

Editorial for February 2016 Issue

I. SPECIAL ISSUES

THIS ISSUE includes calls for papers for two special issues: 1) Shortages of Resources, Routines, Reputation, or Regulations: Threats or Opportunities for Tech Entrepreneurs; and 2) Design and Management of Sustainable and Resilient Supply Chains. The first special issue aims to publish a set of original articles that explores the impacts of shortages of resources, routines, reputation or regulations, and how these shortages create threats or opportunities for new business ventures, or their emergence. The second special issue aims to look at the sustainability–resilience relationship from a supply chain perspective—i.e., challenges and rewards associated with the design and management of sustainable and resilient supply chains. We encourage all readers to consider submitting papers to one or both of these special issues.

Proposals for special issues on topics of current interest in engineering, technology, and innovation management are always welcome. Please send a brief description of the concept for the issue to me (sabherwal@ieee.org). I will circulate it to the Department Editors, and if the initial response is favorable, I will request a specific plan and more detailed information to be used in the final decision about proceeding with the special issue.

II. ONLINE SUBMISSION AND REVIEW SYSTEM

The journal office currently experiences many returned e-mails via the journal's online system. Since e-mails are used to communicate with corresponding authors, coauthors, and reviewers during the review process, it is very important for users to keep updating their accounts in the system. Please login to <http://mc.manuscriptcentral.com/tem-ieee> to update your contact information when you change your e-mail addresses. New users are also welcome to create your own accounts in the system.

Also, please be sure that the SPAM filters on your own servers are set to receive mail from Manuscript Central. The journal's online server should be whitelisted to mark it as a valid e-mail sender: 170.107.181.135.

III. ABOUT THIS ISSUE

This issue of the IEEE TRANSACTIONS ON ENGINEERING MANAGEMENT includes ten research articles. The relevance and usefulness of the articles is summarized as follows.

“Promoting Continuance Through Shaping Members’ Social Identity in Knowledge-Based Versus Support/Advocacy Virtual Communities” (by Song and Phang): Managers of virtual community (VC) are confronted with issues of how to retain existing members and promote continuous interaction in the VC. Being

a virtual interaction space, the extent to which members have a sense of social identity is essential to promoting continuance intention. However, it is important to recognize that social identity is neither a unidimensional concept, nor virtual communities are universal in nature. The research findings from examining two variants of VCs, one focusing on knowledge sharing and another on support/advocacy, may provide some practical insights on this matter. Specifically, the authors suggest that knowledge-based VC providers should focus on nurturing cognitive social identity among their members, while support/advocacy VC managers should emphasize on nurturing emotional social identity among their members. In addition, the findings suggest developing appropriate VC artifacts that can support the development of the two social identity dimensions. In knowledge-based VCs, a higher emphasis should be put on developing deep profiling features. In contrast, support/advocacy VC managers should emphasize on developing self-presentation features.

“A Bricolage Perspective on Technological Innovation in Emerging Markets” (by Gurca and Ravishankar): This paper shows how emerging market managers can turn their firms’ resource limitations into significant cost advantages through creative resource recombination and innovative collaboration, potentially disrupting global markets with high-tech discontinuous innovations. In addition, this paper can help managers from developed countries derive contextual intelligence, which is often crucial for the development and deployment of successful business models in emerging markets.

“Project Personnel, Job Demands, and Workplace Burnout: The Differential Effects of Job Title and Project Type” (by Pinto, Patanakul, and Pinto): While project organizations increase in number and size and project-based work continues to grow in popularity through its acceptance and use in diverse industries, many consider project-based work to be demanding that can lead to workplace burnout. To have a better understanding of job demand and workplace, this study was conducted to investigate the degree of job demand and workplace burnout with respect to roles of project management personnel (project manager, engineer, and project team member) and the project types (construction, R&D, and Information Technology). A better understanding of job demand and workplace burnout should provide management with a basis for taking necessary actions to monitor the psychological health of their personnel to better recognize the onset of workplace pathologies and creating appropriate working environments that can accommodate project personnel with enhanced job demand and alleviate workplace burnout.

“Green Process Innovation and Financial Performance in Emerging Economies: Moderating Effects of Absorptive Capacity and Green Subsidies” (by Xie, Huo, Qi, and Zhu): Green technological innovation may potentially increase costs for firms. Therefore, serious consideration must be given to ways

in which the costs and benefits of sustainable development processes may be balanced. Based on the research findings, several management recommendations can be made as follows.

- 1) Firms should make greater investments in cleaner technology. Compared with the end-of-pipe technology, the more recent adoption of cleaner technology shows superiority in improving firms' financial performance, which indicates that it is necessary to give particular attention to the adoption of cleaner technology in order to benefit more from green technological innovation.
- 2) Firms should leverage their absorptive capacity to strengthen the positive effects of green technological innovation on their financial performance. Absorptive capacity is an important resource to enhance firms' competitiveness, enabling firms to realize increased revenue from green technologies.
- 3) Policy makers are encouraged to develop a series of environmental legislation and environmental friendly incentive policies promote the adoption of the green technological innovation. More importantly, preferential policies such as low-interest loans, financial subsidies, and joint research should be offered to promote firms to adopt green technological innovation.

