

Fashion-tech: reshaping fashion products, processes and markets through digital technology

Over the past 15 years, the European Commission and Member States have provided R&D funding for projects to develop smart systems, smart textiles, flexible and organic electronics and to focus on miniaturization, integration, interoperability, connectivity and power management together with digital manufacturing technologies and processes aimed at boosting the Factories of the Future. Research in this field is mostly “technology pushed” and not design-led, focusing on the development of technological building blocks and platforms. This same technological approach is the one often discussed by conferences calls, while there is a lack of understanding on the impact of digital technology on the whole fashion system, supply chain and business models. Universities are currently developing new dedicated curricula to bridge the gap between market demands and offered skills and to push further the understanding of the relation between fashion and digital technology including management, information and communication technology and digital humanities.

Within this framework, this special issue offers an innovative approach to the reading of the relation between fashion and digital technology, discussing interrelationships between the organizational and creative models and the digital tools and innovations and the quality of design-oriented innovation within digital fashion products, processes and business models.

A new age of interactive lifestyles, searching for more sustainable approaches products, is opening up novel opportunities for the fashion sector. There is huge opportunity created by the new generation of key enabling technologies such as digital fabrication, advanced manufacturing, wearables, sensors and embedded systems to renew fashion business models and functions.

The special issue presents and discusses theoretical framework and best practices to support the development of design processes and tools to enable, reactivate and reconfigure relations and processes in research, production, product, logistics and retailing of the traditional fashion supply chain, highlighting new approaches and innovations enabled and nurtured by digital technologies.

Articles adopt a systemic approach as they cover different aspects of the digital fashion supply chain and processes to offer a whole perspective on the innovations and potentialities enabled by digital technologies and their social, productive and economic implications within the fashion field. They connect to the main fashion functions and processes, presenting the state-of-the-art of digital fashion, discussing both theoretical framework and international best practices and highlighting new approaches and innovations enabled and nurtured by digital technologies.

“Heritage narratives in the digital era: How digital technologies have improved approaches and tools for fashion know-how, traditions, and memories” by Vacca and Martin tackles the role of digital technologies in research and knowledge creation and transfer in fashion and offer an original reading for the enhancement of fashion know-how within fashion companies and the fashion field.

Larsson presents “Digital innovation for sustainable apparel systems: Experiences based on projects in textile value chain development” with research experiences that show digital manufacturing and retailing solutions, within a perspective of circular value networks, can favor the development of business models that support sustainable development in the textile and apparel industry.



In “Fashion 4.0. Innovating Fashion Industry Through Digital Transformation,” Bertola and Teunissen offer a comprehensive overview on Fashion Industry 4.0, developing a domain-specific original model applied into fashion.

Geetika, Sapna, Mohd Kamalun and Chaturvedi authored “Hyper-personalization – fashion sustainability through digital clienteling” and discuss customization impact on customer intensions, addressing the concept of fashion sustainability from a cost-efficiency perspective.

Colombi, Kim and Wyatt, with their “Fashion Retailing ‘Tech-gagement’: Engagement Fueled by New Technology,” focus on the shopping experience, discussing customer engagement and interactive digital technology, from augmented brick-and-mortar stores to “clicks to bricks” retailers, and proposing an original approach called “tech-gagement.”

The articles broaden and update in the concept of “fashion and digital technologies” and codify the contemporary innovation capabilities of fashion enabled by digital technologies, challenging the research and business opportunities of fashion companies in contemporary international markets.

The design approach to the reading of the relation between fashion and digital technologies and its impacts on fashion products, processes and business models represents an original prospective on such topic.

Chiara Colombi

Department of Design, Polytechnic University of Milan, Milan, Italy