

Editorial

Complexity and Project Management: Challenges, Opportunities, and Future Research

José R. San Cristóbal ¹, **Emma Diaz**,² **Luis Carral** ³,
José A. Fraguela,³ and **Gregorio Iglesias**⁴

¹*Project Management Research Group, Universidad de Cantabria, Santander 39004, Spain*

²*Escuela Técnica Superior de Náutica, Universidad de Cantabria, Santander 39004, Spain*

³*Department of Naval and Industrial Engineering, GEM, Universidade da Coruña, Ferrol 15403, Spain*

⁴*University of Plymouth, Plymouth, UK*

Correspondence should be addressed to José R. San Cristóbal; jose.sancristobal@unican.es

Received 23 December 2018; Accepted 24 December 2018; Published 6 January 2019

Copyright © 2019 José R. San Cristóbal et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Owing to its societal and economic relevance, Project Management has become an important and relevant discipline and a key concept in modern private and public organizations. Modern Project Management appeared during World War II and, since then, it has grown up and spread around the world to become what it is today, that is, a set of practices, principles, theories, and methodologies.

Project Management is the application of knowledge, skills, tools, and techniques to project activities in order to meet project objectives. It is more applied and interdisciplinary than other management disciplines. Nowadays, Project Management is a well-recognized discipline practiced by almost all organizations which has accumulated extensive knowledge and wide-industry based experience. Today, project managers have gained recognition and employment opportunities beyond construction, aerospace, and defense, in pharmaceuticals, information systems, and manufacturing.

However, paradoxically, many projects do not meet customer expectations, and cost and schedule overruns are quite common. Why then is so much effort spent today on projects to achieve only moderate levels of success? What is missing in Project Management? Project Management is a complex activity and a risky organizational adventure, different than any functional activity or ongoing operation.

Projects have become more and more complex because of the increasing factors that are considered source of

complexity. A large amount of required resources, a turbulent environment, working on the edge of technology, and a large number and diversity of actors working and communicating with each other are all factors that affect project outcome. This complex environment influences project planning, coordination, and control; it can also affect the selection of an appropriate project organization structure and hinder the clear identification of project goals.

When problems fundamentally dynamic are treated statically, delays and cost overruns are common. Experience suggests that the interrelationships between the project's components are more complex than it is suggested by traditional approaches. These, traditional approaches, using a static approach, provide project managers with unrealistic estimations that ignore the nonlinear relationships of a project and, thus, are inadequate to the challenge of today's dynamic and complex projects.

Complex projects demand an exceptional level of management and the application of the traditional tools and techniques developed for ordinary projects have been found to be inappropriate for complex projects. Complex Project Management is a specialist profession that requires a specific set of competencies and a deep understanding of the project and its environment. If project managers want to execute a project successfully, in a context of increased complexity, it is not only necessary that they attend the demands of an increasingly complex environment or they develop the

right strategies to address the new challenges, a willingness to change leadership style will also be required. Project managers must be able to make decisions in the dynamic and unstable environments that are continuously changing and evolving in a random fashion and are hard to predict. To achieve this objective, more integrated approaches for managing projects and new methods of planning, scheduling, executing, and controlling projects must be investigated.

The aim of this special issue is to publish selective ongoing research contributions that contribute and stimulate the debate in the topic.

Conflicts of Interest

Regarding this special issue, the lead guest editor and the others guest editors do not have any possible conflicts of interest or private agreements with companies.

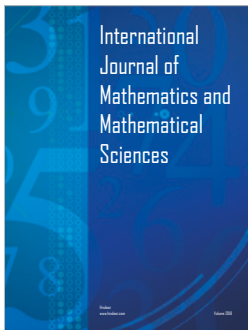
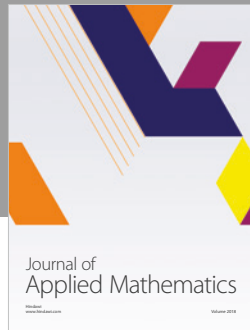
José R. San Cristóbal

Emma Diaz

Luis Carral

José A. Fraguera

Gregorio Iglesias



Hindawi

Submit your manuscripts at
www.hindawi.com

