

Invited Session on “Industry 4.0 Collaboration and Sharing Economy Platforms”

Invited session identification code 6d611

IFAC MIM 2019 Conference, August 28–30, 2019, Berlin, Germany

<https://blog.hwr-berlin.de/mim2019/>

Session Chairs:

- *Dr. Grigory Pishchulov, The University of Manchester, UK*
- *Dr. Pedro Sampaio, The University of Manchester, UK*
- *Prof. Joao Quariguasi Frota Net, The University of Manchester, UK*

Information and communication technologies have made significant inroads into societies all over the world and have markedly influenced the way in which governments, businesses and individuals act. Commonly termed as digitization, the phenomenon underlying this transition is characterized by collecting, processing and exchanging information in digital form, which makes it easier to connect businesses and people, access and exchange information, as well as convert it to useable knowledge (Rappitsch 2017, Täuscher 2016). This transition is changing existing business relationships and creating new marketplaces, shaping the economy to what is being commonly termed as digital economy (Ciocoiu 2011).

One of its major developments has become the emergence of online service platforms that allow individuals and businesses to share their unused or underutilized resources efficiently and expand the locus of value creation through platform ecosystems (de Reuver et al. 2018, Parker et al. 2017). Examples include ride hailing services like Uber, accommodation services like Airbnb and crowdsourcing services like Amazon Mechanical Turk. Such platforms create new opportunities for resource owners as well as their potential users by letting them find each other in an easier way and thus allow for better matching of supply and demand. This development, embracing a variety of different platforms, underpin the shift towards the ‘sharing economy’ (Benjaafar et al. 2018, Taylor 2018).

A parallel development taking place within the confines of the digital economy is the concept of Industry 4.0, which represents a policy initiative aiming at digitalisation of production processes along the entire value chain. This approach allows for real-time visibility and control of supply-chain processes, which promises flexibility and efficiency gains (Davies 2015, Smit et al. 2016). Much like the technology helping to promote sharing economy via online service platforms, adoption of Industry 4.0 at the inter-firm level has the potential of letting various supply-chain members to establish collaborations ‘on-demand’ and share their capacities and capabilities with each other. Such collaborations bring a number of benefits to the partners, such as better capacity utilization and enhanced customer service. Dedicated online platforms may offer matching demand for productive resources with their supply across participating market players.

The invited session aims to address the barriers, benefits and approaches towards formation of such demand-driven, Industry 4.0-supported collaborations in supply networks and digital service platform ecosystems. The possible methodologies include, but are not limited to: literature reviews, empirical studies, and formal-analytical modelling in conjunction with mathematical optimization, simulation, and game-theoretic analyses.

Session topics:

The session chairs invite researchers and practitioners from academia, industry, and government to contribute theoretical and applied research papers in areas including but not limited to the following topics: *Industry 4.0 collaboration, resource sharing in manufacturing, collaborative manufacturing, matchmaking, coalition formation, virtual enterprises, supply-chain risk management.*

Submission:

For author guidelines, please refer to www.ifac-control.org/events/author-guide. All papers must be prepared in a two-column format in accordance with the IFAC manuscript style. Please use the official IFAC template to prepare your contribution as a full-length paper and submit it online by December 15, 2018. All papers must be submitted electronically using Symposium Manuscript Management System. Submission details are available on the symposium website. All submissions must be written in English. All papers that conform to submission guidelines will be peer-reviewed by IPC members. The corresponding author submits the paper online (pdf format) as **an invited session paper**. Submission as an invited paper requires the **invited session code 6d611**. Several international journals are associated with the MIM 2019 for publication of special issues.

Important dates:

December 15, 2018	Deadline for the submission
February 20, 2019	Notification of acceptance/rejection
March 15, 2019	Deadline for the final submission

References:

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- Ciocoiu, C.N. (2011) Integrating digital economy and green economy: Opportunities for sustainable development. *Theoretical and Empirical Researches in Urban Management*, 6 (1), 33–43.
- Davies, R. (2015) *Industry 4.0: Digitalisation for productivity and growth*. European Parliamentary Research Service, Document No. PE 568.337.
- Parker, G.G., Alstyne, M.W., Jiang, X. (2017) Platform Ecosystems: How Developers Invert the Firm. *MIS Quarterly*, 41 (1), pp. 255–266.
- Rappitsch, C. (2017) *Digital Economy and Sustainability*. Associate report, oikos.
- de Reuver, M., Sørensen, C., Basole, R.C. (2018) The digital platform: a research agenda. *Journal of Information Technology*, 33 (2), 124–135.
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- Taylor, T.A. (2018) On-Demand Service Platforms. *Manufacturing & Service Operations Management*, 20 (4), 704–720.
- Täuscher, K. (2016) *Business Models in the Digital Economy: An Empirical Study of Digital Marketplaces*. Working paper, Fraunhofer MOEZ, Leipzig.