# Engineering Management Journal

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**Editorial – Editor’s Introduction**

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In this issue of the journal, we are delighted to present twelve articles that span many of the domains of the field of engineering management. The articles include studies of different industrial sectors (such as oil & gas, construction and manufacturing sectors) as well as the application of different processes and techniques (such as project management, product development and decision-making). This scope of studies highlights both the utility and flexibility of the engineering management discipline – and when combined with a systematic approach and rigorous research methodology – we hope you find this extended issue of the journal both an interesting and inspiring read. The Co-Editors would also 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, Furterer, Sols, Philbin, Corns (x2), Salado, Long (x2), Nepal, de Lima, Tong, and Needy for their respective contributions to this issue of the journal.

The first article in the issue is by Jelena Ruso, Maja Glogovac, Jovan Filipović & Veljko Jeremić, and is called “Employee Fluctuation in Quality Management Profession: Exploiting Social Professional Network Data.” This study investigated employee loyalty and specifically the turnover of quality management professionals through considering individual and organizational factors as possible influencers. Data was obtained from social media, which was analyzed through application of a range of statistical techniques. The results of the study indicate that the level of employee turnover depends on a range of factors, including the degree of education, career development activities, and the type of current examinee workplace.

The second article is called “Benchmarking of Oil and Gas Pipeline Companies in British Columbia: Integrating Integrity Management Program and Safety Culture Using a Risk-Based Approach” by Hassan Iqbal, Husnain Haider, Bushra Waheed, Solomon Tesfamariam & Rehan Sadiq. The article is based on a study of the Canadian oil & gas sector through developing a novel risk-based benchmarking framework, which establishes linkages between integrity management programs (IMPs) and the attributes of safety culture maturity (SCM). The study collects data from oil & gas companies and includes application of the failure modes and effects analysis (FMEA) technique. The findings will be of interest to both researchers and practitioners in the oil & gas sector.

The third article is by Hanbin Luo, Da Sheng, Botao Zhong, Ke Chen, Samad M. E. Sepasgozar & Xuejiao Xing, and is called “Conceptual Framework for the Service-Oriented Management of Construction Labor Resource.” The article includes development of a labor resource management model for the construction industry in China. Based on conceptual analysis, a labor-as-a-service (LaaS) model is developed and evaluated through SWOT analysis and expert interviews. The findings extend the knowledge base for engineering construction management and provide various practitioner insights, such as improving the understanding of the connection between different network services and labor resources deployed in the construction industry.

The fourth article is called “Towards a New Continuous Improvement Organization Based on Simulation” by Rafael Alencar de Paula, Abdallah Ben Mosbah, Yuvin Chinniah & Samuel Bassetto. The article investigates the process of continuous improvement (CI) and developed a mathematical model to forecast the time needed for CI projects. According to simulation modeling with the Lotka-Volterra (LV) model, the study identified how adaptation of LV equations has the potential to simulate a CI project. The method utilized in the study was further tested through analysis of data from an industrial enterprise from Montreal in Canada. The study includes a range of implications for engineering managers involved in process improvement.

In the fifth article, “Impacts of IDEF0-based Models on the Usefulness, Learning, and Value Metrics of Scrum and XP Project Management Guides” Mora, Adelakun, Galvan-Cruz, and Wang examine a novel method to teach Agile Project Management to practitioners. The method is based on the application of systems engineering and engineering management methodologies, particularly IDEFO-based Models, to create Scrum and XP instructional guides. Experimental evidence revealed this approach was effective in terms of the perceived usefulness, learning, and value of the guides among subjects with moderate-to-high experience or knowledge related to Agile methods, but among novice subjects. Thus, the authors identify a research gap related to designing more effective instructional methods for Agile novices.

The sixth article, “Dynamic capabilities and critical factors for boosting sustainability-oriented innovation: systematic literature review and a framework proposal,” by Rodrigues and Fabiana Gohr utilizes systematic literature review to develop a conceptual framework illustrating how dynamic capabilities (DC) and other critical factors (CF) can be used to support sustainability-oriented innovation (SOI). This framework will aid managers in developing SOI within their organizational spheres by directing their attention to influential variables (e.g., networking capability was the most cited DC in existing literature) and enable the organization to conduct gap analysis against the variables. The authors identify research gaps related to empirically validating the framework, as well as additional empirical exploration of the interrelationships between CF, DC, and SOI.

The seventh article, “Interrelationships among Factors Influencing Multimodal Transportation Efficiency of Agricultural Products in Thailand” by Pongsayaporn, Chinda, and Ammarapala, explores how economies such as Thailand, which currently rely primarily on roads for the transportation of goods, can more effectively manage the transition to a multimodal logistics system. They suggest that the focus should first be on improving multimodal infrastructure, but that multimodal infrastructure, operation, multimodal service provider, market, and road constraints are all strongly interconnected. Thus, these interrelationships provide several points of leverage for decision-makers, at the trade-off of increased risk and complexity.

In the eighth article, “Augmented Reality for Managerial Tasks: Review and Implications for Engineering and Operations Management,” Nelson and Keathley conduct a systematic literature review to explore whether Augmented Reality (AR) can be successfully employed for managerial tasks, as it has been for operational tasks. They find that AR has substantial promise to support managerial learning and decision-making by providing real-time access to rich data. However, the application of AR to managerial tasks is in its infancy and has primarily been explored in construction management and manufacturing. Therefore, there is a need to expand the exploration of this promising new technology in other managerial environments (e.g., healthcare, other service settings). Further, studies that directly address the challenges of AR adoption for managerial tasks, particularly those related to organizational culture and other socio-technical factors, are another critical research gap.

The ninth article “Combining ERP, Lean Philosophy and ICT: An Industry 4.0 Approach in an SME in the Manufacturing Sector in Spain” is of interest to practitioners in that it provides a detailed case study of how a small-medium enterprise can become more agile in order to react better to the constantly changing business environment.

Tenth is “Dynamic Capabilities, Eastern Relationships, and Competitive Advantages: An Empirical Assessment of Chinese and South Korean International Contractors.” Practitioners working in a global business environment will find this paper interesting as it explores the impact of culture and political relationships on projects involving teams from different countries and cultures.

The eleventh article, “A Fuzzy Decision-Making Framework for Route Selection in Multimodal Transportation Networks” adds to the multimodal transportation decision-support literature by providing a novel method for incorporating several existing fuzzy analysis techniques into a decision-making framework for multimodal transportation routing.

Natural disasters are a fact of life that enterprises must respond to. Practitioners in disaster-prone areas with find interest in the twelfth and final article in this large backlog-reduction issue. “A Hybrid Decision Support Model for Deploying Humanitarian Operations to Respond to Earthquakes” provides a framework for planning the “location of emergency facilities, prepositioning of supplies, evacuation, and relief distribution” in response to earthquakes.

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](http://smith@ise.msstate.edu/)), Jennifer Cross ([jennifer.cross@ttu.edu](http://jennifer.cross@ttu.edu/)) and Simon Philbin ([philbins@lsbu.ac.uk](http://philbins@lsbu.ac.uk/)).