

**SUSTAINABILITY TRANSITION.
CONTRIBUTIONS TO OPERATIONS MANAGEMENT
RESEARCH AND PRACTICE**

ABSTRACT

Sustainability issues pose extraordinary challenges for organizations and societies as they require radical changes at different levels (technologies, institutions, business models, cultures, policies) and the active role of several actors (incumbents, newcomers, investors, academics, policy makers). Given the magnitude and complexity of these societal transformations, a large body of research has started to approach sustainability issues by adopting different angles of investigation. However, the lens chosen until now risk to be too narrow and peripheral for providing a comprehensive view of the phenomenon. The emerging concept of Sustainability Transition addresses this issue by proposing a framework which brings together researchers from different disciplines and involving several levels of analysis (i.e., firms, value chains, industrial ecosystems). This Special Track aims to create a context in which theoretical, methodological and policy-related issues concerning Sustainability Transition are shared and explored among operations management scholars.

BACKGROUND OF THE TOPIC

Considering the threshold limit for global warming recently set at 1.5°C (IPCC, 2018), the governments agenda on climate actions has become sensibly pressing. In particular, the “2050 low-carbon economy” strategy roadmap, suggesting a cut of gas emissions to 80% below 1990 levels, with milestones by 2030 (-40%) and by 2040 (-60%), requires “rapid, far reaching and unprecedented changes in all aspects of society” (IPCC, 2018). Energy-intensive industries, manufacturing firms, agriculture and transportation sectors are listed among the main contributors to gas emissions (EUROSTAT, 2018) and they should be strongly committed to Sustainability Transition (ST), with a cut of more than 80% by 2050, the application of cleaner and more energy-efficient technologies, supply chains and distribution systems.

With the aim of developing an academic conversation on ST from an operations management perspective, the common background for this special track focuses on ST definition. Scholars from different research sectors have widely debated around the definition of ST and critical features for its application in operations management field. Markard et al. (2012; p. 956) refers

to ST as “long-term, multi-dimensional, and fundamental transformation processes through which established socio-technical systems shift to more sustainable modes of production and consumption”. ST represents fundamental shifts of entire industrial sectors and value chains towards a new sustainable level of development (Skellern et al., 2017)

Due to the high impact that operations management decisions have over the sustainability of supply chains and industries, in terms of strategy design, planning and control, ST is gaining relevance for operations management scholars as it poses several challenges, from an empirical and conceptual perspective, and suggests novel theoretical frameworks and interdisciplinary approaches, leading to potentially impactful research.

RELEVANCE FOR EUROMA’S MEMBERS

The topic of ST is current and particularly salient for EurOMA members. ST is an increasingly relevant issue for a wide range of organizations, and therefore ST strategies and practices are gaining relevance. Since many impacts that organizations have on the natural environment and on society are strongly influenced by operations management decisions (Bettley and Burnley, 2008), it is critical that operations management scholars embrace the requirements of ST. This has implications for decisions and processes associated with all aspects of operations management including the management of inter-firm relationships in supply chains, operations management in regional economies, sustainability management in operations and logistics, and moving from linear- to closed-loop value chains by embedding circular economy principles in inter-firm relationships. For example, appropriate environmental and social performance objectives and indicators need to be integrated with quality, cost and other more traditional performance measures. Also, the requirements of other stakeholders in addition to the customer or the shareholder must drive operations decisions. Additionally, the location of facilities may be based on the decision of individual governments to introduce carbon-neutral policies or measures which will place their domestic industries at a competitive disadvantage. In this vein, energy intensive industries may migrate to those countries having less demanding carbon-related regimes. Finally, the sourcing strategies that companies design could focus on decarbonization of entire value chains or on circular economy paradigms. The proposed track offers a novel multi-actor and multi-level perspective on operations management that integrates and moves beyond existing EurOMA tracks.

RESEARCH QUESTIONS

The following questions will guide presenters and subsequent discussions with the audience:

- What are the particular opportunities and challenges for applying operations management theories and frameworks to ST research?
- ST emerges as an interdisciplinary and problem-oriented field of research, how can operations management scholars leverage on this broader perspective on the topic in order to increase the impact of their research?
- Which theoretical frameworks could operations management scholars apply to ST research?
- What kind of methodologies, research designs and data could scholars in this field use in their studies?
- Which is the most appropriate unit of analysis to study ST (organizations, value chains, industrial ecosystems)?
- What is the role of ST in the study of value chains and value networks?
- How could we reconfigure operations management in the light of ST trajectories?

REVIEWERS

Andrea Bellisario

Faculty of Economics and Business Accounting, Nettelbosje 2, 9747 AE Groningen, E-mail:
a.bellisario@rug.nl

Alessandra Bonoli

Department of Environmental Engineering, Via Terracini 28, 40131, Bologna E-mail:
alessandra.bonoli@unibo.it

Patrizia Garengo

Department of Industrial Engineering, Via Venezia, 1, Padova E-mail:
patrizia.garengo@unipd.it

Cristina Mora

Department of Industrial Engineering, Via del Risorgimento 2, 40123 Bologna, E-mail:
cristina.mora@unibo.it

Laura Toschi

Department of Management, Via Capo di Lucca 34, 40131 Bologna E-mail:
laura.toschi@unibo.it

Franco Visani

Department of Management, Via Capo di Lucca 34, 40131 Bologna E-mail:
franco.visani2@unibo.it

ORGANIZERS

Matteo Mura

Department of Management,
Via Capo di Lucca 34,
40131 Bologna
E-mail: matteo.mura@unibo.it

Mariolina Longo

Department of Management,
Via Capo di Lucca 34,
40131 Bologna
E-mail: mariolina.longo@unibo.it

Sara Zanni

Department of Management,
Via Capo di Lucca 34,
40131 Bologna
E-mail: sara.zanni7@unibo.it

REFERENCES

- Bettley A., Burnley S. (2008) Towards Sustainable Operations Management Integrating Sustainability Management into Operations Management Strategies and Practices. In: Misra K.B. (eds) Handbook of Performability Engineering. Springer, London
- Eurostat, (2018). Greenhouse gas emission statistics - emission inventories. Eurostat, Statistic Explained.
- Intergovernmental Panel on Climate Change - IPCC, (2018). SPECIAL REPORT: GLOBAL WARMING OF 1.5 °C.
- Markard, J., Raven, R., Truffer, B., (2012). Sustainability transitions: An emerging field of research and its prospects. Res. Policy 41; 955– 967.

Skellern, K., Markey, R., Thornthwaite, L., (2017). Identifying attributes of sustainable transitions for traditional regional manufacturing industry sectors - A conceptual framework. *J. Clean. Prod.* 140; 1782-1793.