POM Special Issue

Responsive and Flexible Manufacturing Ecosystems: Stand-by Capability, Hybrid Manufacturing Approaches, and Reshoring

Guest editors: Elliot Bendoly and Christopher S. Tang

Manuscript submission deadline: December 1st, 2021

Background: Technological advancements have transformed global supply chain operations (Lee 2004). However, these transformational changes have not come without risk. The Covid-19 pandemic exposed underlying vulnerabilities associated with outsourcing and offshoring when disrupted supply was unable to meet volatile demand. The prolonged shortages of many critical products stoked public fear in the U.S. and prompted a call for reshoring to improve supply chain responsiveness during emergencies.

Whether due to innovation, shifting social preferences or natural crises, manufacturers lacking sufficient responsiveness to demand and supply shocks run the risk of being squeezed out by more flexible elements of their respective industries (Craig et al. 2018, Sodhi and Tang 2017, Vickery et al. 2016, Sodhi et al. 2012, Bendoly et al. 2012, Bendoly et al. 2009, Bharadwaj et al. 2007). This is clearly not a challenge faced by an individual firm alone, but by the entire ecosystem comprised of focal firms, their upstream and downstream partners and consumers along the supply chain. This challenge also involves national and local governments, poised to establish and promote policies for improving the responsiveness of firms, their supply chains as well as their associated intellectual property.

Further, from a tactical perspective, to truly advance a firm’s responsiveness, the concept of flexible manufacturing systems must be “expanded” to capture the role of flexibility in operational management, production capacity and production capability. This should include the deployment of standby capabilities that can be converted into production capacity when needed, hybrid approaches to manufacturing (e.g. leveraging both conventional mass production and additive manufacturing tactics), changes to organizational bureaucracy, and a broader perspective of the value of market and innovation ideas that go well beyond the walls of individual organizations (Babich and Hilary 2020, Tang and Veelenturf 2019, Olson and Tomlin 2019, Kumar et al. 2018, Kouvelis et al. 2009). To improve responsiveness to market change, there is a need to leverage consumers as co-producers, and establish novel alliances and partnerships (which include mergers and acquisitions). These engagements entail broader perspectives of knowledge management and require alternatives to conventional information technology management decisions and approaches.

We refer to this expanded collection of harnessed entities and tactics as a firm’s “flexible manufacturing ecosystem.” The proper configuration of such an ecosystem can not only ensure a firm’s financial sustainability, it may also enable a greater localization of supply chain relationships (reshoring) as well as associated benefits to community and environmental commitments and goals. However, such efforts to advance responsiveness and flexibility through efforts that broaden these ecosystems must also take into consideration the challenges, costs and risks of doing so. The best ecosystems recognize these issues, and are characterized by configurations whose benefits far outstrip such costs; Not merely by chance, but because sufficient intelligence is used in their design.
Call for submissions: This special issue calls on researchers to consider novel paradigms for managing manufacturing capabilities, emblematic of flexible manufacturing ecosystems. Areas of focus include but are not limited to the following:

- Advanced integration of consumer feedback and sentiment to anticipate new product design and development opportunities.
- Advanced crowdsourcing efforts of external innovation ideas for incorporation in New Product Development (NPD) efforts.
- Full integration of enterprise and extended-enterprise data to identify risks and opportunities in manufacturing planning.
- Hybridization of mass-production / mass-customization efforts through the integration of additive manufacturing, internet of things, autonomous vehicles (including drones), and advanced robotics to complement conventional manufacturing approaches.
- Organizational changes in employee training and role orientation (e.g. away from product-specific designations and towards flexible technology roles).
- The rationalization or reshoring of supply chains to better accommodate and respond to frequent changes in local demand.

In this call, we are open to submissions that leverage any methodological approach, including normative modeling, controlled laboratory experiments, large-scale survey efforts, secondary data examinations, field and case studies. However, preference will be given to research efforts that make use of real-world data describing organizational practice, either for direct empirical examination or to strongly motivate other applied methods.

**Deadlines**

Manuscript submissions: December 1\textsuperscript{st}, 2021
Initial (first-round) decisions: March 1\textsuperscript{st}, 2022
Revised paper resubmissions: June 1\textsuperscript{st}, 2022

Authors are encouraged to contact the editorial team in case of doubt regarding the fit of the paper to the editorial scope of this special issue. Manuscripts that are submitted prior to the submission deadline will receive immediate consideration.

Please follow the detailed submission guidelines provided at [http://www.poms.org/journal/author_instructions/](http://www.poms.org/journal/author_instructions/)

The paper should be submitted to manuscript central ([https://mc.manuscriptcentral.com/poms](https://mc.manuscriptcentral.com/poms)). While submitting the paper, please be sure to identify in Step 1 that the paper is being submitted for the special issue. In the Department Editor list, please choose this special issue.
Guest Editors

Elliot Bendoly is the Fisher College of Business Distinguished Professor in the Management Sciences, at the Ohio State University, and Operations Management Distinguished Scholar at the Academy of Management. He has served in the role of co-Director for the Specialized Masters for Business Analytics program, Management Sciences PhD Coordinator, Associate Dean for Fisher’s Undergraduate program and the Caldwell Research Fellow at Emory University. Professor Bendoly currently serves as Senior Editor at the Production and Operations Management journal (Behavioral Operations and Management of Technology departments) and Associate Editor for JOM. His own publications in POM, JOM, Management Science, Information Systems Research, MIS Quarterly, and Journal of Applied Psychology, represent no less than 27 published academic articles, with 32 additional articles appearing in other peer reviewed outlets. He has authored Excel Basics to Blackbelt (3 Editions), Strategic ERP Extension and Use, Handbook of Research in Enterprise Systems, Handbook of Behavioral Operations Management, and Visual Analytics for Management.

Christopher Tang is a Distinguished Professor at UCLA and the holder of the Edward W. Carter Chair in Business Administration at the UCLA Anderson School of Management. He has been the Senior Associate Dean of the UCLA Anderson School, a senior adviser to the President of National University of Singapore (NUS), Dean of NUS Business School, and President of the Production and Operations Management Society (POMS). He serves as Editor of Manufacturing & Service Operations Management, and he has served as Guest Editor of Production and Operations Management, Journal of Operations Management, and Management Science, Department Editor of Management Science, Operations Research, Production and Operations Management, and IIE Transactions. He has published 6 books, 30 book chapters, over 100 online blogs, 25 articles in leading press such as Wall Street Journal, Barron’s, and Financial Times, and over 160 research articles in various leading academic journals and received several research awards. He is a Fellow of the Production and Operations Management Society (POMS), the Institute of Operations and Management Sciences (INFORMS), and the Manufacturing and Service Operations Management Society (MSOM).
References


