

Call for Papers

Special Issue of *IEEE Transactions on Engineering Management on Design and Management of Sustainable and Resilient Supply Chains*

Submission deadline: 30 September, 2016

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Organizations are under varied and increasing pressure from a broad spectrum of stakeholders to incorporate sustainability measures into their supply chain (SC) management practices. In this environment, the development and availability of analytical models and decision support tools can help organizations make more effective and informed decisions. To respond to this call, academic research on sustainable SC design and management has seen substantial development over the past two decades (Fahimnia et al., 2015; Seuring, 2013). Most of the efforts to achieve SC sustainability have been predominantly directed at reducing environmental burdens of the SC, commonly measured in terms of greenhouse gas emissions and resource consumption (Fahimnia et al., 2014). The social sustainability aspect has focused more on the potential damage to human health and the community/society at large (Boukherroub et al., 2015).

One of the most salient and cogent “business case” arguments for the adoption of sustainable SCs is the issue of maintaining business continuity. The incorporation of environmental and social goals into the traditional cost-oriented SC management practices reduces long-term business risks and is strategically prudent (Reinhardt, 1998; Sarkis, 2009). Business continuity is also a key feature of “SC *resilience*”. A resilient SC can be defined as one whose operations remain unaffected or minimally affected when a facility or multiple facilities are disrupted by a natural or manmade disaster. The increasing frequency and intensity of natural disasters as well as a continuous stream of anthropogenic catastrophes necessitate the design of more resilient SCs that are more responsive and flexible when facing such unavoidable risks (Jabbarzadeh et al., 2014).

The literature and importance of both SC sustainability and resilience have expanded greatly in recent years (Fahimnia et al., 2015; Pereira et al., 2014). However, the investigation of these two topics together has yet to be explored in a focused and nuanced way. The impact of sustainability interventions on the overall resilience of the SC and the impact of resilience building practices on the sustainability performance of the SC has remained unexplored. Sustainable SC management in an environment characterized by frequent unavoidable disruptions necessitates sustainability modeling

and analysis that can accommodate this complexity and dynamism. This calls for management approaches and methodologies to help design and plan resilient and sustainable SCs.

Discussions of integrating sustainability with resilience are at a relatively early stage of development (Derissen et al., 2011; Fiksel, 2006; Perrings, 2006; Walker and Salt, 2006). The empirical, experimental and quantitative modeling efforts in these two areas have been conducted in isolation. In reality, there are situations in which sustainability and resilience building initiatives can influence each other. For example, efficiency maximization and waste minimization practices necessitate the use of fewer stock points and storage areas along the SC. Whilst such strategies may be environmentally sound and economically prudent, they may inadvertently impact the SC resilience given the limited availability of safety stock inventory to cope with supply and demand variations. In another example, sustainable sourcing practices imply the need to purchase from and outsource to more sustainable suppliers only. Working with a handful of better performing suppliers comes with an unintended inability to switch between suppliers when facing a supply crisis, but then a buying firm would have the opportunity to build a trust-based relationship with its small number of sustainable suppliers, which would mean that operational disruptions at supplier facilities are less likely to remain unrevealed to the buying firm. In such cases, there might be tradeoffs taking place between negative and positive effects. The relationship and issue facing operational aspects also has broader implications such as cascading effects of lack of resilience or sustainability in one supply chain on those in adjacent industries and supply chains. These are some concerns that require study and we would like to see addressed within papers for a special issue.

This special issue aims to look at the sustainability-resilience relationship from a supply chain perspective. We invite original contributions from researchers and industry professionals that investigate the challenges and rewards associated with design and management of sustainable and resilient supply chains. We welcome empirical and experimental studies with significant theoretical contributions. We also encourage analytical and optimization modeling efforts that explore sustainability-resilience relationship in real world situations.

The targeted audience of this special issue includes researchers working in relevant fields as well as industry practitioners, supply chain professionals and policy makers (due to the practical application aspect of the work).

Review Process: The special issue's guest editors, the journal's editorial review board members, and *ad hoc* reviewers will referee the submitted papers. We anticipate *no more than* 3 months each for the first two rounds of review, and 1 month for the final round. If invited to revise their manuscript, the authors will be given 3 months for the first revision, 2 months for the second revision, and 1 month for the final submission.

Submission Process: Please prepare the manuscript according to IEEE-TEM's guidelines (<http://ieeetmc.org/tem-guidelines>) and submit it by September 30, 2016.

Please submit your manuscript at the journal's Manuscript Central site (<https://mc.manuscriptcentral.com/tem-ieee>), select Behnam Fahimnia, Joseph Sarkis, and Srinivas Talluri as preferred editors, and clearly state in the cover letter that the submission is for this special issue. Questions regarding this special issue can be sent to behnam.fahimnia@sydney.edu.au, jsarkis@clarku.edu, or Talluri@bus.msu.edu

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