



Production Planning & Control

The Management of Operations

Taylor & Francis

ISSN: 0953-7287 (Print) 1366-5871 (Online) Journal homepage: https://www.tandfonline.com/loi/tppc20

Rethinking supply chains in the age of digitalization

Patrick A. Hennelly, Jagjit Singh Srai, Gary Graham & Samuel Fosso Wamba

To cite this article: Patrick A. Hennelly, Jagjit Singh Srai, Gary Graham & Samuel Fosso Wamba (2020) Rethinking supply chains in the age of digitalization, Production Planning & Control, 31:2-3, 93-95, DOI: 10.1080/09537287.2019.1631469

To link to this article: https://doi.org/10.1080/09537287.2019.1631469

4	1	(1
Ľ			

Published online: 04 Dec 2019.



🕼 Submit your article to this journal 🗗





View related articles



View Crossmark data 🗹

Citing articles: 5 View citing articles

EDITORIAL



Check for updates

Rethinking supply chains in the age of digitalization

Digitalization is the use and adoption of external digital technologies (i.e. resources (such as machine learning, IoT, big data and blockchain)) by organizations, to improve their supply chain and operational performance. Whilst there is a lot of emphasis on the strategic adoption of digital technologies, the work on operational feasibility, maturity and supply chain implementation is scarce. Where it does exist, the work to date, we believe to be speculative and more concerned with 'readiness'. There is a dearth of operational evidence of genuine cases of product/process implementation. Therefore, the scope of this special issue is focused on the contribution that PPC methods can play in understanding digitalization, its feasibility, maturity and integration into operations and supply chain management. Furthermore, the focus is on understanding the organizational conditions facilitating supply chain and production digitalization and its role in performance improvement. All of the articles submitted and included in the special issue went through a single-blind review process. Initially, we had 23 original submissions; these were reduced down to 11 papers that met PPC quality and editorial requirements. They covered a variety of topics supply chains': includina: 'sea-land 'manufacturing': 'performance measurement'; 'business intelligence'; 'service supply chains'; 'relational mechanisms'; 'value creation' and 'service quality'.

This introductory article was reviewed and handled by the editor-in-chief of the journal.

The papers were initially divided by research method. We had two literature-based papers, seven papers which were case study focused (which reflected the exploratory nature of the field) and two survey-based papers. Then we sub-categorized the empirical papers by topic area. Therefore, in total, we have two literature review papers on supply chain digitalization (one generic, one specialized on FinTech), four that are related to the field of manufacturing, three on 'relational mechanisms' and three on performance. What we found to be very encouraging was that we have a range of international submissions from many different countries and from numerous disciplinary perspectives, provided by researchers working in a wide variety of organizational settings. It was encouraging to see such a rich diversity of theoretical approaches, scopes and research contexts.

In order to provide an indication of where the field is and to find out who the most important (highly cited) authors are in the evolution of digitalization, we have started the special issue with a review paper. In 'Supply Chain Digitalization: Past, Present, and Future' the authors Zahra Seyedghorban, Hossein Tahernejad, Roy Meriton and Gary Graham set out to provide a comprehensive literature review. Uniquely, they adopt a mixture of quantitative and qualitative review methods including the use of Citespace software to track citation burst activity to identify those seminal articles which have changed the scientific landscape in this area. Whilst the first review article was very generic in approach, in the second paper 'Bitcoin, Blockchain, and FinTech: A Systematic Review and Case Studies in the Supply Chain' the authors, Samuel Fosso Wamba, Jean Robert Kala Kamdjoug, Ransome Epie Bawack and John G. Keogh use a systematic review of 149 peer-reviewed articles published from 2010–2017 and three case studies to explain Bitcoin, Blockchain and FinTech concepts and their potential for value creation.

As the two literature reviews testify, this field is still in its infancy. There is, therefore, a need to identify theoretical gaps, advance conceptualization and to begin to make a valid knowledge contribution. It was not a great surprise then that we attracted a healthy range of exploratory case study investigations. The 'value-added' contribution of digitalization to the manufacturing sector was evident. We have four papers in this category. In their paper 'Moving Towards Digitalization: A Multiple Case Study in Manufacturing' the Andrea Zangiacomi, Elena Pessot, authors Rosanna Fornasiero, Massimiliano Bertetti and Marco Sacco aimed to investigate managerial practices for the adoption of Industry 4.0 technologies. Then, in 'A Framework for Food Supply Chain Digitalization: Lessons from Thailand' the authors Pichawadee Kittipanya-ngam and Kim Hua Tan use three leading companies in the food sector to explore the practices, challenges and opportunities faced by Thai food manufacturers digitalizing their food supply chains.

