Digital Technology and Management Synergy: Integrating Technical Innovation and Managerial Strategy

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Call for submission. This editorial introduces the issue of 2025 for *Embedded Selforganising Systems (ESS)* journal. This issue focuses on a discussion about *Digital Technology and Management Synergy: Integrating Technical Innovation and Managerial Strategy* in different areas of engineering solutions.

Our journal uses electronic publication, which provides a flexible way to submit and review the contributions of authors from all countries. The advantages of such an e-journal are multifarious. We replace the classic review and creation process with a new Sliding Issue model compared to traditional paper journals. Each issue starts with an initial editorial and an official call for papers. The submitted articles will be reviewed and, if accepted, published as soon as the committee receives the final version. Based on this process, each sliding issue can be filled successively until the maximum number of articles is reached. During this period, other researchers can already read accepted papers while other papers are still in the reviewing process—accordingly, the time to publish shrinks to a minimum. In addition, multiple issues with different focuses can co-exist at the same time, which provides completely new possibilities to react to the latest research topics. The journal also allows the integration of discussions and other reactions to published articles in the same journal issue.

We are welcoming fresh ideas, on-going research technical reports and novel scientific works. We also intend to create a promising platform for creative and constructive discussions.

Digital Technology and Management Synergy: Integrating Technical Innovation and Managerial Strategy

In an unprecedented digital era, old distinctions between managerial strategy and technical innovation are blurring at an increasingly fast pace. This ESS Journal special issue is dedicated to an investigation of one of today's most dynamic and pressing interdisciplinary borders: that between digital technology and management.

The last decade has seen rapid advancements in sophisticated technologies—artificial intelligence (AI), machine learning, digital twins, smart grids, blockchain, and the Internet of Things (IoT). Emerging technologies are transforming energy, production, logistics, health, and education. But the long-term sustainability and implications of the innovation depend as much on their technological complexity as they do on governance depth, scalability, and culture of management.

This question aims to dispute the common thought that just being technically excellent is enough. In contrast, we bring to the forefront the idea of synergistic effort - a dynamic, strategic interplay among data scientists, engineers, system engineers, and thought-leading managers. Innovation is brought to a halt when management is in one corner, working separately from technology. However, synergized, all these shapes the foundation for responsive, agile, and resilient systems that can answer today's most demanding challenges: energy transition, digital infrastructure resilience, cybersecurity threats, climate adaptation, and inclusive development.

Authors for this issue represent a broad range of disciplines, institutions, and nations, providing varying views that evoke the international and cross-disciplinary scope of the topic. Their contributions examine ways that digital technologies may be embedded in operational contexts in strategic ways, ways that innovation ecosystems can be governed and funded, and ways that digital change can be navigated via policy, education, and leadership.

Key contributions include:

- *Frameworks for decision*-making that incorporate AI and data analytics across infrastructure and industry.
- *Case studies on smart grid* deployment and predictive maintenance by means of digital twin concepts.

- *Digital risk management and cybersecurity governance analyses.*
- *Unified Model: Tech-Management Interface Design*
- *Human capital strategies* for managing digital literacy in an era of automation and smart workplaces.
- *Recommendations for alignment of technology*-driven innovation to ESG (*Environmental, Social, Governance*) goals.

We aim to provoke discussion and promote dialogue across different sectors by publishing this volume. We invite readers from academic, professional, policy-making, and student communities to respond with their views and reflect on implications for practice, research, and leadership in the digital era. Ultimately, this challenge calls for a shift from fragmented development to integrated innovation. It is time to break away from seeing management and technology as two separate domains. We have to adopt a new mindset—one in which digital technologies are not designed but orchestrated, not developed but applied in a strategic manner, not tools but co-actors in our efforts toward an intelligent, more sustainable, more resilient world. We appreciate all contributors and readers for their perceptive efforts and hard work, and we eagerly anticipate continued research on this essential nexus between strategic management and digital technology.

During the past three years, Department of Electro technique, Mongolian University of Science and Technology (MUST) has proudly co-published this special issue together with the Faculty of Computer Science, TU Chemnitz. Such collaborations have greatly contributed to bridging the gap between engineering problems and computational solutions. In 2025, we are pleased to follow this tradition of inter-disciplinary by collaborating with the Department of Economics and Finance, MUST. We would like to express our deep gratitude for your attention and support in presenting the current issue, which showcases some noteworthy research results from these Departments.

We once more extend our sincere appreciation to Professor Hardt, the senior faculty members, and our departmental colleagues for assistance in preparation and presentation of this issue. We remain confident that the research presented herein will significantly contribute to the advancement of knowledge in the field and serve as a catalyst for future academic and technological progress.

SUBMISSION INSTRUCTIONS

Submissions for the journal must be made as complete papers (there is no abstract submission stage) submitted as PDF documents. Authors are requested to submit papers reporting original research results and experience. The page limit for regular papers is 4 to 6 pages and short papers are from 2 to 4 pages. Papers should be prepared using the IEEE two-column template. An MS Word template or ESS online journal is available here https://www.bibliothek.tu-chemnitz.de/ojs/index.php/cs/information/authors

Papers should submit the following link of the journal:

https://www.bibliothek.tu-chemnitz.de/ojs/index.php/cs/about/submissions

Submission period: Opening May 2025 and Closing 31th October 2025.

There is no charge for submission. Accepted papers are publishing free. Review in 2 weeks after submission. Camera-ready paper for publication should be submit in 2 weeks after review notes.

Thank you for Your Contribution!