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IFIP was founded in 1960 under the auspices of UNESCO, following the first World Computer Congress held in Paris the previous year. A federation for societies working in information processing, IFIP's aim is two-fold: to support information processing in the countries of its members and to encourage technology transfer to developing nations. As its mission statement clearly states:

IFIP is the global non-profit federation of societies of ICT professionals that aims at achieving a worldwide professional and socially responsible development and application of information and communication technologies.

IFIP is a non-profit-making organization, run almost solely by 2500 volunteers. It operates through a number of technical committees and working groups, which organize events and publications. IFIP's events range from large international open conferences to working conferences and local seminars.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

As with the Congress, participation in the open conferences is open to all and papers may be invited or submitted. Again, submitted papers are stringently refereed.

The working conferences are structured differently. They are usually run by a working group and attendance is generally smaller and occasionally by invitation only. Their purpose is to create an atmosphere conducive to innovation and development. Refereeing is also rigorous and papers are subjected to extensive group discussion.

Publications arising from IFIP events vary. The papers presented at the IFIP World Computer Congress and at open conferences are published as conference proceedings, while the results of the working conferences are often published as collections of selected and edited papers.

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Ilkyeong Moon · Gyu M. Lee
Jinwoo Park · Dimitris Kiritsis
Gregor von Cieminski (Eds.)


Advances in Production Management Systems

Smart Manufacturing for Industry 4.0

IFIP WG 5.7 International Conference, APMS 2018
Seoul, Korea, August 26–30, 2018
Proceedings, Part II


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Preface

We have already experienced three major industrial revolutions since the 18th century. These revolutions brought innovation in productivity for industry, the public, and individuals. Surprisingly, another new industrial revolution, the fourth one, has been rapidly approaching us in every sector of industry. Key components of the fourth industrial revolution include big data analysis, artificial intelligence, and virtual and augmented reality. These components also had a huge impact on the manufacturing sector and research on production management. Therefore, the 2018 Advances in Production Management Systems Conference played a leading role in the academic field. The core of our contributions strive to realize smart production management for data-driven, intelligent, collaborative, and sustainable manufacturing. Our topics of interest include Global Supply Chain, Knowledge-Based Production Management, Collaborative Networks, Sustainability and Production Management, Industry 4.0, and Smart City.

We welcomed leading experts from academia, industry, and research institutes from all over the world to the 2018 Advances in Production Management Systems Conference in Seoul, Korea, to exchange ideas, concepts, theories, and experiences. A large international panel of experts reviewed all the papers and selected the best ones to be included in these conference proceedings. In this collection of papers, the authors provide their perspectives along with their concepts and solutions for the challenges that industrial companies are confronted with, to offer great opportunities, new technologies, collaboration, and developments.

The proceedings are organized in two parts:

- Production Management for Data-Driven, Intelligent, Collaborative, and Sustainable Manufacturing (Volume 1)
- Smart Manufacturing for Industry 4.0 (Volume 2)

We hope that our readers will discover valuable new ideas and insights in these proceedings. The conference was supported by the International Federation of Information Processing (IFIP) and was organized by the IFIP Working Group 5.7 on Advances in Production Management Systems, the Korean Institute of Industrial Engineers (KIIE), and the Institute for Industrial Systems Innovation at Seoul National University. We would like to thank all contributors for their research and for their willingness to share ideas and results. We are also indebted to the members of the IFIP Working Group 5.7, the Program Committee members, and Organizing Committee members for their support in the review of the papers. Finally, we appreciate the generous support from both the Korean Federation of Science and Technology

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August 2018

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