2016 49th Hawaii International Conference on System Sciences

HICSS 2016

Table of Contents

Preface ..........................................................................................................................................................................lxiii
Conference Organization ............................................................................................................................................lxiv
HICSS-49 Tracks and Minitracks ................................................................................................................................lxv
Reviewers ...................................................................................................................................................................lxxix

Collaboration Systems and Technologies Track — Track Chairs: Robert O. Briggs and Jay Nunamaker Jr.

Introduction to Collaboration Systems and Technology Track ..............................................................................1
    Jay F. Nunamaker Jr. and Robert O. Briggs

Advances in Teaching and Learning Technologies — Minitrack Chairs: David Spencer, Timothy Ellis, Eric Santanen

Introduction to Advances in Teaching and Learning Technologies Minitrack .................................................................2
    David H. Spencer, Timothy Ellis, and Eric Santanen

Creating a Sense of a Collaborative Learning Community with Google+ .................................................................3
    Claire Ikumi Hitosugi

CSCL in STEM Education: Preliminary Findings from a Meta-Analysis .................................................................11
    Heisawn Jeong, Cindy E. Hmelo-Silver, Kihyun Jo, and Myungho Shin

Determinants of E-Learning Adoption in Universities: Evidence from a Developing Country ...........................................21
    Eric Ansong, Sheena Loria Boateng, Richard Boateng, and John Effah

Geek Toys for Non-techies? Using Robots in Introductory Programming Courses for Computer Science Non-majors .................................................................................................................................31
    Erica Weilemann, Philipp Brune, and Dany Meyer

Enhancing the Professional Vision of Teachers: A Physiological Study of Teaching Analytics Dashboards of Students’ Repertory Grid Exercises in Business Education .........................................................41
    Kostas Pantazos and Ravi Vatrapu
Introducing Avatarification: An Experimental Examination of How Avatars Influence Student Motivation .........................................................................................................................................................51
   Rabindra Ratan, RV Rikard, Celina Wanek, Madison McKinley, Lee Johnson, and Young June Sah

Personalized Article Recommendation Based on Student’s Rating Mechanism in an Online Discussion Forum .............................................................................................................................................................................60
   Chuen-He Liou

Smart Quizzes in the Engineering Education .........................................................................................................................................................................................66
   Sergio Antônio Andrade Freitas, Rita de Cássia Silva, Tiago Franklin R. Lucena, Eduardo do N. Ribeiro, Victor Cotrim de Lima, and Rodrigo M. S. da Silva

Standing on the Shoulders of Citizens: Exploring Gameful Collaboration for Creating Social Experiments ........................................................................................................................................................74
   Casper Harteveld, Amy Stahl, Gillian Smith, Cigdem Talgar, and Steven C. Sutherland

The Appropriation of Collaborative Learning — Qualitative Insights from a Flipped Classroom .............................................................................................................................................................................84
   Andreas Janson, Matthias Söllner, and Jan Marco Leimeister

The Role of Agency Theory and Perceived Goal Divergence in IS Continuance: A Replication and Extension Study .............................................................................................................................................................................94
   Tove Bæ and Boge Gulbrandsen

The Use of an Audience Response System to Monitor Students’ Knowledge Level in Real-Time, Its Impact on Grades, and Students’ Experiences ..........................................................................................................................104
   Margit Kastner

Communication and Information Systems Technology for Crisis and Disaster Management — Minitrack Chairs: Julie Dugdale, Jose J. Gonzalez, Murray Turoff

Introduction to the Communication and Information Systems Technology for Crisis and Disaster Management Minitrack .............................................................................................................................................................................114
   Julie Dugdale, Jose J. Gonzalez, and Murray Turoff

#Help. The Reality of Social Media Use in Crisis Response: Lessons from a Realistic Crisis Exercise .............................................................................................................................................................................116
   Kenny Meesters, Lars van Beek, and Bartel Van de Walle

A Metamodel for Knowledge Management in Crisis Management .............................................................................................................................................................................126
   Frédérick Bénaben, Matthieu Lauras, Sébastien Truptil, and Nicolas Salatgé

An Overview of Public Concerns During the Recovery Period after a Major Earthquake: Nepal Twitter Analysis .............................................................................................................................................................................136
   Jaziar Radianti, Starr Roxanne Hiltz, and Leire Labaka

Experiences in Emergency Response at the Great East Japan Earthquake and Tsunami .............................................................................................................................................................................146
   Yuko Murayama, Jun Sasaki, and Dai Nishioka

Insights from a Simulation Model of Disaster Response: Generalization and Action Points .............................................................................................................................................................................152
   Jose J. Gonzalez, Leire Labaka, Starr Roxanne Hiltz, and Murray Turoff
Leveraging Bystander Reports in Emergency Response Work: Framing Emergency Managers Social Media Use ................................................................. 162
Fredrik Bergstrand and Dick Stenmark

Modelling Air Pollution Crises Using Multi-agent Simulation ................................................... 172
Sabin Ghazi, Julie Dugdale, and Tarek Khadir

New Vistas for Firefighter Information Systems? Towards a Systematic Evaluation of Emerging Technologies from a Task-Technology Fit Perspective ........................................................................ 178
Sebastian Schlauderer, Sven Overhage, and Julian Weidinger

Potential of Collaborative Mapping for Disaster Relief: A Case Study of OpenStreetMap in the Nepal Earthquake 2015 .................................................................................................................. 188
Thiago Henrique Poiani, Roberto dos Santos Rocha, Lívia Castro Degrossi, and João Porto de Albuquerque

Understanding Communications in Medical Emergency Situations ...................................................... 198
Lyuba Mancheva and Julie Dugdale

Volunteered Geographic Information and Its Implications for Disaster Management ................................................. 207
Milad Mirbabaie, Stefan Stieglitz, and Stephan Volkeri

Web-Based Collaborative Document Writing for Emergency Management .............................................. 217
Adrian Shatte, Jason Holdsworth, and Ickjai Lee

Creativity in Teams and Organizations — Minitrack Chairs: Gert-Jan de Vreede, Roni Reiter-Palmon, Ginamarie Ligon

Introduction to the Creativity in Teams and Organizations Minitrack ........................................ 227
Gert-Jan de Vreede, Roni Reiter-Palmon, and Ginamarie Ligon

A Study on the Acceptance of Computer-Supported Morphological Analysis ........................................... 228
Veronika Gamper, Marin Zec, Stefan Langer, and Andreas Butz

How Not to Select Ideas for Innovations: A Critique of the Scoring Method ......................................... 237
Graham Horton, Jana Goers, and Stefan Werner Knoll

Opening the Mind: Designing 3D Virtual Environments to Enhance Team Creativity ................................... 247
Randall K. Minas, Alan R. Dennis, and Anne P. Massey

Semi-Automated Questions as a Cognitive Stimulus in Idea Generation .......................................... 257
Dominik Siemon, Taras Rarog, and Susanne Robra-Bissantz

Cross-Organizational and Cross-Border IS/IT Collaboration — Minitrack Chairs: Ilsang Ko, Daniel Beimborn

Introduction to the Cross-Organizational and Cross-Border Collaboration Minitrack ................................ 267
Ilsang Ko and Daniel Beimborn

Continuance Intention to Use Social Network Game: The Philippines Case ............................................ 268
Arceli Piguing and Ilsang Ko

Inculcating Institutional Infrastructure to Support International Collaboration .................................... 277
Airong Luo, Ted Hanss, Dave Malicke, Greg Doyle, and Nadia Tagoe

