

Editorial: Special Issue on Fundamentals of Social and Management Science for Engineering Project Organizations

The editors of the Engineering Project Organization Journal decided in August 2011 to launch Volume 2 of the EPOJ Journal with a special issue providing theoretical reviews of some of the key social and management science fundamentals underlying current research in engineering project organizations. Each of the papers in this collection is intended to provide a review of past research in a specific subfield of social or management science, draw out the implications of the broader social and management science literature in this subfield for engineering project organizations, and pose a set of research questions that could benefit from future research by EPOJ readers. This special issue contains eight papers that deal with the broad themes of project governance, project organization and project finance from several different points of view.

As the guest editor of this special issue, it has been my privilege to assemble the papers included in this collection. Each of the authors of these invited papers is an active and well-respected researcher in the area of social or management science who prepared these articles on an extraordinarily tight schedule. On behalf of all EPOJ readers, I would like to express my deep appreciation to each of these authors for responding to my totally unreasonable request in late August of 2011 for draft papers by the end of early October 2011. I would also like to thank the anonymous EPOJ reviewers who worked on an equally tight schedule to review these draft manuscripts and help the authors revise their papers by late November 2011 for an early 2012 publication.

An overview of each of the papers in this special issue will hopefully whet readers' appetites to dig into the full text of the papers that are of greatest interest to them:

- *Tim Carroll and Rich Burton* kick off the special issue with a review of *organizational contingency theory* applied to the design of project organizations. Organizational contingency theory asserts that the detailed configuration of each of the elements of

the design of an organization should be aligned with key attributes of the organization and its context, including its age, size, technology, strategy, environment and management style. In this paper, the authors apply the contingent design framework to the design of project organizations. They assess the strengths and weaknesses of three approaches for the contingent design of project organizations that have previously been reported in the literature, and point out where future research can enhance our ability to optimize the design of project organizations.

- *Paul Chinowsky and John Taylor* take the point of view that projects are embedded in and composed of networks of relationships. They provide a review of *social network analysis (SNA)*, a technique for mapping the presence and strength of relationships in social networks of all kinds, which is by now relatively well accepted for studying enterprises' organizations through the work of Rob Cross and others. They go on to describe how SNA is increasingly being used to shed light on the functioning and design of project organizations. The authors conclude by setting out some very specific areas in which future research could enrich SNA theory for application to project organizations.
- *Dick Scott* literally 'wrote the book' on the *institutional view of organizations*. His paper in this special issue applies his "three pillars" institutional framework to analyse the unique challenges of institutional conflicts that arise in the exponentially growing set of global construction projects, which bring together participants from multiple national institutional contexts in fast paced, high consequence work environments. In laying out the organizational and governance challenges that these global, cross-institutional projects face, the author sets out a challenge for future EPOJ researchers to enrich and extend institutional

theory with case studies and theoretical insights drawn from its application to global projects.

- *Vit Henisz, Ray Levitt and Dick Scott* seek to develop a more *integrated view of governance for project organizations*. They set out the stringent governance challenges of private–public partnerships for financing and delivery of long-lived infrastructure projects. Williamson and other transaction cost economics authors have asserted that such one-time, highly ‘asset-specific’ projects can be effectively governed by ‘neoclassical’ contracting approaches. The authors explain that the length and complexity of these service delivery projects cause even the most carefully worded neoclassical, ‘contingent claims’ contracts to fail. They build on examples to propose that relational contracts be specifically tailored in a contingent design approach that uses different configurations of the elements of Scott’s three institutional pillars framework. The authors challenge future researchers to study the contingent relationships between the attributes of such projects and the detailed design of relational contracting mechanisms.
- *Tom Beamish and Nicole Biggart* define the concept of *social heuristics*, which extends and enriches the insights of Arthur Stinchcombe. Stinchcombe’s classic 1959 paper, ‘Bureaucratic and Craft Administration of Production,’ described how highly skilled craft workers essentially manage themselves, greatly reducing the need for bureaucratic coordination of construction work. This paper adds richness and texture to Stinchcombe’s framework by showing how ‘social heuristics’—shared rules of thumb and shared high level values, of which they provide multiple examples—help to guide the individual decisions of managerial, craft and professional participants in commercial building construction project networks and, thereby, provide implicit coordination for the otherwise highly interdependent work of different trades and professions across firm boundaries. Their paper provides a rich set of propositions about how social heuristics function in commercial building construction, and serves to inspire future ethnographic and case study work on this topic across different types of construction project networks.
- *Sirkka Jarvenpaa and Elizabeth Keating* focus on the issue of *developing and maintaining trust* across the dense networks of onshore and offshore participants drawn from multiple national institutional backgrounds on large engineering and construction projects. They provide a review of literature on global virtual teams and organizational trust; they provide empirical data from a study of four large global engineering teams; and they document how trust asymmetries develop in these projects between an onshore ‘in group’ and offshore ‘out groups.’ They discuss ways to build and sustain trust, several of which align with Henisz and Levitt’s cognitive cultural and normative elements of relational contracting. The propositions drawn from their richly documented ethnographic research offer a palette of research opportunities for researchers in our field to conduct additional case studies and begin to draw inferences about ways to build shared trust in global projects.
- *Glenn Ballard and Iris Tommelein*’s paper provides an insightful review of the philosophy and application of *lean management methods* that originated in automobile manufacturing, and have recently been applied to engineering and construction service delivery projects. Their paper explains the philosophy underlying lean management methods: Projects should provide maximum value to clients—even, or especially, when the clients’ desired value tradeoffs may change over the lifecycle of the project—while eliminating all waste from the delivery process. They illustrate the implementation of this philosophy by providing detailed examples of several lean management methods that have been successfully deployed in construction to date. While showing that these methods have produced enhanced value for many construction clients to date, the authors pose a challenge to researchers in our field to conduct research to assess the degree of applicability of different lean methods to different phases of the lifecycle of a variety of projects involving different kinds and degrees of complexity.
- *Mike Garvin and David Ford*, the authors of the final paper in the special issue, provide us a thorough review of *real options theory*, derived from financial options theory and pricing models, which has been used to guide decision-making under uncertainty in high-risk construction projects. They explain the linkage of real options theory to the fields of strategy and finance, and show how it can be used in valuing contractual alternatives that have different real options value. Miller and Olleros have argued elsewhere that successful project managers use real options theory implicitly in the early shaping phases of projects, deciding whether to continue to invest in a project to keep alive the option of its continuation, step-by-step, as detailed information about the project and its context gradually unfolds. Garvin and Ford lay out six propositions, aimed at broadening and deepening the understanding of this approach to evaluating risky decisions by leaders of engineering projects, which they argue need

further investigation to advance the more systematic and widespread application of real options theory by managers of large engineering projects.

After reading through this collection of papers again to draft this foreword, I feel sure that this special issue will become a valuable reference source, widely used in teaching classes on project organization. I am also confident that this special issue will be extremely valuable to existing and aspiring engineering project organization researchers, providing

them with solid points of departure to frame questions and methods for their own research and, thereby, to contribute more significantly to the knowledge base and practice of engineering project organization and management.

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