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PREFACE

It is difficult to think of an activity in any part of our lives that is not affected or driven by technology. This is particularly true as the world increasingly becomes a massive interconnected system of data-driven relationships. Technology now provides the power to enable the collection, analysis and linking of huge amounts of data far beyond what could not be conceivable even a decade ago. Along with the benefits of this connectivity come the ethical, legal issues, the risks and the cyber security problems. The world needs the ability to use interconnectedness with utmost safety.

PICMET defines the primary role of Technology Management as the management of technologies to assure that they work for the betterment of humankind. Using this definition, technology management has a critical role to play in the proper utilization of technology to meet the world's needs.

This is a big challenge for the leaders and future leaders in the Technology Management field. Recognizing this challenge, the PICMET '17 Conference explores the role of technology management for the interconnected world.

It is our expectation that, by focusing on this crucial aspect of technology management, PICMET will encourage researchers to engage in significant scholarly work in responding to the world's needs for managing effective, safe and secure interconnectedness in the years to come.

PICMET '17 received 547 submissions. After a double-blind refereeing process, 243 papers were included in the conference. The referees were from around the world. The authors represent more than 100 academic institutions, industrial corporations and government agencies in 24 countries.

The PICMET '17 Conference has two outputs:

This *Conference Bulletin* includes an up to 200-word abstract of each paper to enable the participants to select the sessions to attend and the presentations to follow. The *Bulletin* is intended as a reference book for an overview of the field, in general, and the conference, in particular.

The *Proceedings* is a flash drive containing full-length presentations included in the conference. Its purpose is to give full access to the entire conference for many years after the conference is over. The *Proceedings* is divided into 41 sections, listed below, each containing several papers on the topic.

Strategic Management of Technology
Science and Technology Policy
Collaborations for Technology Management
Competitiveness in Technology Management
Cultural Issues in Technology Management
Global Issues
Educational Issues
Emerging Technologies

Indicators of Technical Emergence
Disruptive Technologies
Decision Making
E-Business
Entrepreneurship/Intrapreneurship
Leadership
Intellectual Property
Social Innovation

Social Media
Project/Program Management
Innovation Management
R&D Management
New Product Development
Manufacturing Management
Resource Management
Supply Chain Management
Quality Management
Enterprise Management
Knowledge Management
Information/Communication Technology
Technological Changes

Technology Assessment and Evaluation
Technology Planning and Forecasting
Technology Roadmapping
Technology Adoption
Science and Technology Communication
Commercialization of Technology
Resilience of Systems
Artificial Intelligence for Technology
Management
Big data for Technology Management
Technology Management in the Energy Sector
Technology Management in the Health Sector
Technology Management in the Service Sector

A large number of colleagues around the world contributed to the success of the PICMET '17 Conference.

The PICMET Board of Directors set the strategic direction; the Advisory Council provided guidance for the implementation of the strategies for the conference.

Ann White, as the Executive Director Emeritus, edited the *Bulletin* and prepared the front-end materials; Liono Setiowijoso designed, maintained and managed the information systems and PICMET web site under the guidance of PICMET CIO Bob Martin, and formatted the papers for the *Proceedings*; Caroline Mudavadi, as the Executive Assistant, provided support throughout the planning and registration process; Byung Sung Yoon, as the Executive Director and Conference Coordinator, coordinated the overall planning for the conference. Sule Balkan managed finances as PICMET's treasurer; Mark Ahn coordinated external activities. Timothy Anderson was the Director of Technical Activities, Kiyoshi Niwa and Dilek Cetindamar Kozanoglu were the Co-Directors of International Activities, and Charles Weber was the Director of Awards. Byung-Sung Yoon and Songphon Munkongsujarit coordinated the on-site activities; Pei Zhang managed the documentation together with Hakan Kutgun; Ahmed Alibage prepared the signage; and Jeff Birndorf developed graphic arts for the conference. Nathasit Gerdri chaired the Student Paper Award Committee, whose members Hongyi Chen, Jonathan Ho and Nazrul Islam evaluated more than 30 papers nominated for the award. Hakan Kutgun developed and managed the PICMET page on LinkedIn.

Timothy Anderson, Tugrul Daim, Kiyoshi Niwa, Dilek Cetindamar Kozanoglu, Harm-Jan Steenhuis and Gary Perman conducted the review process for the papers as the Associate Editors; 126 colleagues from around the world constituted the Panel of Reviewers. They each reviewed up to 10 papers submitted to PICMET '17. Each paper was reviewed by two or more reviewers to assure high quality. Timothy Anderson did the scheduling of the accepted papers for presentation at the conference. Joao Lavoie, Husam Barham, Edwin Garces, Rafaa Khalifa, Sadaf Salek, Amir Shaygan, Chih-Jen Yu and Pei Zhang were the Editorial Assistants to check and verify that the finalized papers included all the revisions recommended by the reviewers.

Elizabeth Aubrey and Sherri Young of IEEE worked with PICMET from the beginning to the end of the conference planning effort. Their professionalism and expertise assured the high-quality production of the *PICMET Proceedings* on schedule.

The Country Representatives, under the leadership of Kiyoshi Niwa and Dilek Cetindamar Kozanoglu, provided linkages between PICMET and the regions they represent.

The sponsors and supporters of PICMET '17 made this conference possible. We extend special thanks to all of them: Portland State University Department of Engineering and Technology Management, Maseeh College of Engineering and Computer Science, Portland State University Foundation, Portland State University Office of Information Technology, and WHOVA Event Management.

We believe the PICMET '17 *Bulletin* and *Proceedings* contain some of the best knowledge available on Technology Management for addressing the challenges and opportunities in the interconnected world. We hope they will contribute to the success of technology managers and emerging technology managers, worldwide.

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