

The Future of Manufacturing Global Value Chains, Smart Specialization and Flexibility!

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Abstract *The future manufacturing and global value chain will be highly dominated by technological and business innovations to cope with the accelerating pace of changes in consumer behaviour and global business environment. This editorial for the special issue “The future of manufacturing: global value chains, smart specialization and flexibility” enriches the topic of future of manufacturing operations and supply chain management literature. In the line with the theme, this special issue publishes five articles that clearly articulate the emerging thematic discussions.*

Keywords Flexibility · Future of manufacturing · Global value chains · Smart specialization

With the passage of time, manufacturing’s role is changing; however, manufacturing still remains very essential to both the developing and the developed economies. Global manufacturing has undergone an enormous change led by automation, innovation, high flexibility, agility and higher efficiency. Due to the faster pace of technological change and competitive pressure, future manufacturing arena needs to be highly tech savvy, effective and efficient. Thrived by cyber-physical systems, “big data” and analytics, internet of things, wider use of robotics and artificial

intelligence future manufacturing environment will potentially be able to meet the future consumers’ demand.

However, increased volatility, resource shortage and geographical dispersion have made global manufacturing value chains more complex, uncertain, interdependent and more vulnerable. In order to keep pace with the future manufacturing mega trend and to meet the complex environmental dynamics, future organizations need to shape and reshape their value chain processes and strategies, adopt highly flexible, agile, robust and resilient systems. Such systems also help them develop readiness, response and recovery capability to any unexpected disruptions whilst maintaining the continuity of business operations. Though the emergence of global value chain reengineering, smart specialization, agility, flexibility and robustness are highly compelling for future manufacturing landscape, studies on management theories and framework for addressing future manufacturing mega trends are still in nascent stage. This special issue focuses on the various aspects of future manufacturing to enrich the operations and the supply chain management literature in this field. The theme of the special issue is: The future of manufacturing: global value chains, smart specialization and flexibility, and in line with this theme there are five papers that clearly articulate the emerging thematic discussions.

The first paper “From supply chain integration to operational performance: the moderating effect of market uncertainty” (Lu et al. 2017) investigates the relationship between the supply chain integration and the manufacturer’s operational performance under market uncertainty. In this paper, market uncertainty has been considered as an exogenous moderating factor. This study suggests that there is a nonlinear relationship between the supply chain integration and operational performance and that this

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“nonlinearity” can be significantly moderated by the market uncertainty.

The second paper titled “Development of strategic value chain framework for Indian car manufacturing industry” (Yugal et al. 2017) aims at developing a strategic value chain framework for the Indian car manufacturing industry. This study uses decomposition approach based on axiomatic design principles for defining a number of strategies aligned with balanced scorecard of Kaplan and Norton (1992) that are applicable to the various elements of the Indian car value chain, thus enhancing the competitiveness of the car industry.

The third paper “Strategies for mitigating supply side barriers in the apparel supply chain: A study on the apparel industry of Bangladesh” (Chowdhury et al. 2017) focuses on identifying the supply side barriers and selecting most effective strategies to mitigate the barriers of apparel industry in Bangladesh using an analytic hierarchy process and quality function deployment method. Study finds that long lead time, interruption in utility supply, on-time supply problem are the most important supply side barriers. Corresponding to the barriers, the most important identified strategies are efficiency in planning, quick response and commitment for meeting on-time delivery. The implications of findings are discussed.

The fourth paper “Barriers to reverse logistics in the computer supply chain using Interpretive Structural Model” (Ali et al. 2017) examines the contextual relationship and interactions among barriers to implement reverse logistics practices in the computer supply chain of Bangladesh using interpretive structural modelling (ISM) technique. The findings reveal that financial constraints and lack of interest from top management are the most influential barriers to reverse logistics for the computer supply chains of Bangladesh.

The fifth paper “The Flexibility Paradox—Achieving Ambidexterity in High-Variety, Low-Volume Manufacturing” (Mile and Agarwal 2018) investigates the interplay between flexibility and ambidexterity in the context of high-variety, low-volume (HVLV) manufacturing as well as the use of different management practices to manage this relationship for enhanced organizational performance. This theoretical paper builds off the contributions from the paradox-based view of tensions and organization theory using insights from an extensive literature review. This paper is instrumental as it moves beyond the dominant paradigm of efficiency-driven research in HVLV manufacturing and provides managers with insights and ability

to make informed decisions through the use of flexibility in achieving ambidexterity.

Clearly, increased volatility, unprecedented technological advancements and geographical dispersions have compounded in recent years, thus demanding greater flexibility, agility, robustness and resilience within global value chains. Henceforth, in an increasingly volatile business landscape, managers are looking to build flexibility into their global value chains be it services or manufacturing. Future flexible global value chains, a nascent and emerging field in management theory, is indeed advancing, and the papers published in this special issue are adept to the radical shifts occurring in contemporary value chains. More so, as firms migrate from traditional modes of production and consumption to new business models, managers are to equip themselves with capabilities which are centred on collaboration and see customers as a strategic resource for value co-creation. No doubt, these academic papers provide grounding to flexible global value chains which will help foster a strategic understanding of how supply chains impact profitability, competitiveness and growth, whilst delivering innovative products and services to their consumers through collaboration.

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