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Invited Session on:

Decision Analytics and Digitization for End-to-End Supply Chain Transformation

Proposed by:

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Aim and content of the invited session:

Digitalization has altered different dimensions of life around the world in this new era marked by a dynamic and complex atmosphere and a competitive economic marketplace. It has a substantial effect on supply chain processes, and it is clear that moving from a conventional supply chain to a digitalized supply chain is a competitive advantage that provides organizations with long-term value. Furthermore, the use of business analytics applications in decision making is becoming more common in today's organisations, and the significant changes such applications have brought to both centralised and distributed organisations have prompted decision makers to rethink how they capture, process, and analyse both structured and unstructured data and make decisions. Decision-makers need a collection of tools that allow them to analyze datasets and perform descriptive, predictive, and prescriptive analytics in order to develop key performance indicators that will help them enhance organizational performance.

"Digital technologies" present a paradigm and collection of many smart and adaptive technologies that enable connectivity, communication, and automation in the era of Industry 4.0; these technologies include Internet of Things (IoT), big data analytics, and cloud computing (Frank et al., 2019; Ardolino et al., 2018; Ivanov et al., 2019). New business models fueled by digital transformation, and e-commerce are earning popularity and fast dispersion and adoption across individuals, enterprises, and governments. As a result of this expansion, the number of supply chain activities that create enormous volumes of data has increased dramatically. Sensors, global positioning systems (GPS), radio frequency identification (RFID), social media and networks, and blockchain distributed ledger technology are all used to collect data (Li et al., 2020). It is vital to manage and analyze Big Data in order to reveal relevant insights to endorse these emergent digitalized business models. In order to provide cost-effective and long-term services, they must implement new and innovative supply chain solutions in this digitized environment, leveraging current digital breakthroughs and Big Data availability.

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This invited session welcomes innovative ideas and applications of decision analytics and digitized supply chain. Topics to be captured contain, but are not limited to, the following:

- End-to-end supply chain visibility
- Supply chain predictive analytics modeling
- Supply chain predictive maintenance
- Big-Data analytics
- Automation of warehousing; autonomous and smart Vehicles
- Human-machine interfaces
- Smart logistics planning and transportation systems
- Dynamic supply chain network configuration
- Supply chain customer fulfillment and collaboration
- Digital supply chain operations and technology solutions
- Supply chain manufacturing operations & strategy
- Industry 4.0 and smart manufacturing
- Inter-organizational information and data management
- Automated data-driven decision-making
- Digital supply chain to deal with a pandemic
- Other related aspects are also welcome

We especially encourage research that contributes to the development and study of operational decision-making methodologies, drawing on all elements of supply chain digitization, decision theory and decision analysis.

References:

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Ivanov, D., Dolgui, A., & Sokolov, B. (2019). The impact of digital technology and Industry 4.0 on the ripple effect and supply chain risk analytics. *International Journal of Production Research*, *57*(3), 829-846.

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