

Academic Program

Presentation Schedule and Rooms

12-14 December 2017

Registration Desk

Level 24

12-14 December 2017

All Plenary Sessions

Level 24

Rooms 2414-2415

TRACK ABBREVIATIONS

Track Name

Artificial Intelligence and Data Analytics **DAT**

Behavioural Supply Chain and Operations Management **BSC**

General Operations **GEN**

Healthcare Operations Management **HCO**

Product Innovation and Technology Management **ITM**

Service Operations **SER**

Supply Chain Management **SCM**

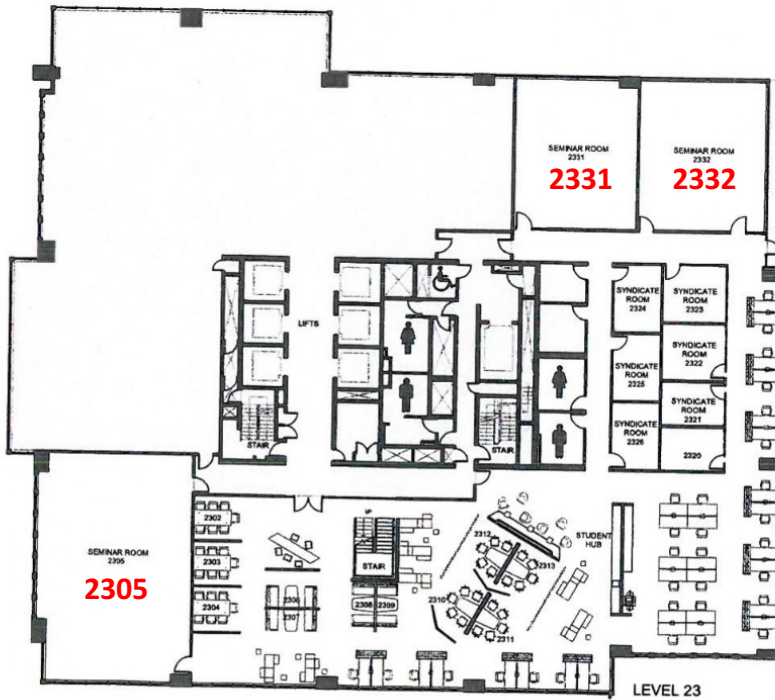
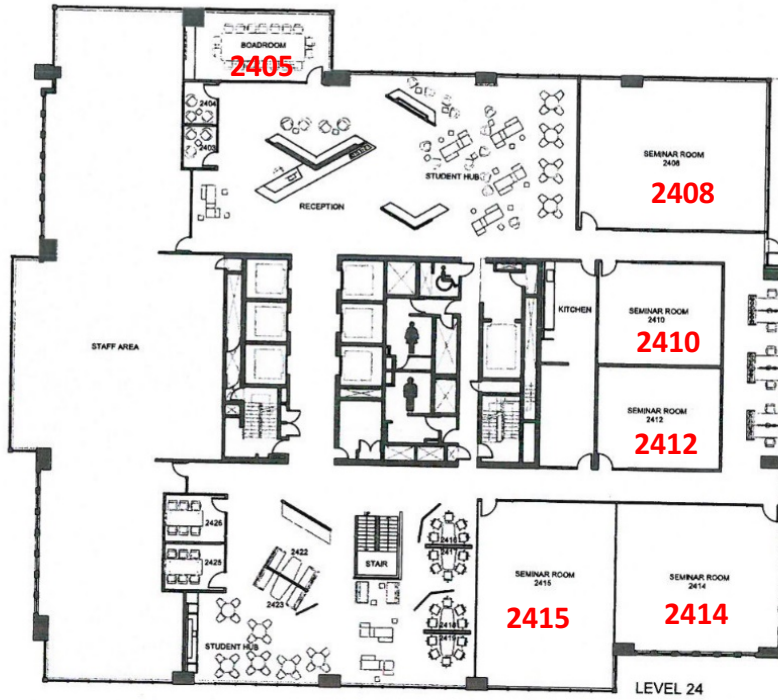
Sustainable Operations **SUS**

ROOM ALLOCATIONS

PRODUCTION AND OPERATIONS MANAGEMENT SOCIETY 2017 INTERNATIONAL CONFERENCE – SYDNEY, AUSTRALIA PLENARY and PARALLEL SESSIONS				
Tuesday, 12 December 2017				
TRACK	9.00 AM - 10.30 AM	11.00 AM - 12.30 PM	1.30 PM - 2.45 PM	3.15 PM - 4.45 PM
PLENARY	2414/5		2414/5	
BSC				
DAT				
GEN				
HCO		2410		
ITM		2414		2332
SER		2332		2410
SCM		2415, 2305		2415, 2414
SUS		2331		2331
Workshop				2305
Wednesday, 13 December 2017				
PLENARY		2414/5		2414/5
BSC	2412		2412	
DAT				2332
GEN				
HCO	2410		2405	
ITM	2408			
SER				2305
SCM	2331, 2332		2331, 2332	
SUS	2305		2305	
Workshop			2415	
Thursday, 14 December 2017				
PLENARY	2414/5			
BSC		2332		
DAT		2331		
GEN		2414		
HCO				
ITM		2305		
SER		2412		
SCM	2331, 2305	2415		

KEY - BSC: Behavioural Supply Chain and Operations Management;
DAT: Artificial Intelligence and Data Analytics; **HCO:** Healthcare Operations Management;
ITM: Product Innovation and Technology Management; **SER:** Service Operations;
SCM: Supply Chain Management; **SUS:** Sustainable Operations; **GEN:** General Operations

CONFERENCE ROOM LOCATIONS



Macquarie University City Campus
Levels 23 and 24, 123 Pitt Street, Sydney



Workshops

Tuesday, 12 December 2017

3.15 PM – 4.45 PM

1215-WKSP

Session Title: **INNOVATIVE METHODS IN OPERATIONS AND SUPPLY CHAIN MANAGEMENT – Rm 2305**

Presenters:

Chris Voss, Professor Emeritus, London Business School and
Professor, Warwick Business School, UK

Thomas J. Kull, Associate Professor of Supply Chain Management, W.P. Carey School of
Business and Thunderbird School of Management, Arizona State University

Professor Chris Voss will discuss the impact on design science, case and field research in Operations Management approaches. Built on initiatives from the Journal of Operations Management there is growing attention to the use of design science approaches in research where the use of multiple cases has been recommended for the evaluation phase of this approach. In addition, there would seem to be increasingly tough demands for rigour required for publishing case-based research in top journals.

Sterman's (1989) paper on dynamic decision-making was seminal in studying the supply chain "bullwhip" phenomenon. Integral to the paper was the use and discussion of the Beer Distribution Game, a role-playing simulation used in class at MIT for three decades at that time. While the OSCM field has since recognized the value of experimentation, it seems to have missed a key lesson from the Sterman paper – the value of classroom simulations to discover and elaborate OSCM knowledge. **Professor Thomas Kull** will help recover that key lesson, presenting results and observations from supply chain experiential learning methods, while demonstrating and discussing ways to use in-class simulations to discover and elaborate on supply chain phenomena.

Wednesday, 13 December 2017

1.30 PM – 2.45 PM

1313-WKSP

Session Title: **MEET THE EDITORS – Rm 2415**

Presenters:

Tava Olsen, University of Auckland Business School, New Zealand

Associate Editor for *Management Science*, *Manufacturing & Service Operations Management (M&SOM)*, and *Operations Research*

Senior Editor, *Production and Operations Management (POM)*

Xenophon Koufteros, Texas A & M University, USA

Member, Editorial Review Board of *Production and Operations Management (POM)*

Damien Power, The University of Melbourne, Australia

Asia Pacific Editor, *Journal of Supply Chain Management (JSCM)*

Kristian Rotaru, Monash University, Australia

Member, Editorial Review Board of *Journal of Operations Management (JOM)*

The aim of this session is to discuss the current performance and reach of some of the sought-after journals as well as their editorial policies, and to provide guidance for prospective authors.

Regular Sessions

Presentation Schedule

Tuesday, 12 December 2017

Sessions for Tuesday, 12 December 2017

Tuesday, 11.00 AM – 12.30 PM

Tuesday, 11:00 AM – 12.30 PM

Track: Healthcare Operations Management

Session: Healthcare Improvements – Rm 2410

Chair: Claire Lindsay, Napier University, United Kingdom

1211-HCO1 An Evaluation of Rapid Process Improvement Workshops using Multiple Interrupted Time Series Analysis

Chris Hicks, Newcastle University, United Kingdom
Tom McGovern, Newcastle University, United Kingdom
Adrian Small, Newcastle University, United Kingdom
Nick Steen, Newcastle University, United Kingdom
Paula Whitty, Newcastle University, United Kingdom
Jonathan Erskine, Durham University, United Kingdom
David Hunter, Durham University, United Kingdom

Healthcare organisations have sought to increase quality and efficiency through implementing Lean. This paper evaluates a case study that comprised three psychosis pathways that had been subject to a Rapid Process Improvement Workshop (RPIW) intervention using a multiple ITS design with five controls sites.

1211-HCO2 Comparative Study of Austrian and Singaporean Healthcare Systems – Multiple Stakeholder Perspective

Odkhishig Ganbold, National University of Singapore, Singapore
Ma Xiuyan, National University of Singapore, Singapore
Nikolaus Haslinger, University of Applied Sciences, Austria
Yoshiki Matsui, Yokohama National University, Japan
James Ang Soo Keng, National University of Singapore, Singapore
Robert De Souza, National University of Singapore, Singapore

This study examines two structurally different healthcare systems, i.e. Austrian and Singaporean healthcare systems, from multiple stakeholder perspective by conducting interview survey with healthcare professionals and stakeholders from both countries' healthcare institutions.

1211-HCO3 Is the hospital ready to rollout lean implementation? - A methodology for assessing the organizational readiness

Gopalakrishnan Narayanamurthy, University of St. Gallen, Switzerland
Anand Gurusurthy, Indian Institute of Management Kozhikode (IIMK), India
Nachiappan Subramanian, University of Sussex, United Kingdom

A success or failure during the implementation of lean thinking (LT) in a hospital is also dependent on its readiness. Using the assessment method, lean readiness elements and sub-elements listed in the readiness framework are ranked at overall and stakeholder level. Based on these rankings, areas to improve the readiness of the case hospital for lean implementation are identified.

1211-HCO4 Kaizen, Targets and Sustainability: Lean Programme analysis in the NHS in Scotland

Claire Lindsay, Napier University, United Kingdom
James Aitken, University of Surrey, United Kingdom

In Scotland, a Health Board, known as Health Board Two (HB2), had been recognised as an early adopter of Lean utilising an organisational wide approach encompassing the entire clinical pathway. Since the commencement of the HB2 Lean programme, the organisation has released annual reports of Lean implementation and achievements. The analysis of HB2 found that the organisation faced several challenges in the sustainability of projects and their reporting.

