# Engineering Management Journal

Volume 35, 2023 – Issue 2

**Editorial – Editor’s Introduction**

Brian Smith, Jennifer Cross, Simon Philbin

In this issue of the journal we are delighted to present five articles that cover several key areas across the engineering management discipline. The scope of the research studies highlights the application as well as the diversity of approaches adopted in engineering management, which includes both academic and industrial dimensions. The Co-Editors would like to thank all of our reviewers who contributed to the peer-review process for the articles in the issue as well as the Associate Editors, Wilbon, Pinero de Lima, Scala, Furterer, and Nepal for their respective contributions to this issue of the journal.

The first article in the issue is by Houssem Barkaoui, Helmi Ben Rejeb, Abdelwahed Barkaoui, and João Manuel R.S. Tavares and is called “Multi-Criteria Decision Making for Medical Device Development.” This study develops a multi- criteria decision making process called Define, Prioritize, Measure, and Aggregate (DPMA) to support the development pro-cess for new medical devices. The research utilizes the analytic hierarchy process and group decision making process, and has implications for both researchers and practitioners working in product development and especially those in the medical device sector.

The second article is called “Relationship Management in Construction Projects: Systematic Literature Review” by Omar Daboun, Aminah Md Yusof, and Ali Raza Khoso. This article examines relationship management in construction projects through adopting the systematic literature review (SLR) method. Systematic searching of the literature resulted in more than 500 publications and after exclusion criteria are applied, 73 publications are included in the content analysis. The research identified 18 key relationship management characteristics that are classified into four categories, which can be used by engineering managers as a comprehensive source on relationship management in construction projects.

In the third article, “The critical risk factors that influence production-oriented projects in the United Arab Emirates: A ‘Best-Worst Method’ (BWM) analysis,” Sharfuddin Ahmed Khan, Udechukwu Ojiako, Alasdair Marshall, Doraid Dalalah, Serkan Ceylan, Naser Nader Ali Shabani, and Salama Imad Al Sharqawi introduce an integrated approach combining ‘Technology–Organization–Environment,’ ‘Four levels of uncertainty,’ and the ‘Best-Worst Method (BWM)’ to better understand and manage risk in production-orientation pro-jects. As risk identification is a critical challenge which controls the effectiveness of the entire risk management process, one key outcome of the study is the identification of the six factors that are most important in the study context (metal production and fabrication in the United Arab Emirates). The article proposes that these six factors, as well as the 11 additional factors that were less important, can serve as a generic typology that engineering managers can apply to improve the risk management process in other contexts.

The fourth article “Design for Six Sigma: A Review of the Definitions, Objectives, Activities, and Tools” by Ana Caroline Dzulinski, Aldo Braghini Jr., and Daiane Maria De Genaro Chiroli analyses Design for Six Sigma (DFSS) with the aim of solving a long-standing problem for practitioners. DFSS has been shown to be an effective methodology for improved development processes, but the authors show that the use of DFSS is limited by the lack of a standardized process. In this article, the authors present a framework for applying DFSS to the development of new products and services. A key contribution of this research is the decision support that the framework can provide during the new product/service development process.

The fifth article “Readiness and Maturity of Smart and Sustainable Supply Chains: A Model Proposal by Sercan Demir, Mehmet Akif Gunduz, Yasanur Kayikci, and Turan Paksoy addresses two developing components of the engineering management environment: Industry 4.0 and Smart and Sustainable Supply Chains. This paper presents the “Smart and Sustainable Supply Chain Readiness and Maturity Model (S3RM)” as a tool for managers to assess their current supply chains in relation to the concepts of Industry 4.0 and sustain-ability. Application of S3RM results in a Smart and Sustainable Readiness and Maturity Index for the current state of the supply chain allowing managers to evaluate current and desired performance in terms of “smartness” (Industry 4.0) and sustainability.

The Engineering Management Journal (EMJ) invites participation and articles from academic researchers as well as practitioners from industrial, governmental and other organizations. We welcome all types of research methodologies that are applicable to the engineering management field. For questions or inquiries on possible articles, please contact the journal’s current editorial team: Brian Smith (smith@ise.msstate.edu), Jennifer Cross (jennifer. cross@ttu.edu), and Simon Philbin (philbins@lsbu.ac.uk).