

# Abstract

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## **Impact of Decision Support Systems on Effectiveness of Decision Quality Case Study on Transmisr**

Over the past decade, Business Intelligence (BI) has been used by many companies all over the world. A BI tool's function is to help managers to make more informed decisions. While strategic decisions remain to be a big problem due to centralization in the heads of organizations. That is, human behavior related to decision-making is not aligned with the capability of the tools. Using the approach of decision models can help deliver information within a decision framework that better organizes the decision-making process. Using this approach, we can better leverage the capability of BI tools and improve decision productivity in organizations. Many organizations have successfully implemented data warehouses to analyze the data contained in their multiple operational systems to compare current and historic values. Thus, they are able to better, and more profitably, manage their business, analyze past efforts, and plan for the future. When properly deployed, a BI system benefits the organization by significantly enhancing its decision-making capabilities, thus improving both its efficiency and effectiveness. However, the quality of the decisions facilitated by a BI system is as good as the quality of the data contained in the data warehouse – this data must be accurate, consistent, and complete. In this thesis, the research will focus on modeling a business process that can be used to support decision making in the field of maritime transport using data-driven Decision Support System (DSS) and BI. A generalized model has been designed to develop Business Intelligence System (BIS) for any enterprise business. This model was applied on a case study (Transmisr). The results measured and were improving managers' ability to take precise and effective decisions through the use of data modeling. Analytical approach for development of a dynamic model for Data-Driven DSS determining the total process along with methods for measuring and applying a practical case study was discussed and outlined. The model was verified and validated through the assumption of improving decisions by testing its input parameters and values then testing the output values from the system in comparison with statistical results. A sample data from the case study were collected. Using analytical techniques on those data, such as cause effect analysis in order to diagnose the financial losses, verifying the results by using vital fiew analysis, identifying root causes, remedy the cause, then building the business intelligence risk matrix. A software prototype was built and then was measured based on quality measures and its attributes using a questionnaire, a data validation and verification processes taken place through statistical techniques and the results showed a high significant findings in favor of maintainability, reliability, portability, adequacy, modifiability, operability and accuracy of the system . The model achieved a high quality decisions that can help the top management to take any important decisions in a very short time.