Tuesday, 11.00 AM – 12.30 PM

Tuesday, 11:00 AM – 12.30 PM

Track: Product Innovation and Technology Management

Session: Improving Performance through R&D – Rm 2414

Chair: Nicolas Brune, RWTH Aachen University, Germany

1211-ITM1 Innovation Orientation for Competitive Advantage and Business Performance: A Supply Chain Perspective

Spring Zhou, Massey University, New Zealand
Tava Olsen, University of Auckland, New Zealand

Few studies have examined the linkage between strategic directions of innovation and supply chain management and their impact on business performance. This work contributes to addressing this research gap.

1211-ITM2 Additive Manufacturing and the Potential Impact on Supply Chain Management Costs and Working Capital

Cecil Bozarth, North Carolina State University, USA
James Aitken, University of Surrey, United Kingdom
Neil Turner, Cranfield University, United Kingdom

Through the use of a structured interview protocol, designed to illicit what models and frameworks, if any, are being used by companies to evaluate the SCM costs and working capital impacts of 3D printing, the researchers aimed to close the literature gap and provide sourcing professionals with a framework to directly assess the financial impact of the technology.

1211-ITM3 An Empirical Examination of the Relationship of Organizational Flexibility and Project Portfolio Performance: The Mediating Role of Innovation

Muhammad Aamir Saeed, Nankai University, China.
Yuanyuan Jiao, Nankai University, China
Muhammad Mohsin Zahid, Institute of Information Technology, Pakistan
Humaira Tabassum, Nankai University, China

This study aims to empirically analyze the effects of organizational flexibility on the project portfolio performance, with the mediating role of innovation and moderating effects of absorptive capability and environmental dynamism.

1211-ITM4 How Product Centric Manufacturers Pursue Servitisation to achieve a Competitive Edge

Julie Donovan, University of Canterbury, New Zealand
Pavel Castka, University of Canterbury, New Zealand

The paper will outline the initial findings into how product manufacturers pursue servitisation to differentiate their offerings to achieve a competitive edge. Servitisation is a process where there is an increased offering of customer focussed combinations of product and services to add value to core product offerings.

1211-ITM5 Market perception on digital technology adoption in manufacturing and its changes over time

Nicolas Brune, RWTH Aachen University, Germany
David Bendig, RWTH Aachen University, Germany
Malte Brettel, RWTH Aachen University, Germany

This study contributes in two ways: Firstly, it is the first paper using an event study approach to specifically address market reaction digital technologies in manufacturing. Secondly, this focus on timing adds to the discussion whether current attention on digital technologies noticeably changed investor's expectation over time.

Tuesday, 11.00 AM – 12.30 PM

Tuesday, 11:00 AM – 12.30 PM

Track: Supply Chain Management

Session: Supply Chain Risk and Governance – Rm 2415

Chair: Yacob Khojasteh, Sophia University, Japan

1211-SCMa1 Buyer–Supplier Social Capital for Supply Risk Mitigation of Small and Medium-sized Enterprises

Priyabrata Chowdhury, RMIT University, Australia
Kwok Hung Lau, RMIT University, Australia
Siddhi Pittayachawan, RMIT University, Australia

Considering the profound impact of supply risk on several financial and non-financial performances of small and medium-sized enterprises (SMEs), there is a need for formulating appropriate strategy that can mitigate supply risk of SMEs. The study investigates both direct and indirect effects, through supplier integration, of buyer–supplier social capital on supply risk of SMEs.

1211-SCMa2 The effects of relational capability on supply chain adaptability- moderating role of governance mechanism

Javad Feizabadi, Malaysia Institute for Supply Chain Innovation, Malaysia
Carlos Cordon, International Institute for Management Development, Switzerland

Adaptive capability should be created both within the firms and across its relationships with suppliers and customers. Grounding on relational view of the firm, this study examines the effect of relational capability on supply chain adaptability from strategic suppliers of three automakers in a developing country.

1211-SCMa3 Vulnerability Measurement in Supply Chains: An Empirical Study

Yacob Khojasteh, Sophia University, Japan
Yasutaka Kainuma, Tokyo Metropolitan University, Japan

In recent years, the risk of supply chain disruptions has increased by the various events such as natural disasters. In this study, we examine the current status and challenges of disruption management in the supply chain of the automotive industry by focusing on Japan.

1211-SCMa4 Crypto-currency and supply chains – Is there a fit?

Moira Scerri, University of Technology Sydney, Australia
Renu Agarwal, University of Technology Sydney, Australia

Invoicing currency strategy is an important factor for supply chains and is indicative of the level of economic risk and which parties bear risks in global supply chains. This research explores and compares management techniques for exchange rate exposure in the currency payment processes and though the use of different currencies when deploying block chain technology and crypto-currency.

1211-SCMa5 Logistical Network Resilience: Modelling New Zealand’s Log Exports

Mohammed Alaqqad, Massey University, New Zealand
Paul Childerhouse, Massey University, New Zealand
Carel Bezuidenhout, SCION, New Zealand
Spring Zhou, Massey University, New Zealand
Ginny Christians, SCION, New Zealand

Extended global supply chains are vulnerable to spatially disparate risks. The inter-connected and inter-dependency of modern logistical networks means tsunamis, strikes, hurricanes, bio-security threats and war can impact a wide range of supply chain actors, often separated by great distances. The objective of this research is to develop a modelling approach to evaluate logistical network resilience.

Tuesday, 11.00 AM – 12.30 PM

Tuesday, 11:00 AM – 12.30 PM

Track: Supply Chain Management

Session: Emerging Issues in Supply Chains – Rm 2305

Chair: Mozart B.C. Menezes, Kedge Business School, France

1211-SCMb1 Is the Fit Between Supply Chain Strategy and Product Type Important? Analytical Evidence

Mojtaba Mahdavi, The University of Auckland, New Zealand

Tava Lennon Olsen, The University of Auckland, New Zealand

This study analytically explores whether and how supply chain strategies should be in alignment with product/demand characteristics. In this paper, we address the issues of lack of sufficient strong (analytical) support for the alignment. More specifically, we analyze the impact of demand variability, product life-cycle, and contribution margin on two fundamental supply chain strategies, i.e., efficient and responsive.

1211-SCMb2 To alternate or not to alternate: sales promotion under supply chain competition

Mohsen Reisi, The University of Sydney Business School, Australia

Masoud Talebian, Sharif University of Technology, Iran

Behnam Fahimnia, The University of Sydney Business School, Australia

Possible scenarios of promotion timing are analysed and profits of the firms as well as the whole supply chain are determined. The variations in national brand attractions are shown to impact these profits under different scenarios of promotion timing.

1211-SCMb3 A Framework for Measuring Supply Chain Complexity with Internal and External Consistency

Mozart B.C. Menezes, Kedge Business School, France

Diego Ruiz-Hernández, Colegio Universatirio de Estudios Financieros – CUNEF, Spain

The field of supply chain management needs a framework (and a measure) for complexity. In this context complexity is understood as the difficulty to properly manage supply chain operations due to an excessive amount of information. This work is based on Shannon's measure of information, this measure has a complete theory developed around, from which we can borrow for our work on complexity.

Tuesday, 11.00 AM – 12.30 PM

Tuesday, 11:00 AM – 12:30 PM

Track: Service Operations

Session: Service Quality and Knowledge Management – Rm 2332

Chair: Eve D. Rosenzweig, Emory University, USA

1211-SER1 Addressing Work Stress in Primary Education using Value Stream Mapping

Jan Riezebos, University of Groningen, Netherlands
Marjon Faber, University of Groningen, Netherlands
Babette Huisman, University of Groningen, Netherlands
Lieke de Groot, University of Groningen, Netherlands

This study examines the use of value stream mapping by a team of teachers of Primary Education in order to identify possibilities to reduce stress for teachers. We describe and evaluate the use of value stream mapping as a rational coping strategy for teams of teachers to overcome work-related stressors.

1211-SER2 Empirical Research on the Effect of Service Recovery Quality on Consumers' Repurchase Intention

Hanyang Luo, Shenzhen University, China
Yanan Yu, Shenzhen University, China
Wei Huang, Shenzhen University, China
Cai Zhiwei, Shenzhen University, China

This paper focuses service recovery issue in e-business. By dividing service recovery quality into four dimensions: interactive quality, processing quality, environment quality and outcome quality, we study the impact of each dimension on consumers' repurchase intention and the moderating effect of customer relationship.

1211-SER3 It's a Virtuous Cycle! The Role of Feedback Loops in Reinforcing Service Quality

Eve D. Rosenzweig, Emory University, USA
Carrie Queenan, University of South Carolina, USA
Ken Kelley, University of Notre Dame, USA

Research on the service-profit chain provides important insights regarding how organizations attain service excellence. However, this research stream does not shed light on the mechanisms by which service organizations sustain such excellence, despite the struggles of many organizations to do so.

Tuesday, 11.00 AM – 12.30 PM

Tuesday, 11:00 AM - 12:30 PM

Track: Sustainable Operations

Session: Quality and Sustainable Supply Chains – Rm 2331

Chair: Gyan Prakash, Indian Institute of Information Technology & Management, India

1211-SUS1 Quality Management Practices and Sustainability Performance: The Moderating Role of Contextual Factors

Minh Hue Nguyen, Vietnam National University, Vietnam
Anh Chi Phan, Vietnam National University, Vietnam
Yoshiki Matsui, Yokohama National University, Japan

This study seeks to investigate the relationship between quality management practices and sustainability performance as well as the moderating effects from quality management implementation timeline, type of industry, and firm size on this relationship.

1211-SUS2 Sustainability Performance Framework in Manufacturing (SPFM)

Aamir Rasheed, University of Strathclyde, United Kingdom
Rentizelas Athanasios, University of Strathclyde, United Kingdom
Bill Ion, University of Strathclyde, United Kingdom

This paper aims to present a sustainability performance framework in manufacturing that allows concerned stakeholders, including consumers to participate in the selection of sustainability elements and indicators using a quality function deployment-based tool (QFD).

1211-SUS3 Truck Fleet Optimization Based on Logistics Costs – An Empirical Investigation

John Jairo Posada-Henao, Universidad Nacional de Colombia at Medellin, Colombia
Carlos A. Gonzalez-Calderon, Universidad Nacional de Colombia at Medellin, Colombia
Ricardo Quintero-Giraldo, Universidad Nacional de Colombia at Medellin, Colombia

This paper analyses the trucking fleet costs and the impact in the final selling price of each commodity in Colombia. In doing so, the authors analyzed optimal costs and number of vehicles (per truck type) needed to transport different amounts of cargo by commodity group between cities based on the capacities and transportation costs of the trucks.