In their manufacturing paper 'Business Intelligence and Analytics Value Creation in Industry 4.0: A Multiple Case Study in Manufacturing Medium Enterprises' the authors Fanny-Eve Bordeleau, Elaine Mosconi and Luis Antonio De Santa-Eulalia present a multiple case study that explores factors influencing business value creation from Business Intelligence and Analytics activities. Finally, in the second group of articles focused on manufacturing, in the paper 'Cloud Platforms for Remote Monitoring System: A Comparative Case Study' the authors Yuqiuge Hao, Petri Helo and Angappa Gunasekaran show how cloud-based solutions support the remote monitoring and sequentially support the servitization at different business levels in the manufacturing industry.

An interesting theme of the third grouping is that of the role to be played by 'relational mechanisms' in the supply chain integration of digital technologies. In their paper 'The Impact of the Internet of Things (IoT) on Servitization: An Exploration of Changing Supply Relationships' Julius Boehmer, Manish Shukla, Dharm Kapletia and Manoj Tiwari explore the emerging potential of IoT technology as an enabler for manufacturers seeking to exploit opportunities for new production,

Running order	Manuscript ID	Paper title	Authors
1. Editorial	SI-TPPC-2019-0292	Rethinking Supply Chains in the age of Digitalization	Patrick Hennelly, Jagjit Singh Srai, Gary Graham and Samuel Fosso Wamba
2.	SI-TPPC-2018-0215.R2	Supply Chain Digitalization: Past, Present, and Future	Zahra Seyedghorban, Hossein Tahernejad, Roy Meriton and Gary Graham
3	SI-TPPC-2018-0186.R2	Bitcoin, Blockchain, and FinTech: A Systematic Review and Case Studies in the Supply Chain	Samuel Fosso Wamba, Jean Robert Kala Kamdjoug, Ransome Epie Bawack and John G. Keogh
4	SI-TPPC-2018-0250.R1	Moving Towards Digitalization: A Multiple Case Study in Manufacturing	Andrea Zangiacomi, Elena Pessot, Rosanna Fornasiero, Massimiliano Bertetti and Marco Sacco
5	SI-TPPC-2018-0218.R2	A Framework for Food Supply Chain Digitalization: Lessons from Thailand	Pichawadee Kittipanya-ngam and Kim Hua Tan
6	SI-TPPC-2018-0180.R1	Business Intelligence and Analytics Value Creation in Industry 4.0: A Multiple Case Study in Manufacturing Medium Enterprises	Fanny-Eve Bordeleau, Elaine Mosconi and Luis Antonio De Santa-Eulalia
7	SI-TPPC-2018-0184.R2	Cloud Platforms for Remote Monitoring System: A Comparative Case Study	Yuqiuge Hao, Petri Helo and Angappa Gunasekaran
8	SI-TPPC-2018-0225.R1	The Impact of the Internet of Things (IoT) on Servitization: An Exploration of Changing Supply Relationships	Julius Boehmer, Manish Shukla, Dharm Kapletia and Manoj Tiwari
9	SI-TPPC-2018-0223.R2	Digitalization in the Sea-Land Supply Chain: Experiences from Italy in Rethinking the Port Operations within Inter-Organizational Relationship	Assunta Di Vaio and Luisa Varriale
10	SI-TPPC-2018-0227.R1	Connecting Relational Mechanisms to Performance Measurement in a Digital Service Supply Chain	Juhani Ukko, Minna Saunila and Tero Rantala
11	<u>SI-TPPC-2018-0027.R4</u>	The Influence of Green Supply Chain Management on Manufacturing Enterprise Performance: Moderating Effect of Collaborative Communication	Xiongfeng Pan, Xianyou Pan, Malin Song and Ranran Guo
12	SI-TPPC-2018-0228.R2	Performance Measurement of India-Based Third- Party Logistics Sector: An Empirical Study Of User Versus Provider Perspectives	Smriti Asthana and Ashish Dwivedi

business and operating models. This is followed by the paper 'Digitalisation in the Sea-Land Supply Chain: Experiences from Italy in Rethinking the Port Operations within Inter-Organisational Relationship' in which Assunta Di Vaio and Luisa Varriale rethink and redesign data management for port operations in the sea-land supply chain through the adoption of digital platforms. In the third paper, 'Connecting Relational Mechanisms to Performance Measurement in a Digital Service Supply Chain' Juhani Ukko, Minna Saunila and Tero Rantala examine the connection between relational mechanisms and performance measurement in digital service supply chains, exploring the relational mechanisms that facilitate closer collaboration in performance measurement.

