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IFIP – The International Federation for Information Processing

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

IFIP's mission is to be the leading, truly international, apolitical organization which encourages and assists in the development, exploitation and application of information technology for the benefit of all people.

IFIP is a non-profitmaking organization, run almost solely by 2500 volunteers. It operates through a number of technical committees, which organize events and publications. IFIP's events range from an international congress to local seminars, but the most important are:

- The IFIP World Computer Congress, held every second year;
- Open conferences;
- Working conferences.

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 small and 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.

Any national society whose primary activity is about information processing may apply to become a full member of IFIP, although full membership is restricted to one society per country. Full members are entitled to vote at the annual General Assembly, National societies preferring a less committed involvement may apply for associate or corresponding membership. Associate members enjoy the same benefits as full members, but without voting rights. Corresponding members are not represented in IFIP bodies. Affiliated membership is open to non-national societies, and individual and honorary membership schemes are also offered.

Bernard Grabot Bruno Vallespir Samuel Gomes
Abdelaziz Bouras Dimitris Kiritsis (Eds.)

Advances in Production Management Systems

Innovative and
Knowledge-Based Production Management
in a Global-Local World

IFIP WG 5.7 International Conference, APMS 2014
Ajaccio, France, September 20-24, 2014
Proceedings, Part I



Springer

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Preface

For the last decades, APMS has been a major event and the official conference of the IFIP Working Group 5.7 on Advances in Production Management Systems, bringing together leading experts from academia, research, and industry. Starting with the first conference in Helsinki in 1990, the conference has become a successful annual event that has been hosted in various parts of the world including Washington (USA, 2005), Wroclaw (Poland, 2006), Linköping (Sweden, 2007), Espoo (Finland, 2008), Bordeaux (France, 2009), Cernobbio (Italy, 2010), Stavanger (Norway, 2011), Rhodos (Greece, 2012), and State College (PA, USA, 2013).

By returning to Europe, APMS 2014 took place in Ajaccio (Corsica, France). This issue was organized in a collaborative way, as its organization was supported by four French universities and engineers schools: ENIT-INPT / University of Toulouse, the University of Bordeaux, the University of Lyon and the University of Technology of Belfort-Montbéliard.

The topics of APMS are similar to those of the IFIP WG 5.7. They concern all the facets of the systems of production of goods and services. For its 2014 issue, APMS selects the “Innovative and knowledge-based production management in a global-local world” theme, focusing on innovation, knowledge, and the apparent opposition between globalization of the economy and local production. 233 papers were accepted, based on blind peer-review. They were written and proposed by more than 600 authors and co-authors coming from 28 countries. The main review criteria were the paper quality and contributions to science and industrial practice. Accepted papers of registered participants are included in this volume. According to the new standard of APMS conference, full papers have been submitted and reviewed from the outset, allowing for the final proceedings to be available at the time of the conference.

Through an open call for special sessions and papers, APMS 2014 sought contributions in cutting-edge research, as well as insightful advances in industrial practice. The intent of the special sessions is to raise visibility on topics of focused interest in a particular scientific or applications area. This year, 21 special sessions were planned. They were consistent with the theme of the conference and focused on key areas of simulation, design, service, process improvement, sustainability, human & organizational aspects, agility and flexibility, maintenance, future and smart manufacturing, ontology, co-evolution of production and society, lean production, factories lifecycle, experience, knowledge & competence, and optimization.

Following the tradition of past APMS conferences, the 7th APMS Doctoral Workshop offered Ph.D. students the opportunity to present, discuss, receive

feedback, and exchange comments and views on their doctoral research in an inspiring academic community of fellow Ph.D. students, experienced researchers, and professors from the IFIP WG 5.7 community.

Three awards were distributed during APMS 2014:

- Burbidge Award for best paper,
- Burbidge Award for best presentation,
- Doctoral Workshop Award.

The Scientific Committee, consisting of 78 researchers, most of them being active members of the IFIP WG 5.7, played a key role in reviewing the papers in a timely manner and providing constructive feedback to authors, allowing them to revise their manuscripts for the final draft.

Papers in these three volumes are grouped thematically as follows:

Volume 1:

- **Part I: Knowledge Discovery and Sharing:** Knowledge management, creative enterprise, quality management, design tools, system engineering, PLM, ontology, decision support system, collaboration maturity, Business Intelligence, enterprise 2.0, etc.
- **Part II: Knowledge-Based Planning and Scheduling:** Scheduling, optimization, production planning and control, assembly line balancing, decoupling points, inventory management, supply chain management, multi-echelon supply chain, analytic hierarchy process, enterprise resource planning, decision support systems, problem solving, vehicle routing, physical internet, etc.

Volume 2:

- **Part III: Knowledge-Based Sustainability:** Cleaner production, green IT, energy, energy-efficiency, risk management, disturbance management, resilience, end of life, reverse logistics, creative industry, eco-factory, environmental innovation, solidarity economy, social responsibility, glocalization, etc.
- **Part IV: Knowledge-Based Services:** Service production, service engineering, service governance, healthcare, public transportation, customer satisfaction, after sales, smart manufacturing, etc.

Volume 3:

- **Part V: Knowledge-Based Performance Improvement:** Performance measurement system, evaluation, quality, in-service inspection, inspection programs, lean, visual management, standardization, simulation, analysis techniques, value stream mapping, maturity models, benchmarking, change management, human behavior modeling, community of practice, etc.

- **Part VI: Case Studies:** sectors (petroleum industry, aeronautic industry, agribusiness, automobile, semiconductors), tools (ERP, TQM, six sigma, enterprise modeling, simulation), concepts (supply chain, globalization), etc.

We hope that these volumes will be of interest to a wide range of researchers and practitioners.

August 2014

Bernard Grabot
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