1211-SUS4 Identifying Risk and enhancing Performance in the Organic Food Supply Chains

Gyan Prakash, Indian Institute of Information Technology & Management, India

This paper aims to analyze structural relationship among risk factors and performance measures in the organic food supply chains. Presence of many risk factors and their consequent direct and indirect impacts necessitate prioritization of risk factors for effective performance management.

Tuesday, 3.15 PM – 4.45 PM

Tuesday, 3:15 PM – 4:45 PM

Track: Product Innovation and Technology Management

Session: Methods in Production Planning and Logistics – Rm 2332

Chair: Shoshana Anily, Tel Aviv University, Israel

1215-ITM1 Evaluating the Performance of Storage and Retrieval Machines Based on Cable Robots Under Real-World Conditions

Cyril Alias, University of Duisburg-Essen, Germany

Udo Salewski, w3logistics AG, Germany

Bernd Noche, University of Duisburg-Essen, Germany

In times of continuous growth of e-commerce and related consignment volumes to be handled and transported, the significance of technical elements like storage and retrieval machines (SRM) rises. Several new systems are currently under development and expected to enter the global markets in the foreseeable future.

1215-ITM2 The Role of Digital Standards in Managing Australian Public Service Innovation

Eric Patterson, University of Technology Sydney, Australia

Renu Agarwal, University of Technology Sydney, Australia

Roy Green, University of Technology Sydney, Australia

Christopher Bajada, University of Technology Sydney, Australia

Digital services are a disruptive innovation helping the Australian government deliver public services to a greater number of citizens faster and more efficiently than ever before (United Nations, 2016). Australia introduced its Digital Service Standard (DSS) in May 2015 and this research reviews the role of this standard in fostering public service innovation.

1215-ITM3 Validating the Benefits of Complex Event Processing and Predictive Analytics in Logistics by Industry Experts

Cyril Alias, University of Duisburg-Essen, Germany

J. Rod Franklin, Kühne Logistics University, Germany

With ever new technologies evolving and diffusing into the areas of transportation, logistics, and supply chain management and the era of big data promising ubiquitous availability of data and sources, new opportunities of optimizing processes and improving performance are opened up. More precisely, new applications of collecting data lead to a quantitatively and qualitatively enhanced information base.

1215-ITM4 Production Planning and Scheduling in Multi-Product, Multi Machine Settings

Shoshana Anily, Tel Aviv University, Israel

Awi Federgruen, Columbia University, USA

Haim Yona, Tel Aviv University, Israel

We consider a deterministic, stationary over time, long-run production and scheduling problem of a number of products on identical machines, called the multi-machine multi-product Economic Lot Scheduling Problem (MELSP), which is a generalization of the single machine ELSP. We propose two heuristics based on group technology that are extremely efficient computationally and their worst case performance is analysed.

Tuesday, 3.15 PM – 4.45 PM

Tuesday, 3:15 PM – 4:45 PM

Track: Supply Chain Management

Session: Performance Frameworks and Measurement in Supply Chains – Rm 2415

Chair: Kiran Kumaraswamy, Indian Institute of Management Bangalore, India

1215-SCMa1 Metrics and Methods for Improving Resilience in Agribusiness Supply Chains

Golnar Behzadi, The University of Auckland, New Zealand

Michael Justin O'Sullivan, The University of Auckland, New Zealand

Tava Lennon Olsen, The University of Auckland, New Zealand

Abraham Zhang, Auckland University of Technology, New Zealand

In this paper, we formulate profit (P) and a number of resilience measures to capture the recovery process in a small Agribusiness Supply Chain (ASC) design problem under port disruption. The resilience measures include: 1) time-to-recovery – TTR; 2) the recovery level – RL; 3) the lost profit during the recovery period – LPR; which are commonly used in the literature and a new measure defined by this study: 4) the net present value of the loss of profit over all time-periods – NPV-LP.

1215-SCMa2 Process Improvement Investments in the Context of Strategic Inventories and Strategic Consumer

Benny Mantin, University of Waterloo, Canada

Jasper Veldman, University of Groningen, The Netherlands

We study the effect of a manufacturer's process improvement investments on strategic inventories, as these investments lower the manufacturer's cost of production and wholesale prices. We find that process improvement suppresses strategic inventories and can eliminate strategic inventories when holding costs are high enough.

1215-SCMa3 Quality Improvement Initiatives in Supply Chains: A Communities of Practice Approach

Kiran Kumaraswamy, Indian Institute of Management Bangalore, India

Diatha Krishna Sundar, Indian Institute of Management Bangalore, India

Siddharth Mahajan, Indian Institute of Management Bangalore, India

Small and Medium Enterprises (SME) are gradually moving for quality initiatives, like Lean, which are known for cost reduction, quality improvement and enhancing survivability of the firms. We attempt to understand the impact of communities of practice (CoP) on quality initiatives of the firms and the overall quality level of the community (industry) itself. The prime aim of this work is to understand the impact of CoP activities on quality initiatives of firms in a competing environment.

1215-SCMa4 Success Factors for Lean Transformation of Supply Chains: An Empirical Study of Indian Companies

Saideep Rathnam, University of Twente, The Netherlands

Kiran Kumaraswamy, Indian Institute of Management Bangalore, India

Diatha Krishna Sundar, Indian Institute of Management Bangalore, India

This study empirically studies the critical success factors in lean transformation of 15 tier 1 and 66 tier 2 companies in India who have been practicing lean transformation. One of the key factors explored is the impact of the depth of understanding of the counterintuitive elements of lean on the overall success of implementation.

Tuesday, 3.15 PM – 4.45 PM

Tuesday, 3:15 PM – 4:45 PM

Track: Supply Chain Management

Session: Information Systems in Supply Chains – Rm 2414

Chair: He Huang, Chongqing University, China

1215-SCMb1 A Heuristic Rule-Based Joint Decision Model of Supply Chain Quick Recovering and Coordinated Scheduling

Bo Hongguang, Dalian University of Technology, China

Wang Xingmian, Dalian University of Technology, China

Wang Qingrui, Dalian University of Technology, China

Li Longlong, Dalian University of Technology, China

We study a two-stage supply chain of “supplier-to-manufacturer” in which the manufacturer is dominant, two machines of the supplier constitute a proportional no-wait flow-shop, and two machines of the manufacturer constitute a proportional no-idle flow-shop. A joint decision model algorithm is designed and a numerical experiment is conducted. The effectiveness of the aforementioned algorithm is proved.

1215-SCMb2 Digitization of Small Retail Supply Chains in India – Antecedents and Challenges

Ravi Seethamraju, University of Sydney, Australia

Diatha Krishna Sundar, Indian Institute of Management Bangalore, India

Kiran Kumaraswamy, Indian Institute of Management Bangalore, India

This study, using a qualitative research methodology that involves cross-sectional field study investigated the antecedents and challenges in the adoption of digital technologies by small retail stores in Indian context. It analysed the potential influence of digital and mobile technologies on these small retail stores business model and investigated the antecedents and challenges in their adoption and ongoing use.

1215-SCMb3 Information Sharing and Information Errors in Supply Chains

Jizhou Lu, Xi’an Jiaotong University, China

Gengzhong Feng, Xi’an Jiaotong University, China

Kin Keung Lai, City University of Hong Kong, Hong Kong PRC

Stephen Shum, City University of Hong Kong, Hong Kong PRC

In this paper, we study the value of information sharing in the presence of either or both types of information errors. In particular, when information is shared, the manufacturer may use both the shared demand information and the retailer’s order quantity to make decisions, or she may rely solely on the shared demand information and disregard the retailer’s order quantity when doing forecasting.

1215-SCMb4 Incentives for Information Transparency under Vertical Information Asymmetry

He Huang, Chongqing University, China

Sammi Yu Tang, University of Miami, USA

Hongyan Xu, Chongqing University, China

In supply chain competition, asymmetric information usually exists either between chains horizontally or within chains vertically or both. This paper studies the incentives for horizontal information transparency between competing downstream firms when upstream suppliers possess private information.

Tuesday, 3.15 PM – 4.45 PM

Tuesday, 3.15 PM – 4.45 PM

Track: Service Operations

Session: Issues in Service Operations – Rm 2410

Chair: Monique L. French, University of Colorado, USA

1215-SER1 A Robust Planning System for Agricultural Management

Bahram Alidaee, The University of Mississippi, USA

Haibo Wang, Texas A&M International University, USA

In the harvest season, farms will hire lots of temporary (seasonal) workers to harvest the crops with a time window due to weather condition and market price. During the harvest season, there are multiple machines working on the same field and these machines can be controlled by one worker or multiple workers depending on the system in the machines.

1215-SER2 Research on Static Service BOM Transformation for Complex Products

Chunliu Zhou, Dalian University, China

Xiaobing Liu, Dalian University, China

Fanghong Xue, Dalian University, China

Kai Li, CRRC Qingdao Sifang Co., Ltd.China

Transformation process from engineering BOM, manufacturing BOM, manufacturing resume to service BOM are explained in detail and described in mathematical model. The proposed SBOM formation method has been developed and deployed in an XBOM system for a high-speed train manufacturer enterprise in China.

1215-SER3 Understanding Expectations of Solo Chinese Tourists to Japan through Netnographic Analysis of Popular Travel Blogs

Kaede Sano, Wakayama University, Japan

Hiroki Sano, Ritsumeikan University, Japan

The tourism and related industries in Japan have been faced a drastic change in the demographics of their customers. Led by a governmental promotional campaign launched in 2003, the number of foreign visitors has increased to 24,039,700 people in 2016 with 31.3% of average annual growth rate since 2012 through 2016.

1215-SER4 Emergency Services Operations: Impact of Disasters on Resource Capabilities

Monique L. French, University of Colorado, USA

Ying Fan, University of Colorado, USA

Gary L. Stading, Texas A&M University, USA

This paper provides substantive understanding of how local emergency services operations are affected by a disaster in a surrounding area and identifies important resource capabilities necessary for responding effectively given the resource constraints imposed when a disaster diverts resources from routine operations.

Tuesday, 3.15 PM – 4.45 PM

Tuesday, 3:15 PM – 4:45 PM

Track: Sustainable Operations

Session: Waste and Emissions Issues – Rm 2331

Chair: Afshin Mansouri, Brunel University, United Kingdom

1215-SUS1 Carbon Emission Reduction Strategies for Two Competing Firms Under Cap-and-Trade Regulation with Consumers' Preference

Jingna Ji, South China University of Technology, China

Tao Li, Santa Clara University, USA

Lei Yang, South China University of Technology, China

This paper develops price and low-carbon competition models between one responsible manufacturer (RM) and one ordinary manufacturer (OM) under the influences of consumers' low-carbon preference. We investigate how OM's low-carbon production choice is affected by factors such as cap-and-trade regulation and competitive environment.

