ICOSCM 2010

PROCEEDINGS OF THE FOURTH INTERNATIONAL
CONFERENCE ON OPERATIONS AND SUPPLY CHAIN
MANAGEMENT

ICOSCM 2010
July 25 to July 31, 2010
in Hong Kong and Guangzhou, China

Edited by
Prof. Xiande Zhao, The Chinese University of Hong Kong
Prof. Guilong Zhu, South China University of Technology
Prof. Barbara B. Flynn, Indiana University
Acknowledgments

The 4th International Conference on Operations and Supply Chain Management is jointly organized with the 15th Annual Meeting of the Asia Pacific Decision Sciences Institute. We acknowledge the help and support from Prof. Keong Leong, President of Decision Sciences Institute and all the officers of Asia Pacific Institute of Decision Sciences Institute (term of services Jan. 1,-Dec. 31, 2010):

Honorary President: Kee Young Kim
Immediate Past President: Xiande Zhao
President: Russell Ching
President-Elect: Don Kerr, University of the Sunshine Coast
Secretary-General: Daesik Hur
Treasurer: Thomas Callarman, CEIBS
2010 APDSI Conference Chair: Xiande Zhao, CUHK
Regionally Elected VP to DSI: Norma Harrison, CEIBS
VP – Australasia: Stuart Orr, Deakin University
VP – China: Thomas Callarman, CEIBS
VP- Korea: Jung Hoon Lee, Yonsei University
VP – Hong Kong: T. S. Lee, HangSeng School of Commerce
VP – Japan: Hisashi Onari
VP – Taiwan: Rebecca Yen
VP – Thailand: Jirawan Jitthavech
VP – At Large: Yoshi Matsui
VP – At Large: Linda Sprague, Rollins College
VP – At Large: Z. Zustin Ren, Boston University
VP-At Large: Eldon Li, National Chengchi University
Proceedings of the Fourth International Conference on Operations and Supply Chain Management (Hong Kong and Guangzhou, China)

July 25 to July 31, 2010

Jointly Organized by:
Centre for Supply Chain Management and Logistics, Li & Fung Institute of Supply Chain Management and Logistics, The Chinese University of Hong Kong, Hong Kong
School of Business Administration, South China University of Technology, Guangzhou, China
Centre for International Business Education and Research, Indiana University, USA

Co-sponsored by
Hong Kong Science and Technology Parks
IDS, a member of Li & Fung Group
Research Institute of Modern Services Industry, South China University of Technology
China Mobile Group Guangdong Co., Ltd.
Guangzhou Echom Science & Technology Co., Ltd.

Board of Advisors

Co-chairman
Zhongtuo Wang  Academician of Chinese Academy of Engineering
Hai Song  Vice governor of Guangdong Province
Ben Chang  Group Managing Director of IDS, a member of Li and Fung Group

Members
Waiman Cheung  Director, Li & Fung Institute of Supply Chain Mgt. & Logistics, CUHK
Fangruo Chen  Ira Rennert Prof. of Business, Columbia Business School
Jiyong Chen  Dean, College of Economics and Mgt., Wu Han University
Xing Liu  Dean, Mgt. School, Chong Qing University
Sun Linyan  Acting Dean of Mgt. School, Xian Jiaotong University
T. J. Wong  Dean, Faculty of Business Administration, CUHK
Soushan Wu  Dean of College of Management, Chang Gung University

Conference Committee
Chair
Yuanyuan Li  President of South China University of Technology

Vice Chairs
Xiande Zhao  Director, Center for Supply Chain Mgt. & Logistics, the Chinese University of Hong Kong
Guilong Zhu  Dean, School of Business Administration, South China University of Technology
Academic and Award Committee

Chair
Barbara Flynn  Indiana University

Vice Chairs
Kenneth Boyer  Ohio State University
Jian Chen  Tsinghua University
Jeet Gupta  The University of Alabama in Huntsville
Vernon Hsu  The Chinese University of Hong Kong
Aleda Roth  Clemson University
Vinod Singhal  Georgia Institute of Technology
Xiande Zhao  The Chinese University of Hong Kong
Guilong Zhu  South China University of Technology
Yongwu Zhou  South China University of Technology

