

ABSTRACT

In today's digital era, effective and efficient data management is very important for higher education institutions. Telkom University, as one of the leading universities in Indonesia, faces challenges in managing complex academic data spread across various units. To overcome these challenges and support the Satu Data Indonesia initiative, this research focuses on the design and implementation of a Data Warehouse at Telkom University. Through a combination approach of Kimball's Nine-Step Method and the SDLC Waterfall development model, this research aims to create an efficient data integration system, addressing issues such as redundancy, lack of data transparency, and integration difficulties that have previously been obstacles at Telkom University. This Data Warehouse implementation includes managing data from various sources including student information, curriculum, and other academic activities, with the aim of improving data consistency and reliability. The results of the testing show that the designed Data Warehouse is able to handle increasing data volumes efficiently, with processing time stability remaining within reasonable limits. In addition, the system achieved a 100% success rate in data validation without data loss or rejection during storage and processing. Overall, this research successfully developed a Data Warehouse that meets the needs of academic data integration at Telkom University, thus supporting more effective and efficient data management in accordance with the Satu Data Indonesia framework.

Keywords: academic data, data warehouse, nine-step kimball, higher education, waterfall model, satu data indonesia