Editorial

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Biographical notes: Bharti Ramtiyal is working as an Associate Professor at Department of Management Studies at Graphic Era (Deemed to be University), Dehradun, India. She has more than ten years of experience in aircraft maintenance engineering and academics. She is working on digital technology adoption in Indian context. Her areas of interest are perceived risk, technology adoption theories, management aspects in circular economy and collaborative consumption. She has published in journals of repute like *Electronic Commerce Research*, *International Journal of Logistics Management*, *Journal of Enterprise Information Management*, etc.

Görkem Ataman received her BSc degree from Software Engineering Department, Izmir University of Economics, Izmir, Turkey, MSc degree from Applied Statistics Department, Izmir University of Economics, Izmir, Turkey, and PhD in the Department of Industrial Engineering and Operations Management, at Koç University, Istanbul Turkey, on modelling strategic customers' decision and behaviour on queueing type service systems. Her research interest includes operations planning and decision making in service/manufacturing systems. She focuses especially on emergency health services. She joined Yasar University, Department of Business Administration as of September 2013.

1 Introduction

The advancement of 'digital technologies' has brought a new shift mechanism in all sectors where organisations strive to survive and adapt competitively. Adoption of technologies such as artificial intelligence, machine learning and multi-agent systems, intelligent supply chain, and other solutions of similar kinds are the new forms that are revolutionising the conventional business models so as to open up new revolutionising opportunities for enterprises.

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This special issue on *Digital Technologies for Enterprise Transformation* is a collection of ten informative papers combined to unfold the aspect of digital technology in sectors like manufacturing, healthcare, education, agriculture and e-commerce, public transports, etc. All the submitted papers included in this issue utilise various methodological approaches, from quantitative analysis and modelling to systematic review, and all the papers are focused on theoretical developments or applications.

In this editorial, we assesses the impact of each of the accepted papers and indicates their relevance to the field.

2 Overview of contributions

Singh et al. examines one of the issues surrounding adoption of technological products; fluctuating market size. Thus, in the 'Modelling fluctuating market size based adoption of technological products: an alternative formulation', authors try to fill this gap and focus on adoption modelling caused by customer's behaviour and leading to a fluctuation in the market size. The authors suggest the improvements of the balking and repeat purchasing behaviours that will help to reflect the actual adoption processes better. They add to the body of knowledge on how firms can manage themselves in situations of market risk and uncertainty. Some of the topics of interest include; Balking behaviour, market factors affecting technological implementation and adoption.

Mathan et al.'s paper is an interdisciplinary review titled 'An interdisciplinary examination of the evolution of e-commerce recommendation systems: perspectives from management, social science, and psychology'. By incorporating management, social science and psychological viewpoints, but leaving from the main body of algorithm-centred IS research, this study contributes to the research discourses of customer experience and personalisation in e-commerce. Key focus areas of the paper are recommendation systems, thematic and evolution.

Another paper by Dhankar et al. on 'Data-driven approach for analysing the impact of external factors on pearl millet and stover yield' focuses on the study of external environment capitalist and socio-economic factors. Their statistical analysis thus offer actionable solutions to policy makers who seek to improve productivity in farming through such areas as SHG linkages and soil sample analysis. Key themes of the paper are agricultural analytics, external factor impact, sustainable farming.

In the paper by Kumar et al. 'Artificial intelligence and vaccine supply chain: analysis of the adoption challenges in the Indian context', overview the problems of implementing AI in the vaccine supply chain. Using fuzzy-DEMATEL the authors uncover the sustainability concerns, skill gap and resource constraint challenges that are turned as a guide map for the policymakers and supply chain fraternity. Key themes of the paper are AI adoption, healthcare supply chains, fuzzy modelling.

In the article titled 'Use of machine learning for classifying manufacturing companies based on their digital transformation levels', Acar and Sariyer propose a machine learning approach to classify the firms based on the index developed for digital transformation. It demonstrates the rational of applying the efficient random forest algorithm for the forecast and stress the importance of R & D expenditure for digital transformation. Main topics covered are machine learning, digitalisation and manufacturing industry.