Organizing Committee

Chair
Yongwu Zhou  South China University of Technology

Vice Chairs
Wei Han  South China University of Technology
Baofeng Huo  Xian Jiaotong University
Stephen Ng  The Chinese University of Hong Kong
Xuejun Xu  South China University of Technology
Aihu Wang  South China University of Technology
Jeff Yeung  The Chinese University of Hong Kong
Fei Ye  South China University of Technology

Members
Ruixia Hu, Lei Yang, Xiaoying Chen, Liping Qian, Peng Wu, Yongzhong Wu, Dongping Tang, Xiaolong Liu, Jianjun Yu, Lu Feng, Jimei Xie, Meiyi Ji, Haofeng Yao, Xiaoyan Yang

Secretary General
Li Yina  South China University of Technology

Secretaries
Ms. Elaine Chu  The Chinese University of Hong Kong
Ms. Cuby Lee  The Chinese University of Hong Kong
Mr. Ein Chan  The Chinese University of Hong Kong
International Program Committee

Co-Chairs
Xiande Zhao  The Chinese University of Hong Kong
Guilong Zhu  South China University of Technology

Vice Chairs
Zhengquan Sha  South China University of Technology
Yongwu Zhou  South China University of Technology
Xuejun Xu  South China University of Technology
Aihu Wang  South China University of Technology

Members

W. C. Benton, The Ohio State U., USA
Thomas E. Callarman, CEIBS, China
Fangruo Chen, Columbia U., USA
Jashen Chen, Yuan Ze U., Taiwan, China
Jiyong Chen, Wuhan U., China
Shaw, K. Chen, U. of Rhode Island, USA
Victor Chen, National Cheng Kung U., Taiwan, China
Ye-sho Chen, Louisiana State U., USA
You-hua Chen, Chinese U. of HK, HK
Houn-gee Chen, National Tsinghua U., Taiwan, China
Li Hua Chen, Peking U., China
C. H. Cheng, Chinese U of HK, HK
Edwin T.C. Cheng, HK Polytechnic U., HK
Russell Ching, California State University, Sacramento, U.S.A.
Ta-Tao Chuang, Gonzaga U., USA
Mark M. Davis, Bentley College, USA
R. Duray, U. of Colorado, USA
James R. Evans, U. of Cincinnati, USA
Xiucheng Fan, Fudan U., China
You-yi Feng, Chinese U. of HK, HK
Robert Filippini, U. of Padova, Italy
Tom Foster, Brigham Young U., USA
Mark Frohlich, Indiana U., USA
Cipriano Froza, U. of Padova, Italy
Yong Geng, Chinese Academy of Science, China
Andy R. S. Guo, National U. of Taiwan, Taiwan
Jatinder Gupta, U. of Alabama, USA

