

Introduction to the minitrack on Digital and Hyperconnected Supply Chain Systems

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Uncertainty is the new normal! This statement is now obvious to anyone and Supply Chain Systems (SCSs) are particularly sensitive to this new reality. To perform better and in a sustainable manner, SCSs have to change drastically the way they are managed and the associated decision-making tools. To support such a revolution, they can benefit from the huge digitalization capabilities that have been developed in and for SCSs recently. SCS data is now big and accessible. In parallel, SCSs are more and more closely connected, internally and externally. This is the era of hyperconnectivity. This concept, initially associated to the Physical Internet paradigm, implies to interconnect all the stakeholders of a SCS on multiple levels including physics, operations, business, legal and human resources.

The Digital and Hyperconnected SCS' minitrack aims to discuss and study the potentialities of digitalization and hyperconnectivity in the context of this new normality. It notably looks for innovative research works and proposals able to move toward more appropriate standards, processes or decision support tools. For the 2023 HICSS edition, two great papers have been selected by reviewers. The first one deals with the optimization of blockchain technologies in SCSs while the second one proposes to use an original simulation model to better assess readiness capability of a SCS in a hyperconnected environment.

1. Simulation-based Assessment of Hyperconnected Humanitarian Supply Chains Response Readiness

Tianyuan Zhang, Manon Grest, Souad Rabah, Gregory Zacharewicz, Frédérick Benaben and Matthieu Luras

SCSs' new challenges force to continually improve the operations to provide a better service or product. Transformation towards hyperconnected supply chains is one of the most promising paths and the Physical Internet could provide a paradigm for this evolution. However, the impact of this shift on the SCS's performance, particularly readiness, has been understudied. To address this issue, the paper develops a simulation-based assessment of hyperconnected supply chains' response readiness, based on a humanitarian context. The findings of this work provide insights into the transformation towards hyperconnectivity and opens numerous avenues for future research.

2. How to Reduce Information Silos While Blockchain-ifying Recycling Focused Supply Chain Solutions?

Somnath Mazumdar

Blockchains have been used in SCSs context to ensure transparency. However, information managed through blockchains remain in silos, limiting the associated impact. This paper develops a blockchain-IoT-based framework for SCSs. Key findings of the proposal are a reduction of data sitting in silos while opening doors to circular economy-focused service, and a documentation of suppliers' performances while delivering quality products focusing on sustainability. In addition, SCSs stakeholders can also use the framework to better access to important events all along the product's lifecycle.