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Managing a Portfolio of Projects: Metrics for Improvement

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Managing a Portfolio of Projects: Metrics for Improvement

**Prepared by
Construction Industry Institute
Research Team 303, Managing a Portfolio of Projects:
Metrics for Improvement**

**Research Summary 303-1
September 2014**

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The University of Texas at Austin

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Printed in the United States of America.

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Executive Summary

CII chartered Research Team (RT) 303, Managing a Portfolio of Projects: Metrics for Improvement, to answer the following essential research question:

Which practices, techniques, technology, and processes are most effective for managing a portfolio of projects?

The research team defined a portfolio as a group of related or unrelated projects and/or programs managed by a single individual, the portfolio manager. (It may be noteworthy that the Project Management Institute (PMI) definition of the term focuses more on the link between portfolio creation and the achievement of business goals.) Using both quantitative and qualitative, the team took a five-phase approach to its investigation of resource, financial, and risk management, and portfolio metrics:

- literature review
- design and performance of a fact-finding survey
- structured interviews
- analysis of interview findings
- research summary and conclusions.

To begin, RT 303 conducted a literature search to identify sources of information and data on portfolio management. The research team reviewed past CII research publications to identify work that could be used in the research. Then, the team used the findings from this review to design an online survey of CII and non-CII owner and contractor organizations. After analyzing the survey data, the team selected fifteen firms for structured interviews. The interviews produced in-depth findings on the firms' processes and practices, portfolio management metrics, and barriers to portfolio management implementation. Based on the interviewees' portfolio management approach, the team then chose six firms for in-depth case studies. In the final phase, the team summarized the research and recommended future work.

The survey results showed that most organizations assign individuals with both technical/business expertise and strong managerial skills to manage multiple projects. Firms most commonly use portfolio management processes to maintain consistency and create standard processes; they also use these processes to control overall budgets, meet clients' specific requirements, group similar projects, effectively manage resources, meet organizational goals, and prioritize projects. Most firms have consistent internal portfolio processes, but adopt external processes to match their client's needs. Some firms use aspects of CII processes such as front end planning and the Project Definition Rating Index. While several firms roll project data up to the portfolio level, but the data transfer between systems is mostly manual. Portfolio management software packages used by the survey participants ranged from internally developed to large-scale, third-party packages. None of the participants had an integrated system for gathering information into one database and automatically creating portfolio reports.

All firms interviewed used some sort of metric to measure portfolio success, with most using a traffic-light indicator dashboard (i.e., with green, yellow, and red color-coding). The most common areas measured are safety, number of change orders, return on investment, planned versus actual cost, cash flow, planned versus actual schedule, and number of issues/concerns. As part of their continuous improvement efforts, firms use portfolio management best practices for lessons learned, schedule, cost, procurement, resource allocation, communication, scope, change management, safety, risk management, and issue management. The team found that lessons learned dissemination across the portfolio is important for effective management, with schedule, cost, and resource allocation cited as key areas.

Barriers to effective implementation of portfolio management included resistance to change and a lack of alignment, consistency, and commitment at the top management levels. Key improvements identified to overcome these barriers include data integration and interoperability, standardization across projects, quantitative metrics, improved resource forecasting, and automated dashboards.

To help portfolio managers implement effective portfolio management practices, the team developed Implementation Resource (IR) 303-2, *Managing a Portfolio of Projects: A Playbook for Success*. This publication helps users identify, adapt, develop, and recommend practices for portfolio management, specifically in the areas of resource management, financial management, risk management, and portfolio metrics. This resource includes a portfolio management system example and chapters on the following topics:

- portfolio formation strategies
- portfolio management
- recommended process for portfolio performance management
- recommended practices for portfolio management.

Introduction

RT 303 defined a portfolio as a group of related or unrelated projects and/or programs managed by a single individual—a portfolio manager. The research team determined that a portfolio manager could be a project manager who is responsible for multiple projects, or a project director who is responsible for multiple project managers with individual projects. While best practices have been developed to manage individual projects, these professionals need to know how best to apply these practices when they manage multiple projects.

One major obstacle is that current recommended project management practices, techniques, technologies, and processes, whether developed by CII or another source, are tailored towards individual projects, not portfolios. Until it initiated this research effort, CII had not investigated how project-level metrics could be useful to assess the portfolio performance. Thus, the Institute was interested identifying any opportunities for applying recommended practices across a portfolio. So, it charged RT 303 with finding applicable techniques, processes, and metrics to improve, manage, measure, and analyze portfolio delivery.

Research Objectives

The primary purpose of this research was to identify, analyze, and recommend best practices for effectively managing a portfolio of projects. To fulfill this purpose, the research team investigated resource management, financial management, risk management, and metrics.

In the context of portfolio management, the team pursued the following research objectives:

- Provide definitions of terms related to the portfolio management.
- Understand the challenge of portfolio management, including its main differences from individual project management.