In the paper, 'Predicting emotional intelligence, creative performance and knowledge management in higher education using multiple regression', Mishra et al. emphasise on the relationship between EI, KM and CP in capacity of higher institution. These suggestions are important for head of institutions who aim to increase organisational efficiency within a challenging environment. Key themes of the paper are emotional intelligence, creative performance and higher education management.

The paper is by Shukla et al. entitled 'Interpretive structural modelling approach for barrier analysis in agent technology enabled smart manufacturing system' which provides an ISM and MICMAC study to understand the pattern of relationships existing for key barriers to the adoption of AT system. This paper reveals higher order barriers and their dependency relationships to support a manufacturer's attempts at presenting a strategic approach to digital change. Key themes addressed by the paper are agent technology, smart manufacturing, and barrier analysis.

In the article title 'Advancing sustainable e-waste management systems integrated with artificial intelligence in developing countries', Kumar and Shukla articulate the problem of e-waste management. They employ fuzzy-DEMATEL methods to determine the main enablers, including public awareness and government policies, to establish a framework for promoting AI-based sustainability. Key themes of the paper are e-waste management, artificial intelligence, sustainable development.

Lal et al. present a methodologically sound review of the literature that concerns 'Artificial intelligence in higher education: the challenges, opportunities and the road ahead'. The paper, based on the research in the context of the SPAR4SLR framework, outlines the opportunities and challenges for implementing AIEd, with specific reference to the higher education institutions. Key theme is Artificial intelligence in education

The paper 'Leveraging social media to mitigate information asymmetry during humanitarian relief operations' by Srivastav and Gurumurthy discusses the use of social media for the improvement of HiR operations based upon the study of 2015 Chennai floods. Their findings give credence to the use of celebrity endorsement in sharing disaster information within the shortest time possible. It is uncovered in the paper that Facing those operations, more and more humanitarian organisations seek to effectively use social media to support their missions and help the target population. Key themes are Social media analytics, humanitarian supply chains and disaster management.

This is demonstrated in the paper by Chandiramani et al., where the authors review multi-agent systems (MAS) applications in smart public bus transportation. Their systematic consideration describes MAS's involvement in dynamic scheduling, autonomous vehicle coordination, and adaptive route planning as the characteristic capabilities of future smart cities. Key themes of the paper are Multi-agent systems, public transportation and smart mobility.

3 Reflections and thematic insights

In these articles, various trend can be identified as follows:

- Organisational aspects including culture shock, human relations, power, self-sufficiency and non-adoption, human dynamics in social networks, etc.

- While some research is centred on the role of AI in the context of supply chain, learning and teaching, and sustainability, indicating the universality of the topic.
- Decision making through data analysis starting with farming and going through manufacturing, data analytics and data-driven machine learning are depicted as the way to go.
- Several papers exhibited systems science and interdisciplinary characteristics which encompassed technical, social, and managerial aspects of the environment, while the others included recommendation systems and agent-based smart systems.

In this special issue the digital interventions in sustainability and business resilience emerged as the significant concern which can be crucial when implementing the these technologies at enterprise level.

4 Conclusions

One can confirm that digital technologies are not only supportive instruments for enterprises but are key to their change. AI, machine learning, agent systems as well as data analytics have opened the path to continuous and sustainable enterprise development when coupled with human-centred approaches.

In fact, we are grateful to all the contributing authors for the quality of the research and ideas they provided. We would like to express our appreciation to the anonymous reviewers to their meticulous comments that enhanced the manuscripts. We have benefited a lot from the editorial team of the *International Journal of Intelligent Enterprise* for their endorsement and assistance.

We do hope that this rather diverse sample of work published in this special issue will provoke more research and inter-disciplinary coalition. These guidelines will be turned out useful in the undertaking of digital transformation by enterprises and as such they will be handy to both the academics, practitioners and the policymakers.