ABSTRACT

ANALYSIS OF BUSINESS ARCHITECTURE BASED ON VERIFICATION AND VALIDATION OF BUSINESS PROCESS MODELING USING THE FORMAL METHOD (CASE STUDY: HIGH EDUCATION INSTITUTIONS)

By

Den Yusuf Ramdhani

SID : 1202160105

Technological developments have changed many things, from the release of physical work to the transformation in the development of business processes to the management of a company. The concept of enterprise architecture (EA) can be a solution for corporate transformation so that business functions can be integrated into the IT landscape. However, not many companies can properly implement EAs. The main problem can be to model, manage and maintain it.

EA consists of several domains. One domain that plays an important role in the domain of business architecture. The business architecture has the task of coordinating other areas with the main element of modeling business processes. What can support the understanding of business process modeling depends on its quality. The quality of business process modeling in the BPMN modeling language can be checked and validated. Formal methods help to achieve semantic conditions so that business processes can be validated and syntactically checked.

The formal verification and validation of the modeling can be done using Petri nets. With the Petri net, it can be determined whether the process is flawless or not. The sound process can be completed when the process can be completed and completed correctly and there are no *transition*s from dead activity. In this study, the results of an improved model of business processes in the HR function of higher education institutions are developed. By transforming the business process from BPMN into the Petri network model for non-compliant property analysis and creating an improved process model that is adapted to the modeling guidelines and compared with the reference model.

Keywords : Verification and Validation, Business Architecture, Business Process Model, Petri Nets