IT-Based Value Co-Creation: A Literature Review and Directions for Future Research ............................. 287
Markus Mandrella, Sebastian Zander, and Lutz M. Kolbe
SMGSC: Social-Level Macro-Governing Methodology for Cross-Management-Domain
Service Collaboration Processes .................................................................................................................................297
   Ji Gao, Hexin Lv, Zhiyong Jin, and Ping Xu
Supply Chain Integration and Collaboration for Improving Supply Chain Performance: A
Dynamic Capability Theory Perspective .....................................................................................................................307
   Kang Sungbae and Moon Taesoo
Supporting Joint Idea Generation with Software Prototypes in Offshore-Outsourced
Software Development Projects .................................................................................................................................317
   Maike Winkler, Thomas Huber, and Jens Dibbern
The Tension between Stabilized Cooperation and Intensified Competition: Greening
of Technological Frames in Practice ...........................................................................................................................327
   Fatemeh Saadatmand and Rikard Lindgren


Introduction to the Data Science for Collaboration Minitrack .................................................................................337
   Lakshmi Iyer, Souren Paul, and Lina Zhou
An Architecture to Enhance Collaboration in Scientific Software Product Line .........................................................338
   Anrafel F. Pereira, José Maria N. David, Regina Braga, and Fernanda Campos
Collaborative Information Service: The Security Question ..........................................................................................348
   Asim Kumar Pal and Subrata Bose
Detecting Knowledge Innovation through Automatic Topic Labeling on Scholar Data ..................................................358
   Diogo Nolasco and Jonice Oliveira

Decision, Negotiation, Leadership, Social Communities and Technology —
Minitrack Chairs: Tung Bui, Melvin Shakun

Introduction to Decision, Negotiation, Leadership, Social Communities and Technology
Minitrack .......................................................................................................................................................................368
   Tung Bui and Melvin Shakun
Enabling Computer to Negotiate with Human in E-Commerce: A Strategy Model .........................................................369
   Mukun Cao and Lifang Peng
Information Sharing for Collective Sensemaking ........................................................................................................377
   Yuqing Tang, Christian Lebiere, Katia Sycara, Don Morrison, Michael Lewis, and Paul Smart
Open Strategic Planning in Universities: A Case Study .............................................................................................386
   Ali reza Amrollahi and Amir Hosein Ghapnchi
Selecting Physiological Features for Predicting Bidding Behavior in Electronic Auctions ........................................396
   Marius B. Müller, Marc T. P. Adam, David J. Cornforth, Raymond Chiong, Jan Krämer, and Christof Weinhardt
Seller-Determined Two-Attribute Reverse Auctions: The Case of Linear Utilities .....................................................406
   Gregory E. Kersten
Design and Innovation of Social Networking Services — Minitrack Chairs: Bo Xiao, Chee-Wee Tan, Eric Lim

Introduction to the Design and Innovation of Social Networking Services Minitrack ...................................................414

Bo Xiao, Eric Lim, and Chee-Wee Tan

Combating Online Abuse: What Drives People to Use Online Reporting Functions on Social Networking Sites ..........................................................................................................................415

Randy Y. M. Wong, Christy M. K. Cheung, and Bo Xiao

Enrichment of Smart Home Services by Integrating Social Network Services and Big Data Analytics ..............................................................................................................................................................425

Maximilian Wich and Tommi Kramer

Emerging Issues in Distributed Group Decision-Making: Opportunities and Challenges — Minitrack Chairs: Anil Aggarwal, Doug Vogel, Yuko Murayama

Introduction to the Minitrack on Emerging Issues in Distributed Group Decision-Making: Opportunities and Challenges .....................................................................................................................................435

Anil K. Aggarwal, Doug Vogel, and Yuko Murayama

A Study on the Clothes Recommendation for a Cold Region of Japan ..........................................................................................................................................................................................436

Yuki Nakano, Dai Nishioka, Yoshia Saito, and Yuko Murayama

An Empirical Taxonomy of Smartphone Users in Their Daily Distributed Decision Making .........................................................................................................................................................................................................444

Efosa C. Idemudia, Mahesh S. Raisinghani, Placide Poba-Nzaou, and Sylvestre Uwizeyemungu

Dysfunctional Groups: An Exploratory study .................................................................................................................................................................................................455

Anil Aggarwal

Remotely Piloted Aircraft Systems (RPAS) for Extreme Missions in the Arctic and the Monitoring of the Ukraine Crisis by the Organization for Security and Co-Operation in Europe (OSCE) ..........................................................................................................................................................................................463

Harri Ruoslahti and Juha S. Knuuttila

Team Network Evolution While Undergoing a Lean Transformation: A Missing Success Indicator? ........................................................................................................................................................................................................473

Jorge Colazo

Trust Development in Globally Distributed Collaboration: A Case Study in China ..................................................................................................................................................................................................480

Xusen Cheng, Jianyue Liu, Douglas Druckenmiller, and Shixuan Fu

Global Virtual Teams — Minitrack Chairs: Mike Hine, Derrick L. Cogburn

Introduction to Global Virtual Teams Minitrack .................................................................................................................................490

Michael J. Hine and Derrick L. Cogburn

A Processual View on Social Presence Emergence in Virtual Worlds .................................................................................................................................491

Laura Kohonen-Aho and Pauli Alin
“Mind the Gap”: An Analysis of Communication in Agile Global Outsourced Software Development Projects .......................................................................................................................... 501
Nikolaus Schmidt and Caroline Meures

When a One-Hour Time Difference is Too Much: Temporal Boundaries in Global Virtual Work .................................................................................................................................................. 511
Anu Sivunen, Niina Nurmi, and Johanna Koroma

Human- and Task-Centered Assistance Systems — Minitrack Chairs: Bernd Kuhlenkötter, Robert Weidner, Tobias Redlich

Introduction to the Human- and Task-Centered Assistance Systems Minitrack .......................................................................................................................... 521
Tobias Redlich, Robert Weidner, and Bernd Kuhlenkötter

Andreas Baechler, Liane Baechler, Sven Autenrieth, Peter Kurtz, Thomas Hoerz, Thomas Heidenreich, and Georg Kruell

A Framework for Selecting and Optimizing Color Scheme in Web Design .......................................................................................................................... 532
Kevin Ferris and Sonya Zhang

A Novel Concept for Wearable, Modular and Soft Support Systems Used in Industrial Environments ............................................................................................................................................................... 542
Bernward Otten, Patrick Stelzer, Robert Weidner, Andreas Argubi-Wollesen, and Jens P. Wulfsberg

Conceptualizing Hybrid Human-Machine Systems and Interaction .......................................................................................................................... 551
Sonja Buxbaum-Conradi, Tobias Redlich, and Jan-Hauke Branding

Marco Saggiomo, Mario Loehrer, Daniel Kerpen, Jacqueline Lemm, and Yves-Simon Gloy

Individual Support in Industrial Production — Outline of a Theory of Support-Systems .......................................................................................................................... 569
Robert Weidner, Athanasios Karafillidis, and Jens P. Wulfsberg

Judging the Desirability and Acceptance of Assistance Systems for the Elderly — Lessons Learned with a Fieldwork Approach .......................................................................................................................... 579
Thomas Birken, Helga Pelizäus-Hoffmeister, and Petra Schweiger
**Human-Computer Interaction: Information Design Utilizing Behavioral, Neurophysiological, and Design Science Methods — Minitrack Chairs:**