Y. Eldon Li, National Chengchi U., Taiwan
Yanping Li, Wuhan U., China
Yuan Li, Xi-an Jiaotong University, China
Manoj K. Malhotra, U. of South Carolina, USA
Yoshiki Matsui, Yokohama National U., Japan
Hirofumi Matsuo, Kobe U., Japan
Tatikonda Mohan, Indiana U., USA
Sharafali Moosa, U. of Melbourne, Australia
Michael Naor, George Mason U., USA
Stephen Ng, Chinese U., of HK, HK
Winter Nie, IMD, Switzerland
Stuart Orr, Deakin U., Australia
Xiaosong Peng, Texas A&M U., USA
Jack Penm, Australian National U, Australia
Madeleine Pullman, Portland State U., USA
Justin Ren, Boston U. & MIT Sloan School of Mgt., U.S.A.
David Robb, Tsinghua U., China
Verma, Rohit, Cornell U., USA
Aleda V. Roth, Clemson U., USA
M. Johnny Rungtusanatham, U. of Minnesota, USA
Scott E. Sampson, Brigham Young U., USA
Joseph Sarkis, Clark U., USA
Roger W. Schmenner, Indiana U., USA
Willem Selen, Macquarie U., Australia
Suresh P. Sethi, U. of Texas at Dallas, USA
Chewn Sheu, Kansas State U., USA
Xin-ping Shi, HK Baptist U., HK
Chin-tay Shih, National Tsing Hua U., Taiwan, China
Albert Ha, U. of Science and Technology, HK
Feng Hai, Wuhan University, China
Suhaiza Hanim, U. Sains Malaysia, Malaysia
Gang Hao, City U., HK
Norma Harrison, CEIBS, China
Shanshan Hu, Indiana U., USA
Tak-Kee Hui, National U. of Singapore, Singapore
Daesik Hur Yonsei U., Korea
Jayanth Jayaram, U. of South Carolina, USA
Jiehnan Jia, Chinese U. of HK., HK
Jirawan Jitthavech, National Institute of Development Administration, Thailand
Sukran N. Kadipasaoglu, Bahcesehir U., Turkey
Vijay R. Kannan, Utah State U., USA
Dae Soo Kim, Korea U., Korea
Don Kerr U. of the Sunshine Coast, Australia
Jee Young Kim, Yonsei U., Korea
Tai-hyun Kim, Yonsei U., Korea
R. Lawrence Laforge, Clemson U., USA
Fujun Lai, U. of Southern Mississippi, USA
Mike Lai, HK Polytechnic U., HK
Hon-Shiang Lau, City U., HK
Eldon Li, National Chengchi U., Taiwan
Ting-Peng Liang, City U., HK
Bing Lian Liu, Nankai U., China
Bin-shan Lin, Louisiana State U. in Shreveport, USA
Jung Hoon Lee, Yonsei U., Korea
Matthew K O Lee, City U., HK
Chung Yee Lee, HK U. of Science and Technology, HK
Tien Sheng Lee, Hang Seng School of Commerce, HK
Keong Leong, U. of Nevada Las Vegas, USA
Janny M. Y. Leung, Chinese U. of HK, HK
Han-lin Li, National Chiao Tung U., Taiwan
Jun Li, Southwest Jiao Tong U., China
Vinod Singhal, Georgia Institute of Technology, USA
Kingshuk K. Sinha, U. of Minnesota, USA
Vicki Smith-Daniels, Arizona State U., USA
Hua Song, People’s U. of China, China
Linda G. Sprague, Rollins College, U.S.A.
Chee-chuong Sum, National U. of Singapore, Singapore
Lin-yan Sun, Xian Jiaotong U., China
Morgan Swink, Michigan State U., USA
Liwen Tan, Wuhan U., China
Alberto de Toni, U. of Udine, Italy
Hsien-Tang Tsai, National Sun Yat-Sen U., Taiwan, China
Fugee Tsung, HK U. of Science & Technology, HK
Mohan V. Tatikonda, Indiana U., USA
Yu Tian, Zhong Shan U., China
Rohit Verma, Cornell U., USA
Chris Voss, London Business School, UK
Xianjia Wang, Wuhan U., China
Scott Webster, Syracuse U., USA
Jih-Hwa Wu, National Sun Yat-sen U., Taiwan, China
Sarah Wu, Fordham U., USA
Xianming Wu, Wuhan U., China
Qiinghua Xia, Wuhan U., China
Yi-fan Xu, Fudan U., China
Hou-min Yan, Chinese U. of HK, HK
Hong Yan, HK Polytechnic U., HK
Benjamin Yen, U. of HK, HK
Andy Yeung, HK Polytechnic U., HK
Rebecca H. J. Yen, Yuan Ze U., Taiwan, China
Suhaiza Zailani, U. Sains Malaysia, Malaysia
Zongyi Zhang, Chongqing U., China
Qinghua Zhu, Dalian U. of Technology, China
Honggeng Zhou, U. of New Hampshire, USA
Sean Zhou, Chinese U. of HK, HK
Preface

We would like to welcome all of you to the Joint Conference of The 4th International Conference on Operations and Supply Chain Management and The 15th Asia Pacific Decision Sciences Institute. This joint conference is jointly organized by the Centre for Supply Chain Management and Logistics, Li & Fung Institute of Supply Chain Management and Logistics, The Chinese University of Hong Kong, School of Business Administration, South China University of Technology and Centre for International Business Education and Research, Indiana University, the International Conference of Operations and Supply Chain Management.

