

ABSTRACT

The Center for Standardization and Industrial Services for Materials and Technical Goods or Balai Besar Standardisasi dan Pelayanan Jasa Industri Bahan dan Barang Teknik (BBSPJIBBT) is a Public Service Agency under the Ministry of Industry, playing a crucial role in research, development, and standardization in the materials and technical goods sector. In the context of Industry 5.0, where advanced technology closely collaborates with human capabilities, BBSPJIBBT faces significant challenges in optimizing its information systems. The aim is to improve operational efficiency, enhance service quality, and meet the Electronic-Based Government System (SPBE) standards set by the government.

This research focuses on designing an Enterprise Architecture (EA) for BBSPJIBBT's Testing and Standardization Teams, using the TOGAF ADM 9.2 framework. The main objective is to improve the quality of government administration services and public services through business process optimization and information system integration. This aligns with BBSPJIBBT's mission to promote industrial collaboration, revitalize standardization, and optimize the use of industrial technology.

The research methodology includes an assessment using Architecture Capability Maturity Models (ACMMs) and EA design covering the Preliminary phase to Migration Planning. A comprehensive gap analysis was conducted to identify disparities between existing conditions and desired targets across various architecture domains.

The ACMM assessment results show a score of 1.33, indicating that BBSPJIBBT is still in the early stages of EA development. This score reflects common challenges faced by many government organizations, particularly Public Service Agencies, in adopting EA practices. Nevertheless, awareness of the importance of EA has begun to grow within the organization.

The gap analysis revealed several critical needs, including business process optimization, improved data management, integrated application development, and technology infrastructure upgrades. The complexity of these gaps reflects the

dynamic changes in the business and technology environment, highlighting the urgency for BBSPJIBBT to undergo digital transformation to maintain its relevance and service effectiveness.

The research identifies a critical need to develop integrated information systems, particularly through the development of SIGAP, SIPEJAB4T, and PROFITES applications. A key finding is that the current SIGAP system is only effective for new and repeat order customers, but not for contract customers who still have to place orders manually. To address this, the research recommends implementing a simple CRM system, starting with segmentation of contract and non-contract customers. This will enable more personalized and efficient services, eliminating the need for manual submission and validation.

Key recommendations include implementing a centralized data management system to ensure data integrity and consistency. With a centralized system, BBSPJIBBT can improve efficiency and collaboration, especially in managing customer data as service users. This will enable the organization to be more responsive to customer needs and regulatory changes.

The research also emphasizes the importance of implementing effective change management and service personalization strategies. This will allow BBSPJIBBT to adapt quickly to changes while maintaining focus on specific customer needs in a dynamic industry. The use of technology for automation is recommended to help meet evolving industry demands and ensure more efficient operations.

In terms of technology, the research identifies the need to enhance the technological infrastructure to support current and future workloads. This includes server and storage upgrades and the implementation of scalable cloud services, which will ensure high data availability and rapid data recovery. This strategy reflects an understanding that flexible and scalable infrastructure is an essential foundation for innovation and growth in the digital era.

The Migration Planning phase in this research provides a comprehensive roadmap for BBSPJIBBT's transition to the target architecture. This approach includes investment assessment and project prioritization, reflecting an

understanding that enterprise architecture transformation is a long-term effort requiring strategic planning. The roadmap emphasizes the importance of balancing technological innovation with operational stability.

The proposed Work Package includes developing the SIGAP application by adding customer segmentation to SIGAP, SIPEJAB4T, and PROFITES, integrating SIGAP customer data into SIPEJAB4T and PROFITES, and adding features for ordering laboratory consultation services and reference materials. Implementation of this work package is expected to increase customer satisfaction and enable faster responses to urgent requests.

The proposed EA implementation is expected to improve operational efficiency, service quality, and BBSPJIBBT's SPBE index. Additionally, this research highlights the importance of change management and service personalization strategies in addressing the dynamics of an ever-changing industry.

In conclusion, this EA design provides a comprehensive framework for BBSPJIBBT to optimize its business processes, enhance system integration, and prepare for challenges in the digital era. The results of this research are not only relevant to BBSPJIBBT but can also serve as a reference for other Public Service Agencies in adopting EA practices and improving public service quality. This research also opens up opportunities for further studies on EA implementation in the public sector and its impact on government service efficiency and effectiveness.

Keywords— *Enterprise Architecture, Electronic-Based Government System, TOGAF ADM, Public Service Agency, Standardization Testing*