Christoph Schneider, Joe Valacich, Angelika Dimoka

Introduction to the Minitrack Human-Computer Interaction: Informing Design Utilizing Behavioral, Neurophysiological, and Design Science Methods .......................................................... 589

Christoph Schneider, Joseph S. Valacich, and Angelika Dimoka

Colors and Trust: The Influence of User Interface Design on Trust and Reciprocity ............................................................................................................................ 590

Florian Hawlitschek, Lars-Erik Jansen, Ewa Lux, Timm Teubner, and Christof Weinhardt

Fixation Patterns During Process Model Creation: Initial Steps Toward Neuro-Adaptive Process Modeling Environments .................................................................................... 600

Barbara Weber, Jakob Pinggera, Manuel Neurauter, Stefan Zugal, Markus Martini, Marco Furtner, Pierre Sachse, and Daniel Schnitzer

Hands That Speak: An Integrated Approach to Studying Complex Human Communicative Body Movements .......................................................................................... 610

Nadir Weibel, So-One Hwang, Steven Rick, Erfan Sayyari, Dan Lenzen, and Jim Hollan

How to Design Interfaces for Product Recommendation Agents to Influence the Purchase of Environmentally-Friendly Products ........................................................................ 620

Tian Yu, Izak Benbasat, and Ronald T. Cenfetelli

Reading a Newspaper on Print Versus Screen: A Motivational Perspective ................................................................................................................................. 630

Dorina Rajanen, Mikko Salminen, and Niklas Ravaja

Serious Games: An Evaluation Framework and Case Study ................................................................................................................................. 638

David W. Wilson, Jeff Jenkins, Nathan Twyman, Matthew Jensen, Joe Valacich, Norah Dunbar, Scott Wilson, Claude Miller, Bradley Adame, Yu-Hao Lee, Judee Burgoon, and Jay F. Nunamaker

Social Viewing, Bullet Screen, and User Experience: A First Look ................................................................................................................................. 648

Soussan Djamasi, Adrienne Hall-Phillips, Zaozao Liu, Zaozao Liu, and Jing Bian

Understanding the Impact of Interruptions on Knowledge Work: An Exploratory Neuroimaging Study ........................................................................................................ 658

Pankush Kalgotra, Ramesh Sharda, and Roger McHaney

Visual Representation of Information as an Antecedent of Perceptive Efficiency: The Effect of Experience ......................................................................................................... 668

Lisa Falschlunger, Othmar Lehner, Horst Treiblmaier, and Christoph Eisl

**IT Enabled Collaboration in Developing Countries — Minitrack Chairs:**

Xusen Cheng, Xiangbin Yan, Deepinder Bajwa

Introduction to IT Enabled Collaboration in Developing Countries Minitrack .......................................................................................................................... 677

Xusen Cheng, Xiangbin Yan, and Deepinder Bajwa

A Personality Matching-Aided Approach for Supervisor Recommendation (Research-in-Progress) .............................................................................................................. 678

Mingyu Zhang, Jianshan Sun, Jian Ma, Tailai Wu, and Zhijing Liu
Diversified Recommendation Incorporating Item Content Information Based on MOEA/D .................................................................688
    Jinkun Wang, Yezheng Liu, Jiashan Sun, Yuanchun Jiang, and Chunhua Sun

Investigating Trust Factors in Global Virtual Collaboration: A Case Study of a Manufacturing Company in China .................................................................697
    Xusen Cheng, Jianyue Liu, Jiangqing Huang, Xiangbin Yan, and Yajing Han

OpenLabs — Open Source Microfactories Enhancing the FabLab Idea .................................................................707
    Manuel Moriitz, Tobias Redlich, Sonja Buxbaum-Conradi, Sissy-Ve Basmer-Birkenfeld, Pascal Krenz, Babsile Daniel Osunyomi, Jens Wulfsberg, and Susanne Heubischl

Promoting Health Behaviors with Help of Online Social Ties: An Exploratory Study .................................................................716
    Yumei Li, Xiangbin Yan, and Yong Tan

Research on Optimal Selection Strategy of Search Engine Keywords Based on Multi-armed Bandit .................................................................726
    Juan Qin, Wei Qi, and Baojian Zhou

Mobility-Enhanced Social Collaborations for Value Creation — Minitrack Chairs: Stephen Choi, Kun Chang Lee

Introduction to Mobility-Enhanced Social Collaborations for Value Creation Minitrack .................................................................735
    Kyungsub Stephen Choi and Kun Chang Lee

Investigating the Influence of Offline Friendship on Twitter Networking Behaviors .................................................................736
    Youngsoo Kim, Felicia Natali, Feida Zhu, and Eepeng Lim

The Positive Spillover Effect of Mobile Social Games on App Literacy .................................................................746
    Mihyun Lee, Sang Pil Han, Sungho Park, and Wonseok Oh

Processes and Technologies for Small and Large Team Collaboration — Minitrack Chairs: Doug Derrick, Imed Boughzala, Christopher B.R. Diller

Introduction to Processes and Technologies for Small and Large Team Collaboration Minitrack .................................................................756
    Douglas C. Derrick, Christopher B. R. Diller, and Imed Boughzala

A Goal-Oriented Approach for Designing Collaboration Processes .................................................................757
    Bahar Ghadiri Bashardoost, Kelly Lyons, and Rock Leung

A Survey on Volunteer Management Systems .................................................................767
    Johannes Schönböck, Markus Raab, Josef Altmann, Elisabeth Kapsammer, Angelika Kusel, Birgit Pröll, Werner Retschitzegger, and Wieland Schwinger

An Investigation of Problem Formulation Comprehensiveness on Solution Novelty and Elegance in Team Collaboration .................................................................777
    Leif Lundmark, Douglas C. Derrick, John D. Crowe, Margaret Lunn, and Gina S. Ligon

Advancing Collaboration Engineering: New ThinkLets for Dyadic Problem Solving and an Application for Mobile Advisory Services .................................................................787
    Gerhard Schwabe, Robert O. Briggs, and Tobias Giesbrecht
Development of a Peer-Creation-Process to Leverage the Power of Collaborative Knowledge Transfer .........................................................797
Sarah Oeste-Reiß, Matthias Söllner, and Jan Marco Leimeister

Supporting Organizational Sensemaking with Collaboration Engineering .....................................................807
Sami Jantunen and Tapani Koivisto

**Serious Games, Gamification and Innovation — Minitrack Chairs: Imed Boughzala, Hélène Michel**

Introduction to the Serious Games, Gamification and Innovation Minitrack ..................................................817
Imed Boughzala and Hélène Michel

Characterizing Serious Games Implementation's Strategies: Is Higher Education the New Playground of Serious Games? ....................................................818
Hélène Michel

Improving Decision Making Skills through Business Simulation Gaming and Expert Systems .........................................................827
Alexander Fuchsberger

Increasing the Creative Output at the Fuzzy Front End of Innovation — A Concept for a Gamified Internal Enterprise Ideation Platform ........................................837
Eric Zimmerling, Patrick J. Höflinger, Philipp Sandner, and Isabell M. Welpe

Questlab: A Web-Framework for Gamification of Seminars ........................................................................847
Oliver Hanraths, Anja Wintermeyer, and Kathrin Knautz

**Social and Psychological Perspectives in Collaboration Research — Minitrack Chairs: Gert-Jan de Vreede, Triparna de Vreede**

Introduction to the Social and Psychological Perspectives in Collaboration Research Minitrack ..................................................857
Gert-Jan de Vreede and Triparna de Vreede