The theme of the conference is Innovation and Technology Management in Supply Chains. Innovation and technology management in supply chains have become a very important approach to enhance competitiveness in today’s business environment. How supply chain learning and collaborations help to improve the firm’s innovative capabilities in introducing new products/services, applying new production processes and adopting new logistics and supply chain management practices are critical topics of discussion by practitioners and important topics of research for academic researchers. The Pearl River Delta (PRD) areas of China are one of the most developed areas in China, and manufacturing firms in the PRD play a very important role in global supply chains. However, they are also facing tough challenges in global competition due to the decrease in demands caused by the recent global financial crises, the appreciation of Chinese currency and rising costs of labor and other production inputs.

To overcome these challenges, the Guang Dong Government and companies in the PRD have been working hard to enhance their knowledge and expertise and upgrade their role in the global value chain. There are also constant drives for these companies to collaborate with and learn from their supply chain partners to enhance their knowledge capital. Some of these companies have done very well in the global competition by integrating resources and capabilities from different partners. Some of these companies have gained tremendous competitive advantages over their competitors through simultaneous applications of low cost and differentiation strategies backed up by technological and management innovation capabilities. Companies such as Galanz, Midea, Gree, Huawai have rapidly gained market shares in the increasingly competitive market place. Under the support and guidance of both the central and provincial government, these companies are building innovation platform and support system, continuously increasing Research and Development (R&D) expenses to promote Industry-University-Research cooperation and improve their innovation capabilities. Hong Kong owned companies play a very important role in the development of the PRD economy, and the Hong Kong government has also been working hard to promote innovation and economic integration with the PRD. The Hong Kong Science and Technology Parks play a very important role in promoting commercialization and transfer of technologies from Universities and Research Institutes to companies in the PRD. Despite many successes, there are also many challenges and problems in collaborations and cooperation among supply chain partners (government, university, suppliers, manufacturers and customers) among companies in China. In the global landscape, the challenges and opportunities in the global operations and supply chain management are also unprecedented. Competition is intense; sophisticated technologies and management techniques are required to cope with these challenges and opportunities.
The purpose of the conference is to provide a platform for academic researchers, industry practitioners and government officials to share information and exchange ideas as to how to enhance the global competitiveness of firms through supply chain collaborations, learning and subsequent improvement in innovative capabilities. We hope that this conference will stimulate interesting and fruitful discussions about the challenges and issues related to operations and supply chain management. We believe that this conference will foster more collaborative research that will advance the theories and methodologies of operations and supply chain management and will provide guidelines and solutions to some of the challenges and problems facing practitioners.

We are very grateful that so many scholars and practitioners have contributed to this conference. We have received more than 250 submissions from 22 countries. Out of which we selected 160 papers for presentations in different sessions. We also have ten special invited sessions.

We want to thank Dr. Victor Fung, Chairman of the Li & Fung Group, Dr. Manuel, F. Costa, Chief Technology Officer, Hong Kong Applied Science and Technology Research Institute, Mr. Ran Xian, President, Guangzhou Echom Science & Technology Co., Ltd, and Dr. Xu Long, President of Guang Dong Mobile Company for giving the industry keynote speeches. We also want to express our appreciation to our academic keynote speakers: Profs. Vinod Singhal, Jian Chen, Cheryl Gaimon, Kenneth Boyer, Soumen Ghosh, Aleda Roth, Barbara Flynn and Steven Melnyk for sharing their research findings and insights as to how to conduct quality research.

Specials thanks should be given to the many people from the three co-organizing organizations who devoted countless number of hours in making the detailed arrangements for the conference. We would like to thank the cosponsors of the conference whose contributions have made many of the events and activities possible.

Finally we hope that all the participants will enjoy the sessions of the conference and will have a memorable time in Hong Kong and Guangzhou!

Best wishes to you and thank you for attending this conference

Sincerely yours,

Conference Chair:
Yuanyuan Li President of South China University of Technology

Vice Conference Chairs:
Xiande Zhao, Director, Center for Supply Chain Mgt. & Logistics, The Chinese University of Hong Kong
Guilong Zhu, Dean, School of Business Administration, South China University of Technology