1215-SUS2 Evaluation of Solid Waste Management Policies and their Impact on Interstate Waste Transportation in NSW

Behnam Hosseini Dastjerdi, Macquarie University, Australia

Masud Behnia, Macquarie University, Australia

Waste generation has imposed a significant burden on the environment and has become a controversial challenge worldwide. The aim of this study was to review the laws and government levies on waste management in New South Wales and also to assess the global warming consequences of transportation of waste interstate.

1215-SUS3 Supply Chain Contracting under Emission Taxation: Promoting Suppliers' Environmental Innovation

Sang Won Kim, The Chinese University of Hong Kong, Hong Kong PRC

Bosung Kim, University of British Columbia, Canada

Kun Soo Park, KAIST College of Business, Republic of Korea

Se Youn Jung, KAIST College of Business, Republic of Korea

With growing concerns on pollutant emissions from manufacturing processes, emission taxation by governments is becoming increasingly popular, aiming to incentivize manufacturers' environmental innovation. This paper studies the role of supply chain contracts in promoting suppliers' environmental innovation.

1215-SUS4 Modelling the Competitive Behaviour of Vessels as a Source of Fuel Emissions in Maritime Shipping

Afshin Mansouri, Brunel University, United Kingdom

Özlem Ergun, Northeastern University, USA

Maritime shipping as the largest carrier of cargo around the world is responsible for about 2.2% of the global greenhouse gas emissions. We provide a modelling framework as a queuing system in a game theoretic setting. We consider the sea port as a single server queuing model in which, vessels decide about their arrival time and join a queue upon arrival and wait to be served.

Tuesday, 3.15 PM – 4.45 PM

Workshop

Tuesday, 3.15 PM – 4.45 PM

1215-WKSP

**Session Title: INNOVATIVE METHODS IN OPERATIONS AND
SUPPLY CHAIN MANAGEMENT – Rm 2305**

Presenters:

Chris Voss, Professor Emeritus, London Business School and
Professor, Warwick Business School, UK

Thomas J. Kull, Associate Professor of Supply Chain Management, W.P. Carey School of
Business and Thunderbird School of Management, Arizona State University

Professor Chris Voss will discuss the impact on design science, case and field research in Operations Management approaches. Built on initiatives from the Journal of Operations Management there is growing attention to the use of design science approaches in research where the use of multiple cases has been recommended for the evaluation phase of this approach. In addition, there would seem to be increasingly tough demands for rigour required for publishing case-based research in top journals.

Sterman's (1989) paper on dynamic decision-making was seminal in studying the supply chain "bullwhip" phenomenon. Integral to the paper was the use and discussion of the Beer Distribution Game, a role-playing simulation used in class at MIT for three decades at that time. While the OSCM field has since recognized the value of experimentation, it seems to have missed a key lesson from the Sterman paper – the value of classroom simulations to discover and elaborate OSCM knowledge.

Professor Thomas Kull will help recover that key lesson, presenting results and observations from supply chain experiential learning methods, while demonstrating and discussing ways to use in-class simulations to discover and elaborate on supply chain phenomena.

Regular Sessions

Presentation Schedule

Wednesday, 13 December 2017

Sessions for Wednesday, 13 December 2017

Wednesday, 9.00 AM – 10.30 AM

Wednesday, 9:00 AM – 10:30 AM

Track: Behavioural Supply Chain and Operations Management

Session: Cognitive Psychological Implications - – Rm 2412

Chair: Xenophon Koufteros, Texas A & M University, USA

1309-BSC1 Behavioural Aspects of Tacit Knowledge – Role of Hierarchy and Expertise on Learning New Manufacturing Tasks

Fehmi Muhsin Yüksel , RWTH Aachen University, Germany

Peter Letmathe, RWTH Aachen University, Germany

Compared to tacit knowledge, research states that explicit knowledge transfer is superior for learning new tasks in manufacturing. This study tests how performance, performance improvements but also behavioural and perceptive values are influenced when transferring tacit knowledge.

1309-BSC2 Forecasting vs. Decision Making: The Impact of Service Level and Product Shelf Life

Behnam Fahimnia , The University of Sydney, Australia

Tarkan Tan, University of Technology Sydney, Australia

Meysam Arvan, The University of Sydney, Australia

Enno Siemsen, University of Wisconsin-Madison, USA

This study aims to understand to what extent service level requirement is taken into account when developing the base forecasts; to what extent waste minimisation is taken into account when developing the base forecasts for perishable products; and whether there is a clear relationship between a forecaster's sustainability beliefs and under-forecasting.

1309-BSC3 Decoding Effort: Toward a Measure of Effort Intensity Grounded in Cognitive Pupillometry

Gary Hecht, University of Illinois at Urbana-Champaign, USA

Kristian Rotaru, Monash University, Australia

Axel Schulz, La Trobe University, Australia

Kristy L. Towry, Emory, USA

Alan Webb, University of Waterloo, Canada

Prior research has established a widely-accepted framework of the relationship between incentives and performance (Bonner and Sprinkle 2002). Our study focuses on effort intensity and introduces a new measure of intensity based on the measurement of the size of the pupil (cognitive pupillometry) to overcome previous reliance on indirect proxies of intensity.

1309-BSC4 Supply Management & Ethical Decision Making: A Behavioral Experiment

Xenophon Koufteros, Texas A & M University, USA

This research uses a lab experiment approach to examine whether the reward structure (i.e., beneficiary - Mazar et al. 2008; Umphress et al. 2010; Gino et al. 2013, and timing – O'Donoghue & Rabin 2000; Strathman et al., 1994; Loewenstein & Prelec, 1992) and other salient factors (such as context, motivation, and personal characteristics) have an effect on ethical behaviour.

Wednesday, 9.00 AM – 10.30 AM

Wednesday, 9:00 AM – 10:30 AM

Track: Healthcare Operations Management

Session: Healthcare Decision Making – Rm 2410

Chair: Eric Park, The University of Hong Kong, Hong Kong PRC

1309-HCO1 Assignment of the Elderly to Care workers in Integrated Care Structures

Meiyan Lin, Shenzhen University, China

Lijun Ma, Shenzhen University, China

KwaiSang Chin, City University of Hong Kong, Hong Kong PRC

The rapid aging of the world population has been increasing the demand from the elderly for age-friendly and affordable integrated health and social care services which play a crucial role in affecting the health of elderly and their quality of life. This work presents a Markov decision process (MDP) model that determines the required access in order for the census of elderly waiting for integrated care (IC) in the structures to remain below a given threshold.

1309-HCO2 Decision Support Framework for ‘Leagile’ Healthcare Service Design in Australia: The Lens of Dynamic Capability Theory

Md Maruf Hossan Chowdhury, University of Technology Sydney, Australia

Moira Scerri, University of Technology Sydney, Australia

Renu Agarwal, University of Technology Sydney, Australia

Ensuring quality healthcare service at an affordable cost is very challenging in Australia. Drawing on dynamic capability view this study attempts to develop a decision support framework for a leagile (lean and agile) healthcare service design which will identify the most significant factors contributing to leagile service design and the corresponding strategies to address those.

1309-HCO3 Managing the Appointments with Waiting Time Target

Xingwei Pan, Shanghai Jiao Tong University, China

Na Geng, Shanghai Jiao Tong University, China

Xiaolan Xie, Shanghai Jiao Tong University, China

Jing Wen, Shanghai Jiao Tong University, China

The presence of walk-ins significantly affects the daily operations of clinics. A stochastic programming model is proposed with the objective of minimizing the patients’ weight waiting cost and makespan.

1309-HCO4 Patient Prioritization in Emergency Department Triage Systems: An Empirical Study of Canadian Triage and Acuity Scale (CTAS)

Eric Park, The University of Hong Kong, Hong Kong PRC

Yichuan Ding, University of British Columbia, Canada

Mahesh Nagarajan, University of British Columbia, Canada

Eric Grafstein, Regional Head, Department of Emergency Medicine, Providence Health Care and Vancouver Coastal Health, Canada

Emergency departments (EDs) typically use a triage system to classify patients into priority levels. Decision makers in EDs often have to use their own discretion to route patients. We propose a general discrete choice framework, consistent with queueing literature, as a tool to analyze prioritization behaviors in multi-class queues under mild assumption.

Wednesday, 9.00 AM – 10.30 AM

Wednesday, 9:00 AM – 10.30 AM

Track: Product Innovation and Technology Management

Session: Collaboration and Open Innovation – Rm 2408

Chair: Timofey Shalpegin, University of Auckland, New Zealand

1309-ITM1 Altruism or Shrewd Business? Implications of Technology Openness on Innovations and Competition

He Huang, Chongqing University, China
Geoffrey G. Parker, Dartmouth College, USA
Yinliang (Ricky) Tan, Tulane University, USA
Hongyan Xu, Chongqing University, China

In this paper, we study the incentive of why firms share their proprietary technology with their competitors. In contrast to previous literature focusing on the network effect, our study reveals a novel explanation for why firms are willing to open their technologies.

1309-ITM2 Collaborative innovation for new services development in logistics: An empirical investigation from multiple stakeholders' perspectives

Hari S. Srivastava, Auckland University of Technology, New Zealand
Abraham Zhang, Auckland University of Technology, New Zealand
Lincoln C. Wood, University of Otago, New Zealand

Logistics service providers (LSPs), are facing problems in their service innovation efforts. A collaborative innovation (CI) process with customers and/or IT providers (partners) is an opportunity for LSPs to improve their innovation success and sustain competitive advantage.

1309-ITM3 Environmental Factors, Strategies and Innovation Performance in Developing Countries' Firms

Adegoke Oke, Arizona State University, USA
Daniel Prajogo, Monash University, Australia
Moronke Idiagbon-Oke, Grand Canyon University, USA

We investigate (1) the influence of regulatory coercive and mimetic forces on developing countries' firms' absorptive capacity and the extent to which such firms share information with supply chain partners, and, (2) the effect of firms' absorptive capacity and information sharing on innovation performance.

1309-ITM4 Supplier Incentives in Collaborative Product Development with Internal Competition

Timofey Shalpegin, University of Auckland, New Zealand
Svenja Sommer, HEC Paris, France
Christian van Delft, HEC Paris, France

We study how the firm should allocate the external suppliers of the key component to the NPD internal teams when the suppliers' development efforts are not observable.

Wednesday, 9.00 AM – 10.30 AM

Wednesday, 9:00 AM – 10:30 AM

Track: Supply Chain Management

Session: Collaboration and Procurement in Supply Chains - – Rm 2331

Chair: Stanley E. Fawcett, Weber State University, USA

1309-SCMa1 Emerging Theoretical Paradigms in Purchasing and Supply Chain Management: A Systematic Review of the Literature

Daniel Chicksand, University of Birmingham, United Kingdom
Helen Walker, Cardiff University, United Kingdom

The research presented in this paper is work-in-progress and builds upon an earlier study (see Chicksand et al., 2012) which investigated to what extent purchasing and supply chain management (P&SCM), as a relatively new area of academic enquiry, is ready or able to join the select group of modern scientific disciplines.

