

## Forecasting demand on mega infrastructure projects: Increasing financial feasibility

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### Abstrak

Infrastructure plays an important role to support the continued long-term development in order to increase economic growth. From the results of the World Economic Forum (WEF) in 2013 brought exciting news for Indonesia. One of the main programs of Mega Projects in the Infrastructure Master Plan for the Acceleration and Expansion of Indonesian Economic Development (MP3EI) 2011-2025 is the Sunda Strait Bridge (SSB) or Strategic Infrastructure and Regional Sunda Strait. The SSB will connect the islands of Sumatra and Java with a bridge at a length of  $\pm 30$  kilometers. The SBB is one of the mega infrastructure projects which is estimated to involve a total investment of US\$25 Billion. This research establishes the approach to forecast demand in the case of conceptual design. The SSB is associated with innovations to determine the functions using value engineering methods. The approach involves forecasting demand with a System Dynamics simulation model that could provide a reliable estimate and generate scenarios to compare the financial feasibility of the project before and after the process involving innovation of project functions. Analysis involving demand forecasting with the System Dynamics Approach has confirmed that the Sunda Strait Bridge development with additional functions would increase the revenues of the overall project up to US\$61.59 Million, in order to obtain an increased Internal Rate of Return (IRR) of the overall project up to 7.56% with a positive Net Present Value (NPV).