A Systematic Literature Review on the Relation of Information Technology and Information Overload .........................................................858
Nikolai Sobotta

How E-Mail Threads Contribute to E-Mail Overload: Investigating Intrinsic, Extraneous, and Germane Cognitive Load .........................................................868
Nikolai Sobotta

How IT-Artifacts Disturb Advice Giving — Insights from Analyzing Implicit Communication .....................................................878
Mehmet Kilic, Mateusz Dolata, and Gerhard Schwabe

Measurement and Outcomes of Identity Communication in Virtual Teams .........................................................888
Susan A. Brown, Sherry M. B. Thatcher, and David W. Wilson

Philosophy of Collaboration ........................................................................................................................................898
Nils Randrup, Douglas Druckenmiller, and Robert O. Briggs

Introduction to Social Media and e-Business Transformation Minitrack

Christy M. K. Cheung, Matthew K. O. Lee, and Christian Wagner

Do Others’ Opinion Matter? Investigating the Impact of Gender Differences on Trustworthiness of e-WOM

Fei Liu, Bo Xiao, Eric T. K. Lim, and Chee-Wei Tan

Group Bundling Versus Traditional Bundling in e-Commerce: A Field Experiment

Ahmed Doha, Maryam Ghasemaghaei, and Khaled Hassanein

Measuring the Perceived Functional Affordances of Collaborative Innovation Networks in Social Product Development

Kaveh Abhari, Elizabeth J. Davidson, and Bo Xiao

Moving On: Predicting Continuance Intention on Social Networking Sites through Alternative Products

Christopher Sibona and Judy Scott

Understanding the Factors Influencing the Online Group Buying Behavior from a Pull - Push Perspective

Yongqiang Sun, Xiao-Liang Shen, and Nan Wang

Technology Mediated Collaborations in e-Health — Minitrack Chairs: Souren Paul, Arkalgud Ramaprasad, Nilmini Wickramasinghe

Introduction to the Technology Mediated Collaborations in Healthcare Minitrack

Souren Paul, Arkalgud Ramaprasad, and Nilmini Wickramasinghe

An Ontological Health Cluster Framework

Keith Toh, Margaret Heffeman, Vass Karpathiou, Arkalgud Ramaprasad, and Nilmini Wickramasinghe

Balancing Priorities: A Field Study of Coordination in Distributed Elder Care

Troels Mønsted, Andreas Kaas Johansen, Frederik Lauridsen, Vlad Manea, and Konstantin Slavin-Borovskij


Fangjian Gao, Scott Thiebes, and Ali Sunyaev

The Application of Activity Theory to Explain Collaborative Technology Use in Healthcare: The Case of a Chemotherapy Ordering System

Jana Riechert, Carolin Durst, and Nilmini Wickramasinghe
Decision Analytics, Mobile Services, and Service Science Track — Track Chairs: Christer Carlsson and Haluk Demirkan

Introduction to the Decision Analytics, Mobile and Service Science Track (DA/MS/SS) ..................................................998

Christer Carlsson and Haluk Demirkan

Addressing Grand Challenges with Systems Sciences — Minitrack Chair: Daniel Soper

Introduction to the Addressing Grand Challenges with Systems Sciences Minitrack ..........................................................999

Daniel Soper

Life Coach: Using Big Data and Analytics to Facilitate the Attainment of Life Goals .........................................................1000

Joseph A. Cazier and Jennifer A. Green

Analytics, Information Systems and Decision Technologies for Sustainability — Minitrack Chairs: Omar El-Gayar, PingSun Leung, Arno Scharl

Introduction to Analytics, Information Systems and Decision Technologies for Sustainability Minitrack ................................1009

Omar El-Gayar, Arno Scharl, and PingSun Leung

Decision Model for Sustainable Electricity Procurement Using Nationwide Demand Response ......................................................1010

Joscha Märkle-Huß, Stefan Feuerriegel, and Dirk Neumann

Engaging Consumers in Ethical Consumption: The Effect of Real-Time Environmental Information on Eco-Friendly Consumer Choice ........................................................................................................1020

Laurie Giddens, Lazaros Goutas, Dorothy Leidner, and Juliana Sutanto

Energy Points: A New Approach to Optimizing Strategic Resources by Leveraging Big Data ......................................................1030

Nigel P. Melville and Ory Zik

Extracting Opinion Targets from Environmental Web Coverage and Social Media Streams .................................................................................................................................1040

Albert Weichselbraun, Arno Scharl, and Stefan Gindl

Towards Ecological Workflow Patterns as an Instrument to Optimize Business Processes with Respect to Ecological Goals .................................................................................1049

Patrick Lübbecke, Peter Fettke, and Peter Loos


Introduction to the Big Data and Analytics: Concepts, Techniques, Methods, and Applications Minitrack ..................................................1059

Stephen H. Kaisler, Frank J. Armour, and Alberto J. Espinosa

A Framework of Value Creation from Business Intelligence and Analytics in Competitive Sports .............................................................................................................................1061

Olivier Caya and Adrien Bourdon
Analysis of How Underlying Topics in Financial News Affect Stock Prices Using Latent Dirichlet Allocation
Stefan Feuerriegel, Antal Ratku, and Dirk Neumann

How Do Investor Relations Related Disclosures on Facebook Contribute to a Company’s Information Environment?
Tawei Wang, Hsiao-Lun Lin, and Ju-Chun Yen

Information Processing in Securitized Real Estate Markets — How Newspaper Content and Online Search Behavior Help Explaining Market Movements
Jan-Otto Jandl

Latticing and Device-Histories: Dynamic Customer Profiling for Mobile Advertising Campaigns
Donald Kridel and Daniel Dolk

The Big Data Analytics Gold Rush: A Research Framework for Coordination and Governance
J. Alberto Espinosa and Frank Armour

Business Value of the Internet of Things - Minitrack Chairs: Fred Riggins, Samuel Fosso Wamba, Matthias Dehmer
Introduction to Business Value of the Internet of Things Minitrack
Fred Riggins, Samuel Fosso Wamba, and Matthias Dehmer

Big Data Analytics-Enabled Supply Chain Transformation: A Literature Review
Mondher Feki, Imed Boughzala, and Samuel Fosso Wamba

Data, Text and Web Mining for Business Analytics — Minitrack Chair: Dursun Delen
Introduction to Data, Text, and Web Mining for Business Analytics Minitrack
Dursun Delen

A Unified Framework for Fine-Grained Opinion Mining from Online Reviews
Hao Wang, Chen Zhang, Hongzhi Yin, Wei Wang, Jun Zhang, and Fanjiang Xu

Augmenting Text Mining Approaches with Social Network Analysis to Understand the Complex Relationships among Users’ Requests: A Case Study of the Android Operating System
Chan Won Lee, Sherlock A. Licorish, Bastin Tony Roy Savarimuthu, and Stephen G. MacDonell

Comparing European and North American is Research Using Concept Frequency Analysis: Methods and Preliminary Findings
Daniel S. Soper and Ofir Turel

Detecting Negation Scopes for Financial News Sentiment Using Reinforcement Learning
Nicolas Pröllochs, Stefan Feuerriegel, and Dirk Neumann

Enhancing Retrieval and Ranking Performance for Media Search Engine by Deep Learning
Xugang Ye, Jingjing Li, Zijie Qi, and Xiaodong He
# Digital Service Innovations Based on “Open” Phenomena and Practices — Minitrack Chairs: Juho Lindman, Matti Rossi, Virpi Kristiina Tuunainen