1309-SCMa2 Optimal Information Revelation in Multi-attribute Procurement Negotiation

Cheng Qian, Central University of Finance and Economics, China
Kangkang Yu, Renmin University of China, China
Junlin Chen, Central University of Finance and Economics, China

We consider a procurement negotiation process in which a buyer and a supplier negotiate on the price and quality of an object simultaneously. Only the supplier makes offers, and the buyer decides whether to accept or reject. We conduct a laboratory experiment to further investigate the supplier's response to different information revelation policies. Our results contribute to the understanding of the role of pre-negotiation communication in procurement negotiations.

1309-SCMa3 Research on the Decision Method of the Supply-Demand Matching of Logistics Service based on Information Axiom

Zhang Ling-rong, Dalian University of Technology, China
Li Yun-feng, Dalian University of Technology, China
Liu Ya-qi, Dalian University of Technology, China

Aiming at the issue of the bilateral matching of supply and demand of logistics service, and taking the aspiration and practical level into consideration, our study proposes a multi-objective matching decision model based on evaluation information of real number, interval number, triangular fuzzy number, linguistic variable and intuitionistic fuzzy number.

1309-SCMa4 Purposive Supply Chain Design: Evaluating the Maturity of Collaborative Business Models

Stanley E. Fawcett, Weber State University, USA
Amydee M. Fawcett, Weber State University, USA
Sebastian Brockhaus, Weber State University, USA
A. Michael Knemeyer, Ohio State University, USA

Collaborative supply chain design has been called the “enabler of winning business models” and “the most disappointing strategy that has come along to date.” The disparate views emerge from the fact that although some firms are leveraging collaboration to reap valuable competitive advantage, most firms continue to struggle to realign relationships and reconfigure resources to collaborate effectively. Our research shows that collaborative success is not serendipitous.

Wednesday, 9.00 AM – 10.30 AM

Wednesday, 9:00 AM – 10:30 AM

Track: Supply Chain Management

Session: Financial Considerations in Supply Chains - – Rm 2332

Chair: Sushmita Narayana Aghalaya, National Institute of Industrial Engineering, India

1309-SCMb1 Dependence Structure Analysis and VAR Estimation Based on China's and International Gold Price

Zhicheng Liang, The University of Hong Kong, Hong Kong PRC

Junwei Wang, The University of Hong Kong, Hong Kong PRC

Kin Keung Lai, Shaanxi Normal University, China

To gain the corresponding global pricing power in gold, many actions have been taken by China in recent years, including the launches of the International Board in Shanghai Gold Exchange, Shanghai-Hong Kong Gold Connect and Shanghai Gold Fix. Our work studies the dependence structure between China's and international gold price and examine whether these moves in China change their dependence structure

1309-SCMb2 Financial performance of Indian Logistics Service Providers

Sushmita Narayana Aghalaya, National Institute of Industrial Engineering, India

Siddhartha Shankar Paul, National Institute of Industrial Engineering, India

There has been significant improvement in functioning and operations of logistics companies in India which is reflected in India's logistic performance index (LPI) rank that has moved up to the 35th position from 54th position. In this study, a preliminary comparison of Return on Assets (ROA) of five Logistics Service Providers (LSPs) is carried out based on their working capital. With the exception of one, all the companies show a higher return on assets as compared to long periods of debtor days and/or shortened creditor days, during periods of lower net working capital (days).

1309-SCMb3 Working Capital in the Indian Manufacturing Supply Chain – Insights for Future Research

Sushmita Narayana Aghalaya, National Institute of Industrial Engineering, India

Soma Sundar S., National Institute of Industrial Engineering, India

While there is substantial focus on management of working capital in the industry in the finance and accounting literature, there is limited research in the domain of supply chain management, and in particular, studies that focus on linking two or three nodes of the supply chain. This study aims to provide some evidence from the Indian manufacturing industry by studying the behaviour of working capital along the supply chains of the automotive and a few other industries, and an overview of available financing solutions and their reach across the supply chain.

Wednesday, 9.00 AM – 10.30 AM

Wednesday, 9:00 AM – 10:30 AM

Track: Sustainable Operations

Session: Issues in Sustainability – Rm 2305

Chair: Rosanna Cole, Surrey Business School, United Kingdom

1309-SUS1 A Multi-Objective Location and Relocation Planning Approach for Humanitarian Relief
Ashish Trivedi, O P Jindal Global University, India

The research attempts to determine the optimal number and locations of relief distribution points as well as shelter sites to be set up for an expedited humanitarian response, and risks associated with potential locations. This work offers a resilience building approach to prepare communities for any future contingency by proposing a multi-level decision support.

1309-SUS2 Complexity and Algorithms for Scheduling on a Single Machine Under Time of Use Electricity Tariffs
Michal Penn, Technion, Israel
Tal Raviv, Tel-Aviv University, Israel

We follow a growing interest in energy efficient scheduling and consider scheduling on a single machine under operational costs that vary over time. We study two main variants of the problem, cost minimization and profit maximization.

1309-SUS3 Non-ownership Mobility Services for Low-Income Consumers in India: An Empirical Investigation
Roger Moser, University of St.Gallen, Switzerland
Tobias Schäfers, TU Dortmund, Germany
Gopalakrishnan Naranayamurthy, Indian Institute of Management Kozhikode, India

We conduct an experimental study with low-income consumers living in rural/semi-urban areas of India examining the choice of low-income consumers between intention to purchase a mobility product and intention to use a mobility product offered through access-based solution, the moderating role of specific income levels, and the mediating role of risk perception dimensions (financial risk, performance risk, and social risk) as well as livelihood improvement perception.

1309-SUS4 Sustainability Solutions to Manage Supply Chain Turbulence
Rosanna Cole, Surrey Business School, United Kingdom
Brent Snider, University of Calgary, Canada

The sustainability lens can contribute some answers to the question 'how should we be helping future managers learn how to deal with turbulent times?' This paper posits that the development in sustainable supply chains might actually help to reduce some of the turbulence.

Wednesday, 1.30 PM – 2.45 PM

Wednesday, 1:30 PM – 2:45 PM *Track: Behavioural Supply Chain and Operations Management*

Session: Social Psychological Implications – Rm 2412

Chair: Stephen Shum, City University of Hong Kong, Hong Kong PRC

1313-BSC1 Dealing with Disruptions in Supply Chains: Drilling for the Micro-foundations of Supply Chain Resilience

Ehsan Nikookar, University of South Australia, Australia
Yoshio Yanadori, University of South Australia, Australia
Susan Freeman, University of South Australia, Australia
Andreas Wieland, Copenhagen Business School, Denmark

Given the serious impact of supply chain disruptions (e.g., caused by natural disasters) on a firm's bottom-line performance, both industry and academia are interested in supply chain resilience, a capability of a supply chain that enables it to cope with change. This line of research has identified four key attributes of a supply chain that are associated with greater resilience: supply chain visibility, flexibility, responsiveness, and collaboration.

1313-BSC2 Research on Integrated and Dynamic Collaborative Production Management of Complex Products and Systems Manufacturing Enterprises

Xiaobing Liu, Dalian University of Technology, China
Jiawei Dong, Dalian University of Technology, China

Chinese Complex Products and Systems (CoPS) manufacturing enterprises are very complicated. To solve this problem, taking Harbin Electrical Machinery Company as a case, this paper builds the function model and process model of integrated and dynamic collaborative production management (IDCPM) of CoPS manufacturing enterprises through the case analysis of business process and production management problems.

1313-BSC3 The Influence of Sustainability-Related Information on Consumer Purchasing Preferences

Jing Shao, Northwestern Polytechnical University, China
Enes Ünal, KTH Royal Institute of Technology, Sweden

Facing to consumers' increasing need for sustainability performance information for products, 18 attributes were developed in previous work. This study aims to explore the possible influence of sustainability-related attributes on the intentions of consumers for conducting green purchasing, based on an online consumer survey with 686 samples.

1313-BSC4 To Ration or not to Ration? Selling to Strategic Customers under Shortage Effect

Stephen Shum, City University of Hong Kong, Hong Kong PRC
Hanqing Liu, City University of Hong Kong, Hong Kong PRC
Peng Hu, University of Science and Technology, Canada

We study the dynamic pricing and availability decisions of a firm that repeatedly introduces new generations of a product over time. Customers are strategic and are affected by two types of scarcity effects----direct scarcity effect and relative scarcity effect.

Wednesday, 1.30 PM – 2.45 PM

Wednesday, 1:30 PM – 2:45 PM

Track: Healthcare Operations Management

Session: Supply Chain Networks in Healthcare – Rm 2405

Chair: J. Bradley Morrison, Brandeis University, USA

1313-HCO1 Improving Menstrual Hygiene through Supply Chains: A Model for Rural India

Tanuj Arora, Birla Institute of Technology & Science, India

Sahana Roy, National Institute of Technology Karnataka, India

Sravan Bandi, Rutgers University, USA

Krishna Sundar Diatha, Indian Institute of Management Bangalore, India

Kiran Kumaraswamy, Indian Institute of Management Bangalore, India

Concerted efforts have been made to ensure better menstrual health and hygiene for women in India. Lack of a scalable and efficient decentralized distribution framework remains as a major gap in improving accessibility.

1313-HCO2 Resiliency in Pharmaceutical Supply Chains: Collaborative Sourcing under Disruptions and Competition

S. Asian, RMIT University, Australia

B. Abbasi, RMIT University, Australia

Ali Nazarpour, Maynooth University, Ireland

Although outsourcing to Contract Manufacturing Organisations (CMOs) in cheaper locations is a cost-efficient strategy (specially to reduce the manufacturing and material costs) in Pharmaceutical industry, the inherent uncertainty of decentralization and the potential for supply chain disturbances are critical issues that needs to be considered at early design stages.

1313-HCO3 Timing and Quantity Decisions in Influenza Vaccine Supply Chain

Youhua Frank Chen, City University of Hong Kong, Hong Kong PRC

Lijun Ma, Shenzhen University, China

Weili Xue, Southeast University, China

Influenza rapidly spreads around the world in seasonal epidemics and imposes a considerable economic burden in the forms of hospital and other health care costs and lost productivity. Vaccination is a principal tool for controlling influenza as it is cost effective.

1313-HCO4 From Amazing Failure to Amazing Success: Resilience Response to Crisis in the Emergency Department

J. Bradley Morrison, Brandeis University, USA

This paper reports results from an ethnographic study of a busy inner-city emergency department (ED) aimed at understanding the sources and dynamics of adaptive capacities in EDs -the capacities that enable the ED system to accomplish a resilient response to challenge or crisis.