The two empirical papers were focused on digitalization and performance. In one of these papers, 'The Influence of Supply Chain Management on Manufacturing Green Enterprise Performance: Moderating Effect of Collaborative Communication' the authors Xiongfeng Pan, Xianyou Pan, Malin Song and Ranran Guo suggest that new patterns of emission reduction have profound impacts on knowledge management (KM) of SMEs, in particular, knowledge sharing and knowledge transfer. The final paper of our SI is entitled 'Performance Measurement of India-based Third-Party Logistics Sector: An Empirical Study of User versus Provider Perspectives'. Authors Smriti Asthana and Ashish Dwivedi focus on how relationship management (such as the development of Guanxi, trust, and commitment) drives improvements in 3PL service quality and how better service quality enhances competitiveness of the 3PL service users.

We especially thank all the reviewers who have given their time to provide excellent feedback to all contributing authors. Special thanks are extended to Mrs. Heather Childe, Assistant to the Editor of Production Planning and Control Journal along with the staff at Taylor and Francis and to Dr. Stephen J. Childe, the Editor, without whose help and guidance it would not have been possible to publish this special issue on time.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors



Patrick A. Hennelly is a Research Fellow in Distributed Manufacture for a Circular Economy for the Materials Science Research Centre, Royal College of Art. Previously, Patrick was a Research Assistant at the Centre for International Manufacturing, Institute for Manufacturing, University of Cambridge. Patrick's research interests lie in the areas of supply chain management, distributed manufacturing, digitalisation and the circular economy.



Jagjit Singh Srai is the Head of the Centre for International Manufacturing, Institute for Manufacturing, University of Cambridge where he completed his PhD in Engineering, Manufacturing and Management. His research work and that of his group involves working closely with industry in the analysis, design and operation of international production, supply and service networks. Current research areas include supply chain digitalisation within e-procurement, manufacturing and e-commerce domains, multilayered network modelling, and the impact of emerging technologies on network configuration. Research projects are cross-sector but include supply network and industry transformations linked to specific challenges within pharmaceuticals, food/fmcg, automotive and aerospace.



Gary Graham is a Associate Professor in Operations and Supply Chain Managementwork to date focuses on the impact of the internet and digital technologies on supply chains, logistics and distribution operations. He has authored three books, thirty research papers and has worked on ESRC/EPSRC, British Academy, the Foreign and Commonwealth Office and EU research grants investigating the economic and social consequences of disruptive innovation on

the music, news media and information intensive sectors. His recent work focuses on the deployment of creative ethnographic 'bridging techniques'. This includes both between business and users and universities and communities.



Samuel Fosso Wamba is a Professor in information systems and data science at the Toulouse Business School, France. He earned his PhD in industrial engineering from Polytechnic School of Montreal, Canada. His research interests include information technology adoption, use and impacts, business analytics, the Internet of Things, artificial intelligence, and blockchain. He has published papers in a number of journals including: European Journal of

Information Systems, Academy of Management Journal, International Journal of Production Economics, International Journal of Production Research, Production Planning & Control, Annals of Operations Research,

Information Systems Frontiers, Business Process Management Journal, Technological Forecasting and Social Change, Proceedings of the IEEE, and Journal of Business Research. He is the head of the artificial intelligence and business analytics cluster at Toulouse Business School.

ORCID

Patrick A. Hennelly b http://orcid.org/0000-0003-3355-4467 Jagjit Singh Srai b http://orcid.org/0000-0003-2277-2127 Gary Graham b http://orcid.org/0000-0002-9908-4974 Samuel Fosso Wamba b http://orcid.org/0000-0002-1073-058X

Patrick A. Hennelly 🝺 Royal College of Art, London, United Kingdom of Great Britain and Northern Ireland Patrick.Hennelly@rca.ac.uk

Jagjit Singh Srai b Institute for Manufacturing, University of Cambridge, Cambridge, United Kingdom of Great Britain and Northern Ireland

Gary Graham 🝺

Leeds University Business School, Leeds, United Kingdom of Great Britain and Northern Ireland

> Samuel Fosso Wamba D Toulouse Business School, Toulouse, France

Received 5 June 2019; accepted 8 June 2019

© 2019 Informa UK Limited, trading as Taylor & Francis Group