Introduction to the Minitrack on Digital Service Innovations Based on “Open” Phenomena and Practices

Juho Lindman, Matti Rossi, and Virpi Kristiina Tuunainen

Digital Service Innovation from Open Data: Exploring the Value Proposition of an Open Data Marketplace

Göran Smith, Hosea Ayaba Ofe, and Johan Sandberg

The Dynamics of Digital Platform Innovation: Apple’s Strategy to Control Modular and Architectural Innovation in iOS

Ben Eaton

The Evolution of a Sharing Platform into a Sustainable Business

Ioanna Constantiou, Ben Eaton, and Virpi Kristiina Tuunainen

---

# Gamification: Motivations, Effects, and Analytics — Minitrack Chairs: Juho Hamari, Petri Parvinen

Introduction to Gamification: Motivations, Effects and Analytics Minitrack

Juho Hamari and Petri Parvinen

Design Strategies for Gamified Physical Activity Applications for Older Adults

Dennis L. Kappen, Lennart E. Nacke, Kathrin M. Gerling, and Lia E. Tsotsos

Monitoring Gamification in International Patent Documents: Technology Classes, Firms and Preliminary Value Indicators

Patrick Julian Höflinger and Eric Zimmerling

Reimagining Gamification through the Lens of Activity Theory

Hendranus Vermeulen, James Gain, Patrick Marais, and Siobhan O'Donovan

The Impact of Gamification-Induced Emotions on In-car IS Adoption — The Difference between Digital Natives and Digital Immigrants

Carolin Ebermann, Everlin Piccinini, Benjamin Brauer, Sebastian Bussé, and Lutz Kolbe

When Competition is the Loser: The Indirect Effect of Intra-team Competition on Team Performance through Task Complexity, Team Conflict and Psychological Safety

Robin Brouwer

Why do People Buy Virtual Goods? A Literature Review

Juho Hamari and Lauri Keronen
Humanitarian Operations Research — Decision Analytics for Crisis and Disaster Management — Minitrack Chairs: Erik Kropat, Silja Meyer-Nieberg

Introduction to the Minitrack on Humanitarian Operations Research — Decision Analytics for Crisis and Disaster Management ...................................................................................................................................................1368

Erik Kropat and Silja Meyer-Nieberg

A Multi-layered Adaptive Network Approach for Shortest Path Planning During Critical Operations in Dynamically Changing and Uncertain Environments ...................................................................................................................................................1369

Erik Kropat and Silja Meyer-Nieberg

Disaster Management and Social Media Use for Decision Making by Humanitarian Organizations .............................................................................................................................................................................................................1379

Alivelu Mukkamala and Roman Beck

Intelligent Decision Support for Logistics and Supply Chain Management — Minitrack Chairs: Stefan Voss, Hans-Jurgen Sebastian

Introduction to the Minitrack on Intelligent Decision Support for Logistics and Supply Chain Management ...................................................................................................................................................1386

Hans-Jürgen Sebastian and Stefan Voß

A Mathematical Programming Model for Matching Sequential Activities in Logistics Systems with Tolerance for Erroneous or Missing Data ...................................................................................................................................................1387

L. Douglas Smith and Jan Fabian Ehmke

Modular Modeling and Optimization of Temporal Manufacturing Processes with Inventories .............................................................................................................................................................................................................1397

Mohan Krishnamoorthy, Alexander Brodsky, and Daniel A. Menascé

Strategic Decision Support for the Bi-Objective Location-Arc Routing Problem .............................................................................................................................................................................................................1407

Samdra and Huber

Supply Chain Capabilities and Information Technology Characteristics: Interaction Effects on Firm Performance .............................................................................................................................................................................................................1417

Soojung Oh, Young U. Ryu, and Hongsuk Yang

Interactive Visual Decision Analytics — Minitrack Chairs: David S. Ebert, Brian Fisher, Kelly Gaither

Introduction to the Minitrack on Interactive Visual Decision Analytics .............................................................................................................................................................................................................1426

David S. Ebert, Brian Fisher, and Kelly Gaither

Mixed-Initiative for Big Data: The Intersection of Human + Visual Analytics + Prediction .............................................................................................................................................................................................................1427

Stephen Makonin, Daniel McVeigh, Wolfgang Stuerzlinger, Khoa Tran, and Fred Popowich

ParallelSpaces: Simultaneous Exploration of Feature and Data for Hypothesis Generation .............................................................................................................................................................................................................1437

Deokgun Park, Jungu Choi, and Niklas Elmqvist

The Human-Computer System: Towards an Operational Model for Problem Solving .............................................................................................................................................................................................................1446

William Ribarsky and Brian Fisher
The Personal Equation of Interaction for Categorization of Composite Glyphs ...........................................................1456

Tera Marie Greensmith

Mobile Value Services — Minitrack Chairs: Pirkko Walden, Tomi Dahlberg, Esko Penttinen

Introduction to Mobile Value Services Minitrack ........................................................................................................1466

Pirkko Walden, Tomi Dahlberg, and Esko Penttinen

Addiction to Mobile Phone or Addiction through Mobile Phone? .................................................................1467

Behrooz Davazdahemami, Bryan Hammer, and Amr Soror

Business Model Change and Refinement along Business Model Lifecycle: Evidences from a Multiple Case Study on Mobile Telecommunications New Ventures .............................................................1477

Antonio Ghezzi and Andrea Cavallaro

Business Models for Free Digital Goods and Services .........................................................................................1487

Nicole Eling, Christian Büchner, and Peter Buxmann

Mobile Banking Services Continuous Usage — Case Study of Finland ..........................................................1497

Aijaz Ahmed Shaikh and Heikki Karjaluoto

The Impact of Mere Exposure Effect on Smartphone Addiction .............................................................................1507

Chongyang Chen, Kem Z. K. Zhang, Sesia J. Zhao, Matthew K. O. Lee, and Tianjiao Cong

Multi-criteria Decision Analysis and Support Systems — Minitrack Chairs: Rakesh Sarin, Heinz Roland Weistroffer

Introduction to Multi-criteria Decision Analysis and Support Systems Minitrack ....................................................1515

Rakesh Sarin and H. Roland Weistroffer

Improving Technology Investment Decisions at Hospitals through System Dynamics and Decision Analysis .................................................................................................................................1517

Alba Rojas-Cordova, Arash Baghaei-Lakeh, Hui Zhang, Christian Wernz, Hazhir Rahmandad, Anthony D. Slonim, and Ari Caroline

Multiobjective Decision Analysis with Probability Management for Systems Engineering Trade-off Analysis ......................................................................................................................................................1527

Alex MacCalman and Gregory S. Parnell

Tailoring Group Package Recommendations to Large Heterogeneous Groups Based on Multi-criteria Optimization ...............................................................................................................................................1537

Hanan Mengash and Alexander Brodsky

Testing Best Practices to Reduce the Overconfidence Bias in Multi-criteria Decision Analysis .....................................................................................................................................................................1547

Valentina Ferretti, Sule Guney, Gilberto Montibeller, and Detlof von Winterfeldt

xx
Service Analytics — Minitrack Chairs: Hansjörg Fromm, Thomas Setzer, Gerhard Satzger

Introduction to the Service Analytics Minitrack ........................................................................................................1556
Hansjoerg Fromm, Gerhard Satzger, and Thomas Setzer

Application of Hidden Markov Model to Analyze Enthusiasts' Dynamics of a Lifestyle Brand .........................................................................................................................................................................1557
Stephane Cheung, Yasuyuki Shirai, Hiroyuki Morita, Hiroyuki Takashima, Masakazu Nakamoto, and Edward Hak-Sing Ip