Wednesday, 1.30 PM – 2.45 PM

Wednesday, 1.30 PM – 2.45 PM

Track: Supply Chain Management

Session: Supply Systems impacting Organisational Performance – Rm 2331

Chair: Amydee M. Fawcett, Weber State University, USA

1313-SCMa1 Constructing Composite Indicators of Company Performance: A Proposal for Truck Manufacturers

Qinqin Zeng, Delft University of Technology, the Netherlands
Sicco Santema, Delft University of Technology, the Netherlands
Gabriel Lodewijks, University of New South Wales, Australia

Will the truck industry contribute as an indication of the economic trend over time? To answer this main research question, this paper focuses on one sub question, that is, how to quantify the truck manufacturers' performance. The proposed composite indicator can quantify the truck manufacturers' performance, faster and more comprehensive.

1313-SCMa2 Product Line and Price Competition with the Fixed Cost Factor

Jungju Park, Yonsei University, Republic of Korea
Jeonghoon Mo, Yonsei University, Republic of Korea

In this paper, we study a game theoretic model for the product line and price competition between two asymmetric firms: The firms may have different potential product sets. We adopt the standard multinomial logit model to represent the stochastic consumer demand, and the linear price disutility.

1313-SCMa3 World Bank's Logistics Performance Index and its Policy-making Impact

Lauri Ojala, University of Turku, Finland
Jean-François Arvis, The World Bank, Washington DC, USA
Ben Shepherd, Developing Trade Consultants, New York, USA
Daniel Saslavsky, The World Bank, Washington DC, USA
Christina Wielderer, The World Bank, Washington DC, USA
Fannie Delavelle, The World Bank, Washington DC, USA
Anasuya Raj, The World Bank, Washington DC, USA
Tapio Naula, University of Turku, Finland
Tuomas Kiiski, University of Turku, Finland

Since 2007, The World Bank has published its Logistics Performance Index (LPI) every two years in the public domain. The presentation is divided into three parts: 1) a brief introduction to the structure and key data of the previous LPI reports; 2) the linkage of the LPI to other relevant indicators on countries transport or business environment; and 3) the impact of the LPI in putting logistics development issues on the policy agenda across the world.

1313-SCMa4 Supply Chains are about People: Exploring Complex Socio Technical Systems, Collaboration, and Firm Performance

Amydee M. Fawcett, Weber State University, USA
Andrea Abegg, Cranfield University, United Kingdom
Henry Jin, Miami of Ohio University, USA
Stanley E. Fawcett, Weber State University, USA

Given the competitive intensity of today's marketplace and the rapid emergence of game-changing technologies, investigating how firms integrate and leverage key resources—i.e., technology and human initiatives—across functional boundaries to create inimitable value is relevant and timely. One result of this technology-centric orientation is that managers, as well as academics, often fail to consider the human factor as we design, manage and study our value-added systems.

Wednesday, 1.30 PM – 2.45 PM

Wednesday, 1.30 PM – 2.45 PM

Track: Supply Chain Management

Session: Sourcing within the Supply Chain – Rm 2332

Chair: Albert Ha, Hong Kong University of Science and Technology, Hong Kong PRC

1313-SCMb1 Empirical Study on the Efficiency of Crowd-Sourcing in O2O On-Demand Delivery Platforms

Yan Wen, Central University of Finance and Economics, China

Hongyan Dai, Central University of Finance and Economics, China

Online to Offline (O2O) on-demand deliveries characterized by highly time-sensitive, fluctuated and large-volume fulfilments. It is unclear to the industry and academia whether this new employment mode – crowd-sourcing is more efficient than the traditional mode (in-house). This paper aims at figuring out the efficiency difference between the two types of workforces through comparing their average delivery time empirically.

1313-SCMb2 Incentive Design with Customer Satisfaction for Business Process Outsourcing: Multi-task vs. Multi-agent

Zhenyang Shi, Shanghai Jiao Tong University, China

Ruijing Wu, Shanghai Jiao Tong University, China

Shaoxuan Liu, Ningbo Supply Chain Innovation Institute China,

Motivated by the prevalent business process outsourcing practice and increasing accessibility of customer satisfaction (CS) related data under e-business environment, this paper studies the CS-based incentive design decision of a firm outsourcing its marketing and operation-related business lines to service providers.

1313-SCMb3 Supply Chain Visibility Achieved by Connected Intelligence

Markus Gerschberger, University of Applied Sciences Upper Austria, Austria

Franz Staberhofer, University of Applied Sciences Upper Austria, Austria

Purpose of this ongoing research is to logically combine existing and easily available information and signals in order to interpret them accordingly whether they can help to manage the supply chain more stable and efficient. By applying deep web analytics and using secondary data sources; information is collected based on the geographic information of nodes (= suppliers, customers, other partners) and edges (= transport relations) of the supply chain.

1313-SCMb4 Supplier Audit Information Sharing and Responsible Sourcing

Albert Ha, Hong Kong University of Science and Technology, Hong Kong PRC

Weixin Shang, Lingnan University, Hong Kong PRC

Yunjie Wang, Renmin University of China, China

We study the incentive for competing manufacturers to share supplier audit information in a market with consumers who may boycott a manufacturer if supplier responsibility violations occur. We fully characterize the manufacturers' equilibrium audit sharing decisions and the subsequent sourcing strategies, and show how they depend on parameters such as the relative cost premium of the responsible supplier, the expected demand loss of sourcing from a high-risk non-responsible supplier, the probability of the non-responsible supplier to be high-risk, and the audit information accuracy.

Wednesday, 1.30 PM – 2.45 PM

Wednesday, 1:30 PM - 2:45 PM

Track: Sustainable Operations

Session: Sustainable Supply Chain Strategies – Rm 2305

Chair: Jing Shao, Northwestern Polytechnical University, China

1313-SUS1 Sustainable Global Sourcing: A Conceptual Framework

Yan Jiang, University of Rome Tor Vergata, Italy

Fu Jia, University of Bristol, United Kingdom

Andrea Appollon, Shanghai Jiao Tong University, China

The emergent field of Sustainable Global Sourcing (SGS) has been rapidly evolving with a geometric growth in the number of academic publications in this field. We carry out a literature review on SGS and propose a conceptual model adopting a resource orchestration perspective.

1313-SUS2 Tax or Subsidy? An Analysis of Environmental Policies in Supply Chains

Junsong Bian, Macquarie University, Australia.

Xuan Zhao, Wilfrid Laurier University, Canada.

This paper investigates the impacts of two environmental policies: pollution abatement subsidy and pollution emission tax, to a government-manufacturer-retailers supply chain, where the manufacturer invests in a pollution abatement technology.

1313-SUS3 The Joint Impact of Environmental Awareness and System Infrastructure on E-Waste Collection

Jianmai Shi, National University of Defence Technology, China

Wenyi Chen, ESC Rennes School of Business, France

Vedat Verter, McGill University, Canada

The prevailing literature on the design of reverse logistics networks for e-waste collection recognizes the accessibility of the collection sites as a key driver of the consumers' return behaviour. This paper studies the impact of simultaneously determining the optimal density of a network of collection centers as well as the most appropriate level of investment in the public's environmental awareness.

1313-SUS4 Analysis on the Implementation of Cradle to Cradle (C2C) Practices in the Phase of Transition to Circular Economy

Enes Ünal, Politecnico di Milano, Milan, Italy

Jing Shao, Northwestern Polytechnical University, China

Transition to Circular Economy (CE) has just begun. As one of the schools of thought of CE, C2C has developed a certification program (scorecard) and has been applied by numerous firms in last 12 years. The result of this study will help companies who are in the process of C2C certification recognize the crucial practice among five practices, and move their focus to the most important one.

Wednesday, 1.30 PM – 2.45 PM

WORKSHOP

MEET THE EDITORS – Rm 2415

Wednesday, 1.30 PM – 2.45 PM

1313-WKSP

Session Title: MEET THE EDITORS

Presenters:

Tava Olsen, University of Auckland Business School, New Zealand

Associate Editor for *Management Science*, *Manufacturing & Service Operations Management (M&SOM)*, and *Operations Research*

Senior Editor, *Production and Operations Management (POM)*

Xenophon Koufteros, Texas A & M University, USA

Member, Editorial Review Board of *Production and Operations Management (POM)*

Damien Power, The University of Melbourne, Australia

Asia Pacific Editor, *Journal of Supply Chain Management (JSCM)*

Kristian Rotaru, Monash University, Australia

Member, Editorial Review Board of *Journal of Operations Management (JOM)*

The aim of this session is to discuss the current performance and reach of some of the sought-after journals as well as their editorial policies, and to provide guidance for prospective authors.

Wednesday, 3.15 PM – 4.45 PM

Wednesday, 3:15 PM – 4:45 PM

Track: Artificial Intelligence & Data Analytics in Operations

Session: Data Analytics in Operations – Rm 2332

Chair: Daniel Arias Aranda, Universidad de Granada, Spain

1315-DAT1 Mechanism Analysis of Surge Pricing and Auctions for a Ride-Hailing Platform

Li Wang, University of Science and Technology of China

The emerging peer-to-peer based product-service structure, which redistributes and optimizes resources by the collaborative consumption, has brought about new opportunity and challenge for management. We examine the operation mechanism from the perspectives of efficiency and revenue, and compare the welfare of the two channels by numerical simulations.

1315-DAT2 Role of data analytics in supply chain collaborations

Usha Ramanathan, Nottingham Trent University, United Kingdom

Guangming Cao, University of Bedfordshire, United Kingdom

In the past two decades, collaboration has become a common phenomenon for many global businesses. In recent days, big data and data analytics are recognised as added advantage for businesses to handle massive amount of data effectively.

1315-DAT3 Genetic Algorithm (GA) design based on Fuzzy Inference Systems (FISs) for Personnel Assignment Problem (PAP)

Daniel Arias Aranda, Universidad de Granada, Spain

Peyman Rabiei, Islamic Azad University, Iran

This study proposes a new algorithm which is a combination of Fuzzy Inference Systems (FIS) (to evaluate candidates) and Genetic Algorithm (GA) (to optimize the solution). The knowledge of staffing managers is encapsulated in FISs.

Wednesday, 3.15 PM – 4.45 PM

Wednesday, 3:15 – 4:45 PM

Track: Service Operations

Session: Finance in Service Operations – Rm 2305

Chair: Mirjeta Beqiri, Gonzaga University, USA

1315-SER1 Optimal Pricing and Equilibrium Queueing Strategy with Rating Information

Yulan Wang, Hong Kong Polytechnic University, Hong Kong PRC

Pengfei Guo, Hong Kong Polytechnic University, Hong Kong PRC

Fengfeng Huang, Hong Kong Polytechnic University, Hong Kong PRC

How would the online rating information affect the service provider's pricing strategy and the customers' equilibrium queueing strategy? We consider a monopoly service provider serving two types of customers over an infinite time horizon.

