Introduction to the Special Issue on Thriving Amidst Disruptive Technologies

1 Introduction

Disruptive technologies are thriving to replace the dominant technologies in many industry sectors. Thus, there is a need for a set of theories and technical works that can predict the probability of success of disruptive technologies at their early stages. Referring to the Technology-Organization-Environment (TOE) framework, technological, organizational, and environmental readiness affect enterprises' success in adopting and implementing disruptive technologies. For example, people believe that artificial intelligence (AI) and blockchain are two of the most disruptive technologies that make our world increasingly connected. Further, it is essential to consider the implications of these disruptive technologies and their integrations on security and privacy. For example, blockchain introduces challenging Internet of Things (IoT) security problems. The theme of this special issue is to provide a platform to discuss theoretical and technical approaches, strategies, solutions, and applications to support business transformation in a disruptive technological environment.

We solicited research and industry papers related to these specific challenges and others driving innovation in this topic and related research issues, including (1) Big Data, Data Analytics, and Business Intelligence; (2) Enterprise Systems and Knowledge Management; (3) Digital Transformation, Management, and Governance; (4) Information Security, Privacy, and Risk Management; (5) Digital Information Systems in the Public Sector, Healthcare, Telecommunications, Transport and Education; (6) Digital Business Platforms, Blockchain, Social Networking, and the IoT; (7) Regional Perspectives on Digital Information Systems; (8) Artificial Intelligence (AI), Robotics, and Machine Learning; (9) Augmented Reality (AR) and Mixed Reality (XR); and (10) Case Studies (e.g., healthcare, customer service, aviation, etc.).

This special issue provides the fundamentals of thriving amidst disruptive technologies, covering their computational development, technical capabilities, and roles in academic, societal, corporate, and governmental strategies. The special issue also provides clear evidence that disruptive technologies play an ever-increasingly essential and critical role in supporting our daily life and future, a new discipline for interdisciplinary research in business, information systems, and even social sciences. Two research papers have been presented on this special issue. Referring to the first paper, Ho et al. [2024] summarized the discussion of how blockchain and distributed ledger technologies can help tackle the fake news and misinformation problem at the 15th International Conference on Information Resources Management [Conf-IRM 2022] on October 18, 2022. In the second paper, Zhao et al. [2024] presented a quantitative metric and language-dependent single qualitative analysis of conformance between legal and smart contracts for constructing the secure blockchain.

For future research directions, the AI-driven capability allows companies to gather real-time data from multiple sources, aiding strategy formulation and decision-making [Raj et al. 2023]. Generative AI (GAI) should be imperative to imbue it with empathy, ethical considerations, and a human-centric approach, referred to as

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Human-centered AI (HCAI) [Fui-Hoon Nah et al. 2023]. Further, Large Language Models (LLMs) address the challenges in computational technology to overcome bottlenecks in creating diverse and accessible content, thereby aiding accessibility for individuals with language and information barriers [Kumar 2023]. For example, Othman et al. [2023] conducted research attempting to employ ChatGPT to rectify inaccessible networks automatically to enhance the accessibility of the web, ensuring that individuals with disabilities can access websites. LLMs offer a humanized technology approach [Kumar 2023] and utilize multiple smaller models to enhance performance and reduce costs, thereby assisting accessibility [Czejdo and Bhattacharya 2022]. After an extensive review of the literature, we conclude that GAI has limitations in terms of accessibility. While its primary focus is to provide various functionalities and services for the general population, there is a noticeable gap regarding individuals with specific disabilities or accessibility needs.

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