Business Analysis of Digital Discourse for New Service Development: A Theoretical Perspective and a Method for Uncovering the Structure of Social Representations for Improved Service Development ...........................................................................................................................1567
Friedrich Chasin

Subjective Norms and Customer Adoption of Mobile Banking: Taiwan and Vietnam ...............................................1577
Chih-Chin Liang

Service Science — Minitrack Chairs: Paul Maglio, Fu-ren Lin, Michael Shaw

Introduction to the Service Science Minitrack ............................................................................................................1586
Paul P. Maglio, Fu-ren Lin, and Michael J. Shaw

Designing a Peer-to-Peer Sharing Service as Fuel for the Development of the Electric Vehicle Charging Infrastructure .................................................................................................................................................................................................1587
Martin Matzner, Friedrich Chasin, Moritz von Hoffen, Florian Plenter, and Jörg Becker

Designing Institutional Complexity to Enable Innovation in Service Ecosystems ...........................................................1596
Kaisa Koskela-Huotari, Jaakko Siltaloppi, and Stephen L. Vargo

Decisions in Mobility Service Networks — Coordinating Demand and Supply Using a Mechanism Design Approach ........................................................................................................................................................................................................................................1606
Christopher Lisson, Nico Roedder, Philipp Stroehle, and Christof Weinhardt

Digital Health Platform Complementor Motives and Effectual Reasoning ................................................................1614
Anssi Smedlund

Lysanne Lessard and Chidinma Priscilla Okakwu

In-Store Gamification: Testing a Location-Based Treasure Hunt App in a Real Retailing Environment ........................................................................................................................................................................................................................................1634
Marcus Olsson, Johan Högborg, Erik Wästlund, and Anders Gustafsson

Structure, Content and Use of IT Service Catalogs — Empirical Analysis and Development of a Maturity Model ........................................................................................................................................................................................................................................1642
Felicitas Nord, Regine Dörbecker, and Tilo Böhmann
Smart Service Systems: Analytic, Cognition, and Innovation — Minitrack Chairs: Haluk Demirkan, Jim Spohrer, Ralph Badinelli

Introduction to the Smart Service Systems: Analytics, Cognition and Innovation
Minitrack ..............................................................................................................................1652
Haluk Demirkan, James C. Spohrer, and Ralph Badinelli

Converged Reality: A Data Management Research Agenda for a Service-, Cloud-, and Data-Driven Era .................................................................1653
Michael Smit

How to Effectively Train IBM Watson: Classroom Experience ....................................................1663
Syed Shariyar Murtaza, Paris Lak, Ayse Bener, and Armen Pischdotchian

Learning Track Representation and Trends for Conference Analytics ........................................1671
Pengfei Liu, Shoaib Jameel, King Keung Wu, and Helen Meng

Out of Vocabulary Words Decrease, Running Texts Prevail and Hashtags Coalesce:
Twitter as an Evolving Sociolinguistic System .........................................................................1681
Suman Kalyan Maity, Bhadreswar Ghuku, Abhishek Upmanyu, and Animesh Mukherjee

RFPCog: Linguistic-Based Identification and Mapping of Service Requirements in Request for Proposals (RFPs) to IT Service Solutions .........................................1691
Hamid R. Motahari-Nezhad, Juan M. Cappi, Taiga Nakamura, and Mu Qiao

Work-Life Optimization: Using Big Data and Analytics to Facilitate Work-Life Balance ............1701
James A. Westwood and Joseph A. Cazier

Soft Computing — Minitrack Chairs: Rudolf Kruse, Gabriella Pasi, Jose Alonso

Introduction to the Soft Computing and Intelligent Data Analysis Minitrack ................................1710
Rudolf Kruse, Gabriella Pasi, and José Mariá Alonso

Epsilon-Constrained CCPSO with Different Improvement Detection Techniques for Large-Scale Constrained Optimization .........................................................1711
Chen Peng and Qing Hui

Determination of Event Patterns for Complex Event Processing Using Fuzzy Unordered Rule Induction Algorithm with Multi-objective Evolutionary Feature Subset Selection .................................................1719
Nijat Mehdiyev, Julian Krumeich, Dirk Werth, and Peter Loos

Streaming Data Analytics and Applications — Minitrack Chairs: Mehmed Kantardzic, Jozef Zurada

Introduction to Streaming Data Analytics and Applications Minitrack .........................................1729
Mehmed Kantardzic and Jozef Zurada

Epoch Persistence: Safe, Efficient, On-demand Rendering for Streaming Data ..........................1730
Joseph A. Cottam and Andrew Lumsdaine

Real-Time Driving Monitor System: Combined Cloud Database with GPS .................................1740
Wei-Yen Hsu, Kun-Sin Lien, Yu-Chan Wang, Yu-Ting Zheng, and Guan-Han Li

Smart Preprocessing Improves Data Stream Mining ..................................................................1749
Hanqing Hu and Mehmed Kantardzic
Systemic Financial Risk Analytics — Minitrack Chairs: Peter Sarlin, Tuomas Peltonen

Introduction to Systemic Analytics Minitrack .................................................................1758
   Peter Sarlin and Tuomas A. Peltonen

A R-SOM Analysis of the Link between Financial Market Conditions and a Systemic Risk Index Based on ICA-Factors of Systemic Risk Measures .................................................................1759
   Patrick Kouontchou, Amaury Lendasse, Yoan Miche, Alejandro Modesto, Peter Sarlin, and Bertrand Maillet

The Effect of Diversification on Financial Contagion ........................................................1771
   Xian Cheng, Xinbo Sun, Stephen Shaoyi Liao, Zhongsheng Hua, Xiaolu Yang, and Mengshen Huang

Wearables and Quantified Self — Minitrack Chairs: Tayfun Keskin, Deanna Kennedy, Hugo Parades

Introduction to the Wearables and Quantified Self Minitrack ..................................................1781
   Tayfun Keskin, Deanna Kennedy, and Hugo Parades

A Pricing Model for the Internet of Things Enabled Smart Service Systems .................................1782
   Deanna Kennedy and Tayfun Keskin

A Resource Complementarity View (RCV) of Value Creation in the Context of Connected Smart Devices ........................................................................................................1790
   Aaron Baird and Frederick J. Riggins

Crowdfunding for Financing Wearable Technologies ................................................................1800
   Fehmi Tanrisever and Karen-Ann Wismans-Voorbraak

Digital and Social Media Track — Track Chairs: Kevin Crowston and Karine Nahon

Introduction to the Digital and Social Media Track ................................................................1808
   Nahon Karine and Crowston Kevin

Co-Creating Innovations — Minitrack Chairs: Carina Ihlström Eriksson, Birgitta Bergvall-Kåreborn

Introduction to the Co-Creating Innovations Minitrack ..............................................................1809
   Carina Ihlström Eriksson and Birgitta Bergvall-Kåreborn

Designing for Positive User Experience in Product Design: A Qualitative Analysis of Toolkit Design Elements and Their Implications on Emotional Reactions and Perceptions ........................................................................................................1810
   Kathrin Füller, Markus Böhm, and Helmut Krcmar

The Dual Nature of Information Systems in Enabling a New Wave of Hardware Ventures: Towards a Theory ........................................................................................................1820
   Frederik von Briel and Jan Recker
The Use of Social Media Tools in the Product Life Cycle Phases: A Systematic Literature Review