1315-SER2 The Impact of Operational Risk Factors on Financial Performance: The Case of Albania

Kleida Tufi Heta, University of Shkodra "Luigj Gurakuqi", Albania

Mirjeta Beqiri, Gonzaga University, USA

Blerta Dragusha, University of Shkodra "Luigj Gurakuqi", Albania

Businesses today face numerous risks; operational risk is one of the key risks that companies need to identify and properly address in order to manage it. Operational risk emerges from both the internal and external environment of the firm.

1315-SER3 The Impact of Waiting Time on Customer Satisfaction: Banking Industry

Mirjeta Beqiri, Gonzaga University, USA

Ardita Borici, University of Shkodra "Luigj Gurakuqi", Albania

Albana Begani Borici, University of Shkodra "Luigj Gurakuqi", Albania

Arjola Dergjini, University of Shkodra "Luigj Gurakuqi", Albania

For customers to be satisfied, banks need to meet and exceed their [customers'] expectations. The purpose of this paper is to explore the impact of the psychological reactions to waiting as well as the gap between the perceived and the expected waiting time, on customer satisfaction, in the banking industry.

Regular Sessions

Presentation Schedule

Thursday, 14 December 2017

Sessions for Thursday, 14 December 2017

Thursday, 9.00 AM – 10.30 AM

Thursday, 9:00 AM – 10.30 AM

Track: Supply Chain Management

Session: Supply Chain Methodologies – Rm 2331

Chair: Pavel Castka, University of Canterbury, New Zealand

1409-SCMa1 A Regression-ARMA Model for Sale Forecasting in Supply Chain

Mahdi Abolghasemi, University of Newcastle, Australia
Ali Eshragh, University of Newcastle, Australia
Richard Gerlach, The University of Sydney, Australia

In this talk, we present a new regression-ARMA model to forecast sale in supply chain. We consider the sale time series in a supply chain highly impacted by promotions. In this model, the regression-component, which is mainly based on the market price, captures the impact of promotion on sale and the ARMA-component models the sale time series when there is no promotion.

1409-SCMa2 Return Policies Under the Leadership of Japanese Department Store from a Newsvendor's Perspective

Shota Ohmura, Momoyama Gakuin University, Japan

In this paper, we consider return policy between department stores (retailer) and apparel makers (manufacturer) in Japan. It is said that the department store with strong bargaining power unilaterally forced the apparel maker to take the inventory risk, introducing the return policy. We show that the return policy under leadership of the department store can be acceptable in the age of Japanese high economic growth after WW2. Supply chain optimization is achieved in the case that retailer is leader.

1409-SCMa3 Storage optimization for agriculture supply chain considering food loss

P. Paam, University of Newcastle, Australia
R. Berretta, University of Newcastle, Australia
M. Heydar, University of Newcastle, Australia
R. García-Flores, CSIRO Data61, Australia
P. Juliano, CSIRO Agriculture and Food, Australia

Efficient management of fresh agricultural products over the supply chain, particularly at storage stage, is paramount due to their perishable nature. In this paper, we first present a multi-period linear programming model to manage the storage stage of agricultural supply chains, considering food loss.

1409-SCMa4 Configurational theory and its promise in the field of Operations and Supply Chain Management

Pavel Castka, University of Canterbury, New Zealand

In this paper, we provide examples of the use of the configurational approach (and available software) and discuss potential of the configurational approach to address the important questions from the field. We will demonstrate that the notions of equifinality, asymmetry and complexity are aligned with the practice and scholars should move forward from symmetrical analyses to embrace the complex nature of operations and supply chain management.

1409-SCMa5 Inhibitors of Supply Chain Integration in Multi-tier Supply Chains: A Case Study of Malawi

Kizito E. Kanyoma, University of Newcastle
Frank W. Agbola, University of Newcastle
Richard O. Oloruntopa, University of Newcastle

This paper investigates the enablers and inhibitors of supply chain integration (SCI) across multiple tiers in the supply chains of manufacturing-based small and medium-sized enterprises (SMEs). Using transaction cost economics and relational view theories in the background, we conduct multiple embedded case studies comprising three supply chain triads.

Thursday, 9.00 AM – 10.30 AM

Thursday, 9:00 AM – 10.30 AM

Track: Supply Chain Management

Session: Distribution in Supply Chains – Rm 2305

Chair: Tao Lu, Erasmus University, The Netherlands

1409-SCMb1 Agent-based Model for Dynamic Supply Network Configuration

Subodha Dharmapriya, University of Wollongong, Australia
Senevi Kiridena, University of Wollongong, Australia
Nagesh Shukla, University of Technology Sydney, Australia

Effective supply network configuration (SNC) decisions can make a significant contribution towards enhancing supply chain performance against the key metrics of efficiency, speed and responsiveness. This study proposes a methodology based on Multi Agent Systems (MAS) to help decision makers deal with such challenges, while providing useful analytical insights into supply chain dynamics.

1409-SCMb2 Dynamic supplier selection model based on Taguchi method

Zhang Ling-rong, Dalian University of Technology, China
Wang Meng, Dalian University of Technology, China
CUI Chun-yue, Dalian University of Technology, China

To address the supplier selection problem in dynamic environment, this paper uses Taguchi method and multi-objective programming method to design the optimization process of dynamic supplier selection with multi-period, multi-product and multi-source supply

1409-SCMb3 Integrated Reconfiguration of Both Supply and Demand for Evacuation Planning

Yan Wang, The University of Hong Kong, Hong Kong PRC
Junwei Wang, The University of Hong Kong, Hong Kong PRC

Evacuation planning is essential for ensuring the safety of life during disasters. One big challenge during the evacuation is traffic jams caused by the imbalance between demand and supply of the transportation system. To our knowledge, the problem about managing the two sides simultaneously is not well studied. In this paper, we propose the first integrated reconfiguration model for evacuation planning that reconfigures both the demand and supply of a transportation system.

1409-SCMb4 Selling Co-products through a Distributor: The Impact on Product Line Design

Tao Lu, Erasmus University, The Netherlands
Ying-Ju Chen, The Hong Kong University of Science and Technology, Hong Kong PRC
Brian Tomlin, Dartmouth College, USA
Yimin Wang, Arizona State University, USA

A vertical co-product technology simultaneously produces multiple outputs that differ along a rank-able quality metric. Co-product manufacturers often sell products through a distributor. We examine a setting in which a manufacturer sells vertically differentiated co-products through a self-interested distributor to quality-sensitive end customers.

1409-SCMb5 Truck Cost Operation Analysis considering Tolls and Freight Trip Length Distribution

Carlos A. Gonzalez Calderon, Universidad Nacional de Colombia at Medellin, Colombia
Maria Catalina Valencia Cardenas, Universidad de Antioquia, Medellin, Colombia

This paper analyzes truck operations considering tolls and freight trip length distribution (FTLD). In doing so, the authors estimated travel cost models for different truck vehicles types considering distance travelled (freight trip length distribution) and the presence of tolls in Colombian roads.

Thursday, 11.00 AM – 12.30 PM

Thursday, 11:00 AM – 12:30 PM *Track: Behavioural Supply Chain and Operations Management*

Session: Methods in Behavioural Supply Chain Management – Rm 2332

Chair: Tillmann Böhme, University of Wollongong, Australia

1411-BSC1 Decision-making in Emergency Situations, a Supply Chain Risk Management Approach

Lauri Ojala, University of Turku, Finland
Oskari Rintala, University of Turku, Finland
Jarmo Malmsten, University of Turku, Finland

Emergency incidents pose disruptive risks to today's supply chains' continuity and bring forth possible vulnerability issues. This presentation describes the parallel cognitive and social psychological phenomena inseparable from supply chain resilience and continuity with a focus on emergencies, where constancy is rare and impacts of decisions immediate.

1411-BSC2 Competitive Dynamic Pricing under Capacity Constraints: An Experimental Study

Bahriye Cesaret, Ozyegin University, Turkey
Elena Katok, University of Texas at Dallas, USA

This study aims to understand how well game theoretic models of dynamic pricing inform us about the actual pricing behaviour in a competitive market, given that human decision makers commonly make pricing decisions. We consider a stylized dynamic pricing model where two capacity-constrained firms meet customers with unit demands and a common reservation value.

1411-BSC3 Reference Effects in the Newsvendor Problem

Sam Kirshner, University of NSW, Australia
Anton Ovechinnikov, Smith School of Business, Canada

The newsvendor problem is centered on balancing the gain from satisfying demand with the loss from unsold inventory. An analysis of these models reveals two important findings. First, restricting Long and Nasiry's model to the case of loss-neutrality implies that the two models are in fact equivalent: up to reparametrization they produce identical order quantities. Second, the equivalence provides insight into the interpretation of the weight on the maximum payoff.

1411-BSC4 Functional Silos: The Why and the How

Tillmann Böhme, University of Wollongong, Australia
Michael Matthias, University of Wollongong, Australia
Adrian Tootell, University of Wollongong, Australia
Eric Deakins, Waikato Management School, New Zealand

Today's organisations are faced with increasing levels of global competition, demanding customers and employees, shrinking product lifecycles and decreasing acceptable response times. This exploratory, interdisciplinary, site-centered research investigates the composition of functional silos using systems thinking. The phenomenon was investigated using case study research.

Thursday, 11.00 AM – 12.30 PM

Thursday, 11:00 AM – 12:30 PM

Track: Artificial Intelligence & Data Analytics in Operations

Session: Consumer Interaction – Rm 2331

Chair: Jungju Park, Yonsei University, Republic of Korea

1411-DAT1 Data-driven Consumer Debt Collection: A Machine Learning Approach

Ruben van de Geer, Vrije Universiteit, The Netherlands

Qingchen Wang, Amsterdam Business School, The Netherlands

In this paper a framework is presented that allows for data-driven optimization of the scheduling of outbound calls made by debt collectors. More precisely, this paper considers the problem of deciding throughout time which debtors to call next, provided that the debt collector is constrained in the number of phone calls that its agents can make.

1411-DAT2 How do logistics companies interact with customers on Facebook? A study on Sentiment Analysis

Arda Gezdur, The University of Sydney, Australia

Jyotirmoyee Bhattacharjya, The University of Sydney, Australia

The past decade has seen the rapid development of efficient use of social media. Following this trend, companies increasingly engage themselves in analyzing the interactions on social media and include the outcomes as part of their business strategies.

1411-DAT3 Key Attribute Extraction with the Opportunity Score and the Online Consumer Review

Jungju Park, Yonsei University, Republic of Korea

Inki Yoo, Yonsei University, Republic of Korea

Jeonghoon Mo, Yonsei University, Republic of Korea

In this paper, we provide a methodology to extract the key product attributes. Besides of the various extraction methods, we apply the opportunity score of Ulwick which has been used to identify the promising business opportunities.

