

A Data Tracking Tool to Improve Cost Management Reporting for Large Capital Projects

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ABSTRACT

Due to the growing construction costs and duration of large capital projects, owners face increasing difficulty in collecting and analyzing cost information during construction. It requires enormous effort to analyze cost items in progress reports with explicit references. This study aims to propose and validate a data tracking tool to achieve smart cost reporting during the construction phase. Through examining the current practice, data consistency and system integration are found as the key challenges. To overcome them, this study proposes a data tracking system architecture and demonstrates the major functionalities, which is able to merge multiple sources and prepare cost information for reporting. In the case study for feasibility validation, the conceptual architecture is applied via the relational schema design of cost information repository, and the procedure to accomplish semi-automatic monthly cost reporting. Further application and evaluation of the tool's timeliness, accuracy, reliability, and ease of use are reserved for future work.