"Assessing IT Management's Performance: A Design Theory for Strategic IT Benchmarking" (by Ebner, Muller, Urbach, Riempp, and Krcmar): This study provides a field-tested instrument for SITBM that can be readily used in different organizational settings. In particular, the authors provide validated operationalization of strategic performance indicators enriched with definitions and examples, which help to provide useful and reliable data, and, eventually, the desired strategic insights. These operationalization may not only be used in benchmarking, but can also serve as a basis to develop a balanced scorecard for IT management, or to revise an IT organization's internal controlling scheme. In addition, this design theory will help IT managers to develop their own benchmarking instruments to understand the relevant content they should capture in their strategic assessments and to comprehend a benchmarking instrument's structural requirements. Furthermore, the lessons learnt from the instrument development will guide practitioners on how to optimally apply the instrument and conduct their own SITBM.

"A Stochastic ANP-GCE Approach for Vulnerability Assessment in Water Supply System With Uncertainties" (by Zhang, Liu, Jin, and Liu): This paper presents a stochastic multicriteria assessment approach that calculates and ranks the vulnerability of each component. The proposed assessment approach has been developed by applying the stochastic ANP-GCE weight calculation approach, which is able to deal with uncertainties in the real cases. The assessment results are clearly valuable to decision makers concerned with resource allocation, urban planning, and emergency response. First, the proposed approach can be used to identify the most vulnerable districts under a range of possible scenarios and the dominating criteria for different districts base on ArcGIS, and gives an improvement direction. Second, the proposed stochastic ANP-GCE is capable of handling the uncertainties and inconsistencies of expert opinions.

Finally, the use of ArcGIS helps to visualize vulnerabilities and sensitivities spatially, thus making the decision process more intuitive. Moreover, the criteria weights constituting Nash Equilibrium points that determined by GCE improve the objectivity of stochastic ANP. This approach is specifically efficient when experts are unable to give precise values for pairwise comparisons or the criteria weights change with scenarios. Moreover, although the approach is motivated by vulnerability assessment, it has potential applications in that kind of assessment problems constructed by the ANP frameworks.

"Design Structure Matrix (DSM) Extensions and Innovations: A Survey and New Opportunities" (by Browning): The DSM, also called the dependency structure matrix, has become widely used by practicing engineers, designers, and managers to model a variety of systems, networks, structures, and architectures. The DSM brings advantages of simplicity and conciseness in representation: it is much easier to read and discern patterns in a large DSM than a node-link diagram or graph. The DSM is also amenable to analysis techniques that identify and highlight important patterns in system architectures such as modules and cycles. With the explosion of the DSM literature in the past 20 years, it is important to survey, categorize, and elucidate what has been done and what needs to happen next. DSM users will be pointed to the state-of-the-art references on building, displaying, analyzing, and applying product, process, and organization DSMs. The survey also covers DSM applications in other domains such as requirements, tools, and software, as well as recent developments with domain mapping matrices and multidomain matrices. As DSM methods become more mainstream—especially in the areas of engineering design, engineering management, management/organization science, and systems engineering—managers will benefit from this guidance as they grapple with complexity in projects, products, processes, organizations, and other systems.

"Extending the Multimode Resource Constrained Project Scheduling Problem by Including Value Considerations" (by Balouka, Cohen, and Shtub): This research develops a mathematical model for Lean New Product Development (LNPd). The model's objective is to maximize a project value subject to constraints, such as a due date, a performance target, a given budget, etc. It can be used in conjunction with existing Lean practices to improve LNPd. The suggested model follows Lean principles so it is natural for use by those who apply LNPd, as well as a stand-alone decision support tool. Interactions between a project's value, different design configuration, the project's duration, cost, and resource management policies are considered in the suggested model. The output includes an efficient frontier that allows one to focus on efficient design configuration and project plan that include mode selections, schedules, and resource management decisions. The approach, which can be used for planning as well as for project control, is illustrated through examples based on real projects.

"Evaluating the Applicability of Sea-Basing to Support the Preparation for, and Response to, Rapid Onset Disasters" (by Tatham, Kovacs, and Vaillancourt): It is estimated that some 60% of the income of nongovernment organizations is spent on the procurement, transport, warehousing, and delivery of

supplies that are needed in development/emergency response operations. This paper demonstrates how, even in the aftermath of a rapid onset disasters such as an earthquake or cyclone, the use of sea—as distinct from air—transport into the affected region could deliver a significantly more efficient response with the potential for further effectiveness enhancements. Depending on the actual model of shipping used, the saving in transport costs is, potentially, as high as 40%. It is argued, therefore, that further detailed research into the potential use of sea-basing

(or floating warehouses) should be undertaken as this approach represents a highly practical and sustainable way of providing support to those affected by such events.

RAJIV SABHERWAL, *Editor-in-Chief*
Sam M. Walton College of Business
University of Arkansas
Fayetteville, AR 72701 USA
sabherwal@ieee.org