Jeremi Roch and Elaine Mosconi

Collective Intelligence and Crowds: Structure, Roles, and Identity — Minitrack Chairs: Jeffrey Nickerson, Pnina Fichman, Donald Steiny

Introduction to Collective Intelligence and Crowds: Structure, Roles, and Identity

Jeffrey V. Nickerson, Pnina Fichman, and Don Steiny

Informating Transport Transparency

Magnus Andersson and Henrik Sternberg

Risk Taking in Online Crowdsourcing Tournaments

Tim Straub, Timm Teubner, and Christof Weinhardt

Tweeting Like Taylor Swift? Affordances, Status Production, and Online Platforms

Stefan Seidel, Nicholas Berente, Stefan Debortoli, and Nikhil Srivivasan

Critical and Ethical Studies of Digital and Social Media — Minitrack Chair: Robert Mason, Mary Gray, Tarleton Gillespie

Introduction to the Critical and Ethical Studies of Digital and Social Media Minitrack

Tarleton Gillespie, Mary L. Gray, and Robert M. Mason

A Critical Reflection on Social Media Research Using an Autoethnographic Approach

Jordan Eschler

A Fair Exchange: Exploring How Online Privacy is Valued

Michael A. Katell, Sonali R. Mishra, and Ligaya Scaff

Software Update Unrest: The Recent Happenings Around Tinder and Tesla

Amelia Acker and Brian Beaton

The Political Economy of Creative Entrepreneurship on Digital Platforms: Case Study of Etsy.com

Samantha Close

“We Aren’t All Going to Be on the Same Page about Ethics”: Ethical Practices and Challenges in Research on Digital and Social Media

Katie Shilton and Sheridan Sayles

Data Analytics and Data Mining for Social Media — Minitrack Chairs: David J. Yates, Jennifer Xu, Dominique Haughton, Xiangbin Yan

Introduction to Data Analytics and Data Mining for Social Media Minitrack

Dominique M. Haughton, Jennifer J. Xu, David J. Yates, and Xiangbin Yan

Analysing the Usage of Wikipedia on Twitter: Understanding Inter-Language Links

Eva Zangerle, Georg Schmidhammer, and Günther Specht

Brand-Related Twitter Sentiment Analysis Using Feature Engineering and the Dynamic Architecture for Artificial Neural Networks

David Zimbra, M. Ghiassi, and Sean Lee
Can Visualization Techniques Help Journalists to Deepen Analysis of Twitter Data?
Exploring the “Germany 7 x 1 Brazil” Case .................................................................1939
Caroline Q. Santos, Roberto Tietzmann, Marcelo Trasel, Silvia Moraes,
Isabel H. Manssour, and Milene S. Silveira

Measuring Emotion Bifurcation Points for Individuals in Social Media ..................................1949
Jiandong Zhou, Yanping Zhao, Huaping Zhang, and Tianming Wang

Predicting Twitter Hashtags Popularity Level ............................................................................1959
Shing H. Doong

Rumors at the Speed of Light? Modeling the Rate of Rumor Transmission During Crisis .........................1969
Li Zeng, Kate Starbird, and Emma S. Spiro

Success Factors of Online Petitions: Evidence from Change.org .................................................1979
Ahmed Said Elnoshokaty, Shuyuan Deng, and Dong-Heon Kwak

The People Have Spoken: Conflicting Brazilian Protests on Twitter ...........................................1986
Cássia de Souza Carvalho, Fabricio Olivetti de Franca, Denise Hideko Goya,
and Claudio Luis de Camargo Penteado

Materiality of Information, Documents and Work — Minitrack Chairs: Carsten Osterlund, David Ribes, Daniela Rosner
Introduction to Materiality of Information, Documents and Work Minitrack ........................................1996
Carsten Østerlund, David Ribes, and Daniela K. Rosner

Does the is Artifact Matter in Sociomateriality Research? A Literature Review
of Empirical Studies .....................................................................................................................1997
Silke Weißenfels, Katharina Ebner, Sven Dittes, and Stefan Smolnik

On Writing an Evaluation Report in Afghanistan: Making Heterogeneity Cohere
through Writing Infrastructures, Format and Authorship ................................................................2007
Tjitske Holtrop

Observing the Materiality of Values in Information Systems Research ........................................2017
Jaime Snyder, Katie Shilton, and Sara Anderson

Network Analysis of Digital and Social Media — Minitrack Chair: Devan Rosen, George A. Barnett
Introduction to the Network Analysis of Digital and Social Media Minitrack ......................................2027
Devan Rosen and George A. Barnett

Developing the Network Awareness Construct: Evidence Supporting the Ability
to Understand Social Situations ..................................................................................................2028
Michael A. Stefanone, Alaina Iacobucci, and Elena Svetieva

Evolution, Structure and Users’ Attachment Behavior in Enterprise Social Networks .....................2038
Katharina Wiesneth

Network Approach to Regime Type and Global Internet Connectedness ...................................2048
Hyunjin Seo and Stuart Thorson
Networked Solidarity: An Exploratory Network Perspective on Twitter Activity Related to #illridewithyou ..........................2058
Chamil Rathnayake and Daniel D. Suthers

The Influence of Retweeting Robots During Brazilian Protests .................................................................2068
Éric Tadeu Camacho de Oliveira, Fabricio Olivetti de França, Denise Hideko Goya, and Claudio Luis de Camargo Penteado

Social Computing for Sustainability — Minitrack Chairs: David Sundaram, Gabrielle Peko, Shahper Vodanovich

Introduction to the Social Computing for Sustainability Minitrack .................................................................2077
David Sundaram, Gabrielle Peko, and Shahper Vodanovich

Bicycle Sharing, Social Media, and Environmental Sustainability ...............................................................2078
Otto Benjamin Piramuthu and Wei Zhou

Social Media and Learning — Minitrack Chairs: Maarten de Laat, Caroline Haythornthwaite, Daniel D. Suthers

Introduction to Social Media and Learning Minitrack .....................................................................................2084
Maarten de Laat, Caroline Haythornthwaite, and Dan Suthers

Behavioral Manifestations of Intercultural Competence in Computer-Mediated Intercultural Learning ..........2085
Lisa Mei-ling Chuang and Daniel D. Suthers

How Interactive is a Semantic Network? Concept Maps and Discourse in Knowledge Communities ..........2095
Carmel Kent and Sheizaf Rafaeli

Task Oriented Reading of Instructional Materials and Its Relationship to Message Scores in Online Learning Conversations ..................................................................................2105
Evren Eryilmaz, Brian Thoms, Justin Mary, Rosemary Kim, and Jesus Canelon

The Social Media Trap — How Knowledge Workers Learn to Deal with Constant Social Connectivity ........2115
Lena Waizenegger, Ulrich Remus, and Ronald Maier

Social Media and Enterprise — Minitrack Chairs: Xuefei (Nancy) Deng, K.D. Joshi, Yibai Li

Introduction to Social Media and Enterprise Minitrack ..................................................................................2125
Xuefei (Nancy) Deng, K. D. Joshi, and Yibai Li

Adapt to Changes or Not? The Mediating Effect of Individual Adaptability between Social Media and Task Performance ..........................................................2126
Yang Gao, Xi Zhang, Aihui Chen, Yongqiang Sun, and Renyu Zhang

Did You LINE Today? Strategies for Creating LINE Online to Offline Customer Experiences ..................2136
Chien-I Weng, Hsi-Peng Lu, and Pei-Shan Wei

