

Author	Nellas, Christopher A.
Title	Data Analytics Information System for Railway-Subway Construction Industry
Year	2022
Program	Master of Informations Systems

ABSTRACT

Instrumentation data management system which collects real-time instrumentation data, project progress information, Tunnel Borehole Machines (TBM) statistics were mainly used for monitoring. It was already playing a vital role in Singapore construction industry even before the disastrous event way back in 2004. Cited as one of the most tragic events in the history of Subway development when Nicole Highway structure collapsed and claimed lives. The system turned out to be practically inefficient and lacks acumen. Furthermore, different systems were being utilized by different contractors which leads to a decentralized data storage and there were no data retention at all every end of the project.

The on-going predicament of safety in every construction project can be resolved by proposing an intelligent information system by leveraging on historical data and technology. The proposed concept can be achieved by integrating cloud infrastructure, tools specialized on Data Analytics and fundamentals from experienced Subject-Matter experts. The artificial neural network would make the system capable of learning on its own based on the progressive infused records. On the other hand, project owners or stakeholders will challenge the value over its cost impact. The Research & Development alone should have a significant impact to the overall construction budget. Including the operation and maintenance expenditure in keeping the system available, responsive, intuitive and up to date. The proof of concept should be able to quantify its value holistically to the pay masters.