it crucial to provide the means to review and improve the planning and organization of e-health systems, especially in the early stages of design.

Health care systems are classified as enterprise information systems because of their size and complexity. Therefore, the design of frameworks and enterprise architecture can be used to reduce complexity and increase the adaptability and resilience of the healthcare information systems. In this dissertation, we reviewed the latest digitization report of the Indian health care system by the Mckinsey global institute, and we were able to assess the completeness of the requirements and provide suggestions to aid the transition process.