

WORK-IN-PROCESS AND CONSTRUCTION PROJECT INFORMATION FLOWS

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ABSTRACT

The inception and completion of the contractor's tasks (i.e., physical production) rely on complete and prompt responses to related information from the design team. However, observations on processing times of Requests For Information (RFI), which is one of major construction project information flows, show that the processing times are unnecessarily long and that on-time response rates are low.

The primary goal of this study is to investigate reason(s) for long information processing time from the production perspective. The study uses three similar projects in terms of the type of building, project budget, and construction duration, gathering actual RFI processing times and measuring key flow performance metrics in order to determine that the major reason for late RFI reviews is the high level of work-in-process (WIP) in the system. To fortify this finding, the study conducts regression analyses, which show a strong correlation between the number of WIP (i.e., RFIs) and the number of delays. The study also analyzes what factors make the WIP level high and suggests possible solutions to reduce the level of WIP from the production perspective.

KEY WORDS

Delay, processing time, regression, request for information, work-in-process

INTRODUCTION

Construction is an information-driven business (Mead 2001). The inception and completion of the contractor's tasks (i.e., physical production) rely on complete and prompt responses to requests for related information from the design team. Physical production can start only after all the necessary information is obtained. For example, in order to install reinforcing bars on site, placing drawings and bar lists should be reviewed and approved by an engineering firm before such following actual production activities as fabrication and assembly can be undertaken. In the current business structure and process, these sequential jobs are not fully automated and cannot be completed in a timely manner because of technological restrictions and sub-optimization. Investigation of the Request For Information (RFI) process reveals that the number of jobs in the RFI review system is so large that the current system is not capable of processing the number of RFIs in the time requested, resulting in delayed responses to each RFI. The author selected three similar projects in terms of the type of building, project budget, and construction duration (Table 1) to analyze in pursuit of this finding. Project delivery performance and control methods may differ among the three projects, depending on the type of owner, contract and so forth, but the study

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