

Call for Papers

Special Issue of *Production and Operations Management Journal*

“Disruptive Technologies and Operations Management”

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Production and Operations management has entered Industry 4.0, making smart and data driven operations a reality. Technologies such as Artificial Intelligence (AI), Blockchain, and 3D printing, are giving rise to new opportunities and their associated operational challenges. Operational intelligence is being embedded into interconnected devices supported by cloud and mobile computing. Digital production technologies and IT-enabled management processes are generating a massive amount of data that are being leveraged to improve the operational capabilities and the long-run performance of businesses. Examples include the cheaper and faster coordination of global supply chains and the improved flexibility and customization of products and services.

Looking into the future, it is clear that Industry 4.0 technologies (e.g., data analytics, big data, AI, etc.) have changed the way many companies operate. While earlier waves of automation also had profound effects on business and society, current Industry 4.0 technologies strike at the very heart of what humans preserve, namely, knowledge work. As these technologies further penetrate knowledge work to replace humans, the worry is that there will be large-scale layoffs, together with data security and privacy issues. To be specific, in the coming Industry 5.0 era, in order to create real value for humans, operations management should strike a balance between machines and humans, and focus on more holistic practices and social responsibility. With a view toward Industry 5.0, we invite submissions that study operational challenges and solutions aimed toward the so called “human-machine reconcile.”

The Production and Operations Management Journal recently created a new department on “Disruptive Technologies and Operations Management.” This special issue aims to attract submissions that explore operations management challenges and solutions in Industry 4.0 (where the focus is on operational

challenges that arise from disruption) as well as Industry 5.0 (where the focus is on reconciling humans and machines). Topics include, but are not limited to, the following:

1. Applications of Blockchain, IoT, AI technologies, and 3D printing in Operations Management.
2. Information Intensive Operations Management
3. Operations Management with machine-man reconcile.
4. Socially Aware Operations Management
5. Optimal control of human-machine operations.
6. Systems theory for human-machine operations management.
7. Technology management in Industry 4.0 and Industry 5.0
8. Operations economics in the Industry 5.0 era.
9. Sustainability of operations with disruptive technologies.
10. Information management for operations in the Industry 5.0 era.

We welcome submissions that examine operational problems that arise outside the traditional boundaries of manufacturing and service operations. These include areas such as finance, information systems, marketing, accounting, etc. The submission can use any method and methodological tradition that serves as an appropriate framework to analyze problems: analysis of data, mathematical analysis, behavioral theories, etc. We expect the study to address a new (and potentially game-changing) phenomenon, with a sufficient level of rigor that is consistent with the high standard of the journal.