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Managing project-to-project and project-to-organization interfaces in programs: Organizational integration in a global operations expansion program

Virpi Turkulainen [a,b,*], Inkeri Ruuska [b], Tim Brady [c], Karlos Artto [b]

[a] University College Dublin, School of Business, Ireland
[b] Aalto University, Department of Industrial Engineering and Management, Finland
[c] University of Brighton, Centre for Research in Innovation Management, United Kingdom

Abstract

Managing project-to-project and project-to-organization interfaces is a critical part of program management. However, previous program management research says little about management of these two important interfaces. We study a global operations expansion program at Neste Oil when it expanded its renewable fuels operations globally with four plant projects in 2005–2011, examining how integration is managed in project-to-project and project-to-organization interfaces. Our analysis provides understanding on how management of organizational integration is contingent on the interface by illustrating use of different types of integration mechanisms in those two interfaces. The findings are novel in the context of program management, and the theoretical contributions focus on research on program management especially from an organizational integration and contingency analysis perspective.
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1. Introduction

Recent research suggests that organizations are becoming increasingly sensitive to the need to manage a set of projects as programs in a coordinated manner with an overarching common goal rather than as independent projects (Ferns, 1991; Lycett et al., 2004; Morris, 2013; Pellegrinelli, 2011; Smyth, 2009; Thiry, 2002). While programs have been studied rather extensively in existing literature, little is known about how programs are managed as complex organizations with multiple interrelated projects as their parts. In particular, there is lack of understanding on how organizational integration is managed in programs (e.g., Lycett et al., 2004). It is this gap in the literature that we seek to address in the present study by examining the management of project-to-project and project-to-organization interfaces. We engage in theory elaboration research with the objective of developing further understanding on how organizational integration is managed across project-to-project and project-to-organization interfaces in the context of a global operations expansion program from a contingency analysis perspective.

In regard to operations expansion, especially since the late 1980s, firms have become ever more international and continuously face pressures to globalize through establishing operations in multiple geographical locations, for example to be close to customers and skilled labor or to reduce operations costs (Cheng et al., 2011; Colotla et al., 2003; Ferdows, 1997). Building of new plants in new locations is organized through a set of focused and interrelated projects (Gray and Bamford, 1999). The business goal of establishing manufacturing plants in

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* Corresponding author at: University College Dublin, Michael Smurfit School of Business, Carysfort Avenue, Blackrock, Co. Dublin, Ireland.
E-mail address: virpi.turkulainen@ucd.ie (V. Turkulainen).

many dispersed geographical areas globally cannot be achieved without managing these projects (and later, managing the plants) in a coordinated manner as a program. Even though the final outcome of this kind of program to establish and expand global operations may sometimes look like comprising multiple similar facilities located around the globe, the firm can only enhance the value of its plant network by managing it as a whole (Cheng et al., 2011; Ferdows, 1997; Nohria and Ghoshal, 1997). The global nature of this kind of endeavor requires bringing together and integration of multiple organizational units and geographies in a completely new context, posing significant managerial challenges (Artto et al., 2011; Orr et al., 2011; Turkulainen et al., 2013).

Integration is one of the fundamental issues in program management (Ferns, 1991; Morris, 2013; Pellegrinelli, 2011); information and knowledge existing and developed during the program need to be shared across the organization, for example to avoid reinventing the wheel, to avoid losing critical knowledge, and to operate effectively (Brady and Davies, 2004; Keegan and Turner, 2001; Ruuska and Brady, 2011). Moreover, the geographically distributed nature of global operations expansion programs increases the integration challenges (Orr et al., 2011; Turkulainen et al., 2013). In programs, integration is especially critical in two interfaces: project-to-project and project-to-organization (Lehtonen and Martinsuo, 2009). Integration of the project-to-project interface in the context of program management is required for coordination, efficient and effective resource utilization, transfer of knowledge, ideas, tools, and techniques, and coherent communication (Lycett et al., 2004). Integration of the project-to-organization interface, on the other hand, is required for effective alignment with business strategy, senior management visibility, effective and efficient knowledge and other resource utilization, and coherent communication as well as ensuring that knowledge developed in the projects is stored in the organization (Lycett et al., 2004).

We approach organizational integration in project-to-project and project-to-organization interfaces from an information processing perspective (Galbraith, 1973; Tushman and Nadler, 1978). We analyze extensive data collected during a longitudinal, single embedded-unit case study of a globally-operating Finland-based oil company, Neste Oil. Our analysis focuses on Neste Oil's program, which we call "NextGen". NextGen was set up in 2003 with the goal of becoming a global leader in the renewable fuels business area. The purpose of NextGen was to build and expand global operations for the biomass-to-liquid (NExBTL) process for producing next generation diesel oil with superior qualities compared to traditional biodiesels and their production. The NextGen program consists of four projects, which were set up to expand operations on a global scale and to simultaneously further develop the product and process technology for global operations in order to reach the overall goal of becoming the world leader in the area. Each plant was developed and built as a separate project but they were managed together as a program: setting up of the first commercial production facility to establish the viability of the technology in Porvoo (Finland, 2003–2007; "Finland 1"), building of the second plant alongside the first plant to double capacity again in Porvoo (2006–2009;

"Finland 2"), and then rapidly building two large-scale plants with four times the capacity of the Finnish plants in Singapore (2007–2011) and Rotterdam (The Netherlands, 2007–2011).

The rest of the paper is structured as follows. In the second section, we present the focal concepts of the research as well as a theoretical framework guiding our empirical analysis. The third section presents the research methodology, followed by a description of the case program. In the fifth section we present the case analysis, focusing on how integration is managed across project-to-project and project-to-organization interfaces. Finally, a discussion section follows, including research and managerial implications, limitations and future research directions.

2. Theoretical background

2.1. Programs and program management

The early research on project management between the 1930s and the 1950s used the terms projects and programs interchangeably (Artto et al., 2007; Lycett et al., 2004; Morris, 1994). For example Morris (1994: 19) refers to "Program and Project Management" when discussing the early developments of the projects and programs domain as a single, combined domain. Recent research, however, stresses the inherent differences between projects and programs; programs and their management are to be distinguished from projects (Lycett et al., 2004; Pellegrinelli et al., 2007; Thiry, 2004). While there has been significant effort on the study of projects, research on programs and their management seems to lag behind (Artto et al., 2007).

The definitions of programs and program management vary. Some equate program and portfolio (e.g., Turner and Speiser, 1992) and define a program as a grouping of projects, which may or may not include coordinated management (Gray and Bamford, 1999). Pellegrinelli (1997) defines a program as a group of projects, aimed at focusing all the activities required to achieve a set of major benefits. These projects are managed in a coordinated way, either to achieve a common goal, or to extract benefits, which would otherwise not be realized if they were managed independently. Smyth (2009), on the other hand, defines a program as clusters of projects aimed at meeting diverse goals for organizations and diverse societal policies. The PMI (2008) defines program management as the centralized coordinated activity to achieve the program's strategic objectives and benefits, emphasizing the programs' long-term benefits, strategic nature, and challenge to integrate and coordinate a complex network of resources.

We define programs to consist of a set of interrelated projects, which are managed in a coordinated manner to achieve a common overarching goal (Ferns, 1991; Nieminen and Lehtonen, 2008; Pellegrinelli, 1997). Programs provide a bridge between projects and organizational strategy (Shao and Muller, 2011) and differ from projects in that despite having an overarching goal, they do not necessarily have a single, clearly defined deliverable or a finite time (Pellegrinelli, 1997; Thiry, 2004). Moreover, because programs are typically longer in their duration, their needs and