



UNIVERSITY OF
CAMBRIDGE

Department of Engineering

CONSTRUCTION ENGINEERING MASTERS DISSERTATION ABSTRACT

The Buying Game - Managing Risk and Opportunity During the Procurement Stage on Large Scale Infrastructure Projects

“With increased public expenditure on large-scale infrastructure projects such as Crossrail, Crossrail 2 and High Speed 2, increased demand is experienced by the supply chain required to deliver the works. Where this supply chain is specialist or limited, the risk of demand outstripping available supply becomes significant and consequently the possibility of supply chain failure increases.

The aim of this paper is to identify the key risks faced by main contractors on a large-scale infrastructure projects. Key processes and procedures which can be implemented by the main contractor and/or the client during the procurement stage of the project and which would mitigate the risks of wider supply chain failure across the project are identified and reviewed.

A combination of case studies and semi-structured interviews with key personnel on current and completed projects is utilised to review risks and identify opportunities within the procurement of the supply chain. Three large projects (>£100m) are utilised within the case studies - Crossrail, The Francis Crick Institute, and Heathrow Airport.

Research identified that the supply chains most at risk were those which provided specialist components common across multiple areas of work. The use of common plant and materials agreements were considered a main opportunity for reducing risk across the projects. Other risks mitigation opportunities identified include early contractor and subcontractor input; completion of the design prior to procurement; and greater collaboration between the client and main contractor.

In studying the risks associated with supply chain procurement, recommendations for how to protect the supply chain from failure are made for future large scale projects. These include a better allocation of risk between the client, main contractor and subcontractors; the establishment of common plant and materials agreements by the client at an early stage of the project; improving communication both on projects and within the industry as a whole; and the implementation of buying clubs and forums across multiple Tier 1 contractors.”

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