Editorial

Infrastructure megaprojects are extremely large scale, typically complex, investment projects by the public or private sector aimed at developing and managing public utility infrastructures (i.e., dams, airports, highways, railways, wastewater systems, and power plants, etc.). This kind of projects requires high investment expenditure that exceeds $1 billion according to some literature. In many cases megaprojects attract a lot of public attention because of substantial impacts on communities, environment and local and national government budgets, and may even require the creation of structures, equipment, purposefully prepared development sites, and new institutional forms for planning, construction and operation.

In the last decade, there has been a growing worldwide interest relative to many issues related to megaprojects, both by academic scholars and policy makers. In Europe, the COST program is funding since 2011 a research network of over 80 multi-disciplinary researchers from 24 countries with the aim to understand how megaprojects can be designed and delivered more effectively.

Empirical evidence suggests that even though infrastructural megaprojects have generally a great potential to generate wealth and benefit society, projects often fail to materialize or, when completed, are unable to meet expected performance targets. Costs and time are often underestimated, while benefits are usually overestimated due to optimism bias. Social and economic costs of megaprojects can be so high that they may seriously challenge the societal, environmental, business and financial sustainability. Due to the scale of project, in which sustainability goes beyond the project itself and depends on the extent of future revenues that exceed costs, the infrastructure will deliver economic and social services to users in a longer term, the local or national authorities provide policy supports, and the infrastructure is environmentally respectful. Both the academic and professional literature has pointed out that many important pitfalls occur in the planning stage of the project, i.e., a lack of requirement analysis, unfocused problem-solving, scarce consideration of alternatives, uncertainty and ambiguity in targets and costs estimation, limited stakeholder involvement or commitment, insufficient risk analysis, conflict over objectives and/or strategies concerning the project, and even a lack of a sound business model, etc.

It is clear that the nature of infrastructure megaprojects challenges the traditional management approaches and tools, and a new philosophy and set of decision-making instruments are needed to get better results from managing this category of projects.

This special issue has collected six papers that propose concepts, ideas, and interpretative framework to develop new knowledge that covers the broad area of planning and managing sustainable infrastructure megaprojects.

The first two papers focus on intangible aspects of megaprojects. Illona Kusuma emphasizes how megaprojects are characterized by extreme fragility, fragmentation and a great number of interfaces. As a consequence, issues related to the coordination of multi-organizational teams responsible for execution and different cultural environments need great attention and systematic management for integration. However, as the author underlines that over-determined integration induces conflated thinking and confused action in practice. In order to deal with this problem, the author introduces a 4-class system useful to increase the ability to measure cultural dynamics in a megaproject temporary multi-organizational team. In the second paper, Markku Lehtonen addresses the issue of megaproject evaluation, focusing on those social aspects that generally have received little attention. This paper discusses a number of dilemmas and tensions that challenge the evaluation of the social dimension of megaproject governance, i.e., the nature of “the social”, the stakeholder participation, the relationships between consensus and conflict, the role of evaluation in
governance; the influence of uncertainty, and the temporal and spatial scales of governance. Finally, the author analyzes both environmental justice and territorially sustainable development as two potentially fruitful frames to the evaluation of the social dimension of megaprojects, identifying possible approaches to deal with the key dichotomies.

Large public projects do not always meet the expectations of many of the involved stakeholders. The conception of these projects usually emerges as the outcome of a complex decision-making process where different needs expressed by different stakeholders have to be politically combined together to achieve a convergent goal. Henceforth, as Samset and Volden emphasize in their paper, complex governance processes at various administrative levels, local and central government, political institutions, the public, media, and consultants and contractors in the private sector become important in project management. By using the Norwegian project governance regime applicable to major public projects, adopted since year 2000, the two scholars discuss some operational and strategic measures in the perspective of governance that might improve success in large public investment projects.

Liu, Fellows and Chan adopt the service-dominant paradigm to show how value co-creation occurs when the client and the contractor collaborate through a construction project. The analysis of the airport project illustrates that, differently from the traditional procurement approaches, the early collaboration between the client and the contractor in the alternative bidding process and in value management workshops conducted before the inception of the construction stage contributed to create value to the project.

Mneimneh, Srour and Kaysi focus on sustainability of new urban development and megaprojects. In particular, the authors identify the sustainability requirements of an urban eco-megaproject. The proposed list will be helpful to decision-makers and practitioners both to develop a sound Master Plan that meets pre-defined sustainability requirements and to evaluate different alternatives in light of the pre-defined sustainability objectives.

In the last paper, Babatunde, Perera, Udeaja and Zhou investigated challenges at both development and construction phase of PPP road infrastructure megaprojects, and the critical success factors that actually made the projects successful in Nigeria. By conducting an in-depth case study analysis, the scholars identified seven challenges at development phase and four challenges at implementation phase. They finally identified four critical success factors that made the PPP project case successful.

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