1411-DAT4 Preparing for the future: data collection for autonomous customer service agents in education

Sebaylias Mirovaar, Macquarie University, Australia

Julie Cox, Macquarie University, Australia

This paper outlines the data requirements for deploying conversational agents, and discusses the requirements and limitations of effective natural language processing. It also discusses comparisons of search engines and informational chatbots in providing first-contact to users.

Thursday, 11.00 AM – 12.30 PM

Thursday, 11:00 AM – 12:30 PM

Track: General

Session: Quality and Process Issues – Rm 2414

Chair: Nigel Brashaw, IE University, Spain

1411-GEN1 Is 5S Beneficial in the Workplace: What do Indian Managers Think?
Ajith Kumar J, XLRI Xavier School of Management, India

Though awareness about 5S is prevalent amongst corporate leaders and managers in India, only a small proportion of them have really pursued it as a priority in their organizations. This study explored the basic question: do Indian managers perceive any benefits in implementing a 5S practice in their organizations and if yes, what?

1411-GEN2 Improved Exact ϵ -constraint Method for Bi-objective Permutation Flowshop Scheduling Problem Considering Energy Consumption
Jing Peng, University of Science and Technology of China, China

This paper studies the bi-objective permutation flowshop scheduling problem considering energy consumption. The objective is to minimize simultaneously the makespan and the total wasted energy consumption resulted from machine idle times.

1411-GEN3 Can Lean Six Sigma Techniques Result in Improved Quality and Efficiency for Professional Firms?
Nigel Brashaw, IE University, Spain

This research seeks to investigate whether there are any benefits to professional services firms of adopting LSS tools to simultaneously improve quality and reduce costs. Additionally we seek to examine the benefits of subjecting processes to LSS prior to task automation.

1411-GEN4 Controlling mass-casualty flow for emergency healthcare: A simulation analysis
Mohsin Nasir Jat, Raza Ali Rafique, & Sanna Ullah, Lahore University of Management Sciences

An engagement of multiple medical facilities in response to a mass casualty incident implicates the issue of an efficient distribution of casualties within the facilities. We seek to explore this issue through a discrete event simulation analysis of a terrorist bomb attack instance in a major city of Pakistan. The insights can be relevant for any type of urban disasters resulting in instantaneous mass casualties, e.g., transportation and industrial accidents.

1411-GEN5 A Nonparametric Approach for Product Assortment with Uncertain Outcome and Customer Regret
Soheil Yousefsibdari

A rule of thumb in marketing and retail management suggests that firms benefit by offering a wide variety of products in order to meet customers' needs and desires. It was originally believed that having more options creates higher customer satisfaction and puts the firm in a competitive position leading to higher demand and profit.

Thursday, 11.00 AM – 12.30 PM

Thursday, 11:00 AM - 12:30 PM

Track: Product Innovation and Technology Management

Session: Technology Approaches and Issues – Rm 2305

Chair(s): Mile Katic & Renu Agarwal, University of Technology Sydney, Australia

1411-ITM1 On the path to Industry 4.0 – Antecedents of the adoption of digital technologies in manufacturing

Nicolas Brune, RWTH Aachen University, Germany
David Bendig, RWTH Aachen University, Germany
Malte Brettel, RWTH Aachen University, Germany

In recent years digitization of manufacturing has received great attention. Under the terms “industry 4.0” or “smart manufacturing” new initiatives were launched, and consultancies emphasize that investments in industry 4.0 are needed to address dynamic markets and advise their clients to engage in comprehensive strategic change initiatives.

1411-ITM2 Information and Communication Technology and Productivity Growth: An Empirical Study of Microfinance Institutions in India

Delaram Najmaei Lonbani, Macquarie University, Australia
Joanna Vogeley, Macquarie University, Australia

The productive employment of scarce resources has been a concern of policy makers in microfinance industry (MFI). This study tries to apply Malmquist Productivity Index to evaluate how total factor productivity has changes among Indian MFI’s.

1411-ITM3 Japan’s Technology Management Legacy Impacting its IoT Leadership

Amer Rathore, University of Technology Sydney, Australia
Renu Agarwal, University of Technology Sydney, Australia
Christopher Bajada, University of Technology Sydney, Australia
Sanjoy Paul, University of Technology Sydney, Australia

The objective of this study is to identify the factors in traditional Japanese corporate management style that are impacting Japan’s leadership in IoT on global platform.

1411-ITM4 Technology and Transformational Reform in UK Policing – A Delphi Study Exploring Barriers and Enablers

Simon Charles Williams, University of Leeds, United Kingdom
Nicky Shaw, University of Leeds, United Kingdom
David Kelvin Allen, University of Leeds, United Kingdom
Alistair Norman, University of Leeds, United Kingdom
Emma Gritt, University of Leeds, United Kingdom
Emma Forsgren, University of Leeds, United Kingdom

This paper presents a Delphi research study (Ziglio 1996) exploring UK policing in the context of the barriers and enablers of technology and transformational reform. This study aims to forecast 5-10 years into the future of what UK policing might look like.

1411-ITM5 The Interplay Between Flexibility and Innovation within High-Variety, Low-Volume Manufacturing

Mile Katic, University of Technology Sydney, Australia
Renu Agarwal, University of Technology Sydney, Australia
Hiyam Al-Kilidar, University of Technology Sydney, Australia

SME (Small to Medium Sized Enterprise) that produce a high variety of customised products at low volumes (HVLV), the necessity to innovate and simultaneously maintain flexibility poses a significant organisational challenge.

Thursday, 11.00 AM – 12.30 PM

Thursday, 11:00 AM – 12.30 PM

Track: Service Operations

Session: Transport and Maintenance in Service Operations - – Rm 2412

Chair: Rico Merkert, The University of Sydney, Australia

1411-SER1 Construction Supply Chain Integration: Understanding its Applicability in Infrastructure Asset Maintenance and Renewal Programmes

Tim Munro, Massey University, New Zealand
Paul Childerhouse, Massey University, New Zealand
Niluka Domingo, Massey University, New Zealand

Civil infrastructure long-term work programmes are made up of asset construction, renewals and upgrades, planned and response asset maintenance and service delivery. The programmes are relatively securely funded, and are predominantly outsourced by clients to geographically organised supply chains that include master contractors, specialist and general sub-contractors, materials providers and engineering consultants.

1411-SER2 Crucial Outsourcing Part Supplier Portfolio Selection Using an Integrated “FVIKOR-HAGA” Method Considering Economics of Quality

Fuli Zhou, Chongqing University, China
Xu Wang, Chongqing University, China
Mark Goh, National University of Singapore (NUS), Singapore
Yandong He, Eindhoven University of Technology, Netherland
Lin Zhou, Chongqing University, China

In order to improve the performance of assembly vehicle, this study develops a preventive two stage decision making framework to deal with the procurement decision for crucial outsourcing part supplier portfolio (COPSP) selection by addressing economics of quality within the warranty period.

1411-SER3 Rebalancing Free Float Bike-Sharing System with Customer Incentives

Ruijing Wu, Shanghai Jiao Tong University, China
Zhenyang Shi, Shanghai Jiao Tong University, China
Shaoxuan Liu, Ningbo Supply Chain Innovation Institute, China

Free float bike sharing systems (FBSS) such as Mobike, which allow users to pick up and park bikes anywhere, have gained increasing popularity in China recently. We describe the system dynamics in detail on a daily basis and formulate the operator's profit maximization problem.

1411-SER4 A Modified NSGA-II for the Multi-Trip Vehicle Routing Problem with Workload Balancing

Lijun Sun, Dalian University of Technology, China
Haiyang Shi, Dalian University of Technology, China
Xiangpei Hu, Dalian University of Technology, China

This paper makes a first attempt to investigate the workload balancing among vehicles in the context of Multi-Trip Routing Problem. We name this VRP variant the Multi-Trip Vehicle Routing Problem with Workload Balancing, which has important application in practice, especially in urban logistics.

1411-SER5 The role of fleet and engine commonality from a servitization and operations management perspective

Rico Merkert, The University of Sydney, Australia

Previous research has shown that strategic fleet management can significantly improve technical, allocative and cost efficiency of airlines. The aim of this paper is to take the fleet commonality argument to the next and potentially much more important level by evaluating the impact of engine heterogeneity on airline cost efficiency.

Thursday, 11.00 AM – 12.30 PM

Thursday, 11:00 AM - 12:30 PM

Track: Supply Chain Management

Session: Inventory Optimisation – Rm 2415

Chair: Erick Li, The University of Sydney

1411-SCM1 A dynamic lot-sizing model for Vendor Managed Inventory (VMI)

Farshid Evazabadian, The University of Newcastle, Australia
Regina Berretta, The University of Newcastle, Australia
Mojtaba Heydar, The University of Newcastle, Australia

This research explores the impact of VMI on a supply chain, consisting of one vendor and multiple retailers, by developing two mixed integer linear programming models for dynamic lot-sizing decisions. Numerical results show that, under VMI paradigm, the vendor cost reduces significantly for which (some) retailers has to pay. Therefore, in order to have a win-win partnership for the retailers and the vendor, a cost allocation method based on dual variables concept is applied.

1411-SCM2 Improving Warehouse Operations and Inventory Accuracy – A Case Study on a Tentage Rental Business

Lo Chun Kei Bernard, Singapore University of Social Sciences, Singapore
Huay Ling Tay, Singapore University of Social Sciences, Singapore

Tentage rental service is a unique business as it provides critical logistics support for many occasions. This study examines these challenges by raising two research questions in the context of the case company: - (1) “What are the technological systems that can help in managing the warehouse operations and inventory in a tentage company?” and (2) “How can the warehouse layout be configured to improve efficiency using item activity profiling?”

1411-SCM3 Inventory Management for Short Lifecycle Products

Afroz Moatari-Kazerouni, University of Lethbridge, Alberta, Canada

The research determined the suitable set of metrics during product lifecycle stages in order to measure supply chain performance, to estimate total product volumes, and to minimize end-of-life inventory. A literature review of supply chain metrics for such industry is performed.

1411-SCM4 Reference Effects in the Newsvendor Problem

Sam Kirshner, University of NSW, Australia
Anton Ovichinnikov, Smith School of Business, Canada

The newsvendor problem is centered on balancing the gain from satisfying demand with the loss from unsold inventory. It is therefore not surprising that the concepts of gains and losses from prospect theory have been applied to explain the observed behaviours, such as the pull-to-center effect.

1411-SCM5 An Inventory Model with Stock-out Substitution and Maximin Decision Rule

Erick Li, The University of Sydney
Grace Fu, The University of Macau

Stock-out substitution is a well-documented phenomenon that occurs when customers seek a different product as a substitute for their first-choice item if it runs out of stock. A single-period inventory model is considered with limited information regarding the external demands (i.e., mean, variance, and covariance) and the focus is on identifying the inventory levels that maximize the worst-case expected profit

