SCIRT Rebuilding Infrastructure

LEARNING LEGACY

Lessons learned from one of New Zealand's most challenging civil engineering projects: rebuilding the earthquake damaged pipes, roads, bridges and retaining walls in the city of Christchurch 2011 - 2016.

Abstract of: Evaluating Alliance Non-cost Performance Measurement

Story: Master of Engineering thesis: Evaluating Alliance Non-cost Performance Measurement

Theme: Programme Management

An abstract which describes the content of Trent Beckman-Cross's full PhD thesis.

This document has been provided as an example of a tool that might be useful for other organisations undertaking complex disaster recovery or infrastructure rebuild programmes.

For more information about this document, visit www.scirtlearninglegacy.org.nz

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Abstract of: Evaluating Alliance Non-cost Performance Measurement

Trent Beckman-Cross, 2016

Effective performance measurement is critical to organisation and project management success and has been extensively studied in both disciplines. However, there is a wide range of research that criticises the current use and understanding of performance measurement and management in the construction industry. Alliancing is a performance based collaborative project delivery method where the Owner and non-Owner participants share in the outcomes of a project through the formation of a temporary organisation. Sharing in outcomes is facilitated by a risk/reward commercial model where the amount the non-owner participants gain or lose is determined by the value of any cost underruns or overruns against a pre-agreed Target Outturn Cost and performance in non-cost key result areas. Despite the obvious importance of non-cost performance to both the Owner and NOP, there is limited research that specifically looks at non-cost performance measurement in alliances.

This research uses a case study approach to investigate the non-cost performance management of the Stronger Christchurch Infrastructure Rebuild Team (SCIRT) programme alliance. Three focal points were established to study the non-cost performance of SCIRT. Firstly, analyse how non-cost performance is measured and managed in the uncertain and complex environment that exists for an alliance programme. Secondly, examine the effect of using the three limb compensation model in conjunction with a project allocation model. Finally, a theoretical performance measurement framework for alliance organisations is developed based on programme document analysis, a literature review and evaluation by members of an alliance management team.

Document analysis, literature review, and semi-structured interviews were the primary research instruments used to analyse and gather multiple sources of data including programme management plans and data, and responses to semi-structured interviews.

This thesis found that a flexible approach to performance measurement using a refined set of Key Performance Indicators in conjunction with rigorous management processes is required to measure and manage non-cost performance in an uncertain environment. Secondly, SCIRT used a commercial model intended to balance collaboration and competition between the NOPs. The typical limb three calculation used for alliances was used to drive collaboration. A project allocation model was used to motivate competition and provided a more immediate incentive for outstanding performance. The immediate financial impact of the project allocation model made it a more powerful driver of non-cost performance compared with the less tangible financial effect of the Limb 3 calculation. Finally, a theoretical framework was developed that converted alliance critical success factors into a set of interactions that illustrates the organisational factors necessary for an alliance to be successful.