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Research Digest: Preliminary Investigations into Capital Projects Supply Chain Management

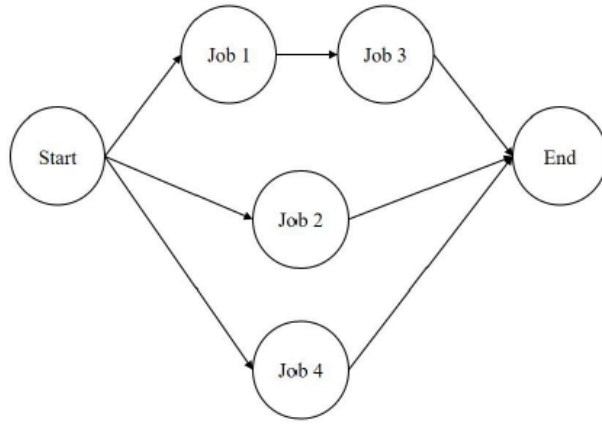
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Executive Summary

In the previous edition of the PPI Spring 2016 Journal, we outlined a three-phase research program to explore ordering and scheduling practices that lead to earliness and delays in materials and equipment delivery in capital projects. Usually, owner-operators and their EPC's look to minimize the risk of schedule delays due to late materials and parts delivery by mandating that parts and materials be delivered far in advance of when they are needed. In contrast, many other industries, including automotive, retail and technology, coordinate orders and deliveries more closely with actual needs to better optimize overall system performance.

We hypothesize that holding large amounts of inventory long before it is needed on capital project sites is a symptom of sub-optimal supply chain operation. To better understand these issues, we have completed the first phase of our research program – a set of interviews with a variety of consultants and project and supply chain managers in the oil & gas industry, during which we asked them to respond to a set of questions so that we could better understand current industry views of supply chain management, inventory, risk management tools and related topics. In this digest, we summarize initial findings from the interview responses and outline steps to explore additional questions they have raised.

Our initial conclusions from the interview responses suggest that a logical next step is to show how to build a comprehensive optimization model to coordinate project planning and scheduling with other supply chain-related decisions in order to globally optimize the supply network in terms of project delivery schedule, cost, and risk management. In a longer article to follow, we will elaborate on the analysis of user responses and detail the next steps in such a research enterprise.



| Figure 1: The activity-on-node diagram for the example project

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