

Dagmar Cagáňová • Michal Balog
Lucia Knapčíková • Jakub Soviar
Serkan Mezarcıöz
Editors

Smart Technology Trends in Industrial and Business Management

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Preface

This publication is a collection of rigorous research projects that were presented at the “*Industry of Things and Future Technologies*” international conference. The event took place in Bratislava, Slovakia, during November 22–24, 2016, and was endorsed by the European Alliance for Innovation, a leading community-based organisation devoted to the advancement of innovation in the field of ICT. The conference was organised by the Slovak University of Technology in Bratislava, Faculty of Materials Science and Technology in Trnava (MTF STU) and the Technical University of Košice, Faculty of Manufacturing Technologies with a seat in Prešov (TUKE).

The Internet of Things (IoT) offers advanced connectivity of devices, systems, and services that reach beyond machine-to-machine communications and covers a variety of domains. Therefore, the main goal of the conference was to determine the next level technologies that will drive Industry 4.0 and IoT forward and to introduce industrial innovations, smarter key technologies, and novel approaches to data analysis, rethink strategic planning, develop new opportunities, address challenges, and explore its solutions. Additionally, the focus of the conference reflected the European Union thematic priorities for research and innovation to improve the quality of life for citizens and make cities more sustainable with decreasing impact on the environment.

The conference articles were presented in the four thematic areas:

- *Technology* (responsibility in IT business, creative technologies, intelligent transport systems, advances in robotics and machine vision as a key success factor in innovative companies, the role of the human factor in the performance and sustainability of manufacturing, challenges of IoT to cybersecurity, engineering secure IoT systems, IoT impact on critical infrastructures, and others)
- *Internet* (future Internet, Internet of Things, security and safety, smart cities, creative cities)
- *Innovation* (industrial networks and intelligent systems, social networks [social marketing] and innovation in social areas, new perspectives in transport innovation, green vehicles, fast track for transport innovation, socio-economic and

behavioural research for policy-making, novel trends in production devices and systems, and others)

- *Mobility* (mobility within Danube strategy, smart mobility, mobility and its consequences on health and well-being, urban mobility, E-mobility, congestion-free, and sustainable mobility)

This publication encompasses a total of 34 research articles with worldwide contributors. Among the project findings featured in this publication are those written by the conference keynote speakers, e.g. Dr.h.c. Mult. Prof. Ing. Juraj Sinay, DrSc., the Head of the Department of Safety and Quality in Mechanical Engineering at the Technical University in Košice and the President of Automotive Industry Association of the Slovak Republic. Prof. Dr. Dragan Perakovic, the Head of Department for Information and Communication Traffic and Head of Chair of Information Communication Systems and Services Management at the University of Zagreb, and the chief editor of the International Journal of Cyber-Security and Digital Forensics (IJCSDF), contributes with his research article on Smart Wristband System in Traffic Environment. His study is included in the Smart Transportation Applications and Vehicle Data Processing System for Smart City Buses section of this release.

Next, at the conference presented highly acclaimed scholar Prof. Pedrag Nikolić who serves as a Dean of the Faculty of Digital Production at Educons University, Serbia, together with Prof. Adrian David Cheok, the director of Imagineering Institute in Malaysia. Among others, we are proud to achieve the scholarly success of this edition which resulted from our cooperation with the Comenius University in Bratislava, the Faculty of Management, and their prestigious contributors Assoc. Prof. Ján Papula, Assoc. Prof. Zuzana Papulová with the research team, Assoc. Prof. Gabriela Bartáková-Pajtinková, and Assoc. Prof. Katarína Gubíniová. We were additionally delighted to welcome Assoc. Prof. Katarína Stachová and Assoc. Prof. Zdenko Stacho from The School of Economics and Management in Public Administration in Bratislava. The Department of Management at MTF STU and The Institute of Management from Slovak Technical University were represented by Prof. Tatiana Kluvánková, Prof. Maroš Finka, and Assoc. Prof. Daniela Gažová with their teams at the conference.

Moreover, thanks to an excellent collaboration between MTF STU and the Department of Marketing and Trade at the Slovak Agricultural University in Nitra. Prof. Ludmila Nagyová and Dr. Mária Holienčinová shared their scholarly expertise in the Smart Technology Trends Business Management section of the publication. We are also thankful for the research article contribution under the leadership of the Assoc. Prof. Marian Králik from STU Faculty of Mechanical Engineering, Dr. Peter Pišteš with his colleagues from Faculty of Informatics and Information Technologies, and Prof. Michal Cehlár, the Dean of Faculty of Mining, Ecology, Process Control and Geotechnologies (BERG) at the Technical University of Košice (TUKE) with his team whose contributions are included in the Smart Transportation Applications and Vehicle Data Processing System for Smart City Buses section of the publication. Furthermore, we are grateful to Assoc. Prof. Dagmar Petříková who leads the Department of Spatial Planning and Management at the MTF STU.

Additionally, we would like to show appreciation to the PhD candidates and other academics from the MTF STU Faculty of Materials Science and Technology, particularly to Dr. Natália Horňáková, MSc. M.A. Richard Jurenka, and MSc. Augustín Stareček who mastered the exemplary teamwork and for their rigorous contributions to this publication as well as many other outstanding contributions from various institutions. Other areas of expertise covered in this edition include Industry of Things and Future Technologies and Smart Technology Trends in Industrial Management and Materials.

As chairs of the conference, we were particularly impressed by the wide range of innovative research solutions presented at the symposium. In the light of the latest knowledge and findings from scientific projects, the authors present actual R&D trends in the given field. Therefore, the Scientific Committee members and organisers would like to express their sincere thanks to all the authors who attended the conference in Bratislava, Slovakia, and particularly to the authors, who contributed to the creation of this publication. This issue not only defines the state of the art in the field, but it additionally explores related topics for future research. Moreover, we would like to thank the audience members who actively interacted in the discussion on the topics mentioned above.

Trnava, Slovakia

Dagmar Cagánová
Dorota Horvath

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Lucia Knapčíková

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