From Blogosphere to Social Commerce: A Laddering Analysis of Sellers’ Motivation .............................2146
Syahida Hassan, Janet Toland, and Mary Tate

---

xxvi
Getting a Job via Career-Oriented Social Networking Sites: The Weakness of Ties ..................................................2156

Ricardo Buettner

How Does Knowledge Workers’ Social Technology Readiness Affect Their Innovative Work Behavior? ..........................................................2166

Ruth Stock and Matthias Groß

Team Boundary Spanning through Enterprise Social Media: Exploring the Effects of Group-Level Diversity Using a Data Science Approach .................................................................2176

Wietske van Osch, Charles Steinfield, and Yanjie Zhao

Social Media and Location — Minitrack Chairs: Jim Thatcher, Britta Ricker

Introduction to Social Media and Location Minitrack ..........................................................2186

Jim Thatcher and Britta Ricker

Mining Semantic Sequential Patterns from Geo-Tagged Photos ..........................................................2187

Guochen Cai, Kyungmi Lee, and Ickjae Lee

The Effect of Location Granularity on Semantic Location Inferences ..........................................................2197

Kolbeinn Karlsson and Stephen B. Wicker

Social Networking and Communities — Minitrack Chairs: Karine Nahon, Caroline Haythornthwaite

Introduction to Social Networking and Communities Minitrack ..........................................................2205

Karine Nahon and Caroline Haythornthwaite

A Systematic Literature Review of Twitter Research from a Socio-Political Revolution Perspective ..........................................................2206

Ricardo Buettner and Katharina Buettner

Community Management on Social Networking Sites: Why and How Stakeholders Use Corporate Facebook Pages ..........................................................2216

Christopher H. Ruehl and Diana Ingenhoff

Consumer Acceptance and Use of Instagram ..........................................................2227

Joel Järvinen, Roope Ohtonen, and Heikki Karjaluoto

Disaster Data Assemblages: Five Perspectives on Social Media and Communities in Response and Recovery ..........................................................2237

Alex Lambert

Dissidents Versus Allegiants on Facebook: An Examination of Facebook Page Networks Related to Channel 4 War Crime Videos on Sri Lanka ..........................................................2246

Chamil Rathnayake and Daniel D. Suthers

How Do Online Social Networks Support Decision Making? A Pluralistic Research Agenda ..........................................................2256

Valeri Sadovykh and David Sundaram

Play Together, Stay Together? Community Cohesion and Stability in an MMO ..........................................................2266

Nathaniel Poor and Marko Skoric
Relational and Masspersonal Maintenance: Romantic Partners’ Use of Social Network Websites ..........................................................................................................................................................................................2276
Stephanie Tom Tong and David K. Westerman

Understanding the Factors Affecting Users’ Like Intentions in Social Network Services: A Multi-dimensional Value Perspective ..........................................................................................................................................................................................................................................................................................2286
Yongqiang Sun, Dina Liu, Xiao-Liang Shen, Xi Zhang, and Nan Wang

Electric Energy Systems Track — Track Chairs: Robert J. Thomas and Thomas J. Overbye
Introduction to the Electric Energy Systems Track .....................................................................................................................2296
Thomas J. Overbye and Robert J. Thomas

Economics, Markets, and Policy — Minitrack Chair: Shmuel Oren
Introduction to the Economics, Markets and Policy Minitrack, Electric Energy Minitrack ...........................................2297
Shmuel S. Oren

A New Outage Coordination: SMaRTS Model ..................................................................................................................2298
Gokturk Poyrazoglu and HyungSeon Oh

Calculation of Voltage Stability Margins and Certification of Power Flow Insolvability Using Second-Order Cone Programming ..........................................................................................................................2307
Daniel K. Molzahn, Ian A. Hiskens, and Bernard C. Lesieutre

The Engineering, Economic and Environmental Electricity Simulation Tool (E4ST): Description and an Illustration of Its Capability and Use as a Planning/Policy Analysis Tool ..........................................................................................................................................................................................................................................................................................................................................................................................2317
Biao Mao, Daniel Shawhan, Ray Zimmerman, Jubo Yan, Yujia Zhu, William Schulze, Richard Schuler, and Daniel Tylavsky

Financial Transmission Rights in Changing Power Networks ..................................................................................................................2326
Aleksandr M. Rudkevich, Michael C. Caramanis, Evgeniy A. Goldis, Xiaoguang Li, Pablo A. Ruiz, and Richard D. Tabors

Generation Ramping Valuation in Day-Ahead Electricity Markets ..................................................................................................................2335
Masood Parvania and Anna Scaglione

Managing System Ramp Flexibility by Utilizing Price-Responsive Demand: An Empirical Assessment ..........................................................................................................................................................................................................................................................................................................................................................................................2345
Anupam A. Thatte, Yuanyuan Li, and Le Xie

On the Death and Possible Rebirth of Energy-Only Markets ..................................................................................................................2354
Alberto J. Lamadrid, Tim Mount, and Wooyoung Jeon

What is the Benefit of Including Uncertainty in Transmission Planning? A WECC Case Study ..........................................................................................................................................................................................................................................................................................................................................................................................2364
Benjamin F. Hobbs, Saamrat Kasina, Qingyu Xu, Sang Woo Park, Jasmine Ouyang, Jonathan L. Ho, and Pearl E. Donohoo-Vallett
Integrating Distributed or Renewable Generation — Minitrack Chair: Judy Cardell

Introduction to Integrating Distributed or Renewable Generation Minitrack ..............................................................2372

Judith Cardell

A Comparison of Robust and Probabilistic Reliability for Systems with Renewables and Responsive Demand ..............................................................2373

Jialin Liu, Maria Gabriela Martinez, Bowen Li, Johanna Mathieu, and C. Lindsay Anderson

Advanced Energy Storage Management in Distribution Network ..............................................................2381

Guodong Liu, Oguzhan Ceylan, Bailu Xiao, Michael Starke, Ben Ollis, Daniel King, Philip Irminger, and Kevin Tomsovic

An Integrated Agent-Based and Production Cost Modeling Framework for Renewable Energy Studies ..............................................................2390

Giulia Gallo

Electric Vehicle Participation in Transactive Power Systems Using Real-Time Retail Prices ..............................................................2400

Sahand Behboodi, David P. Chassin, Curran Crawford, and Ned Djilali

Flexible Wind Dispatch, System Reliability and EPA’s Clean Power Plan ..............................................................2408

Judith Cardell and Lindsay Anderson

On Impact of Randomly Distributed PV Systems on Distribution Networks ..............................................................2418

Insu Kim and Miroslav Begovic

Optimal Power Flow with Random Wind Resources ..............................................................2426

Yuquan Shan and George Kesidis

Residential Energy Efficiency and Electric Demand Response ..............................................................2435

Ward Jewell

Monitoring, Control and Protection — Minitrack Chair: Joe Eto

Introduction to the Monitoring, Control and Protection Minitrack ..............................................................2445

Joseph H. Eto

A Multi-objective Optimization Algorithm for Bus Type Assignments in Random Topology Power Grid Model ..............................................................2446

Seyyed Hamid Elyas and Zhifang Wang

An Economic Evaluation Tool of Inertia Services for Systems with Integrated Wind Power and Fast-Acting Storage Resources ..............................................................2456

Ti Xu, Wonhyeok Jang, and Thomas Overbye

Direct Methods to Estimate the Most Limiting Voltage Level and Thermal Violations in Coordinates of Power Transfers on Critical Transmission Paths ..............................................................2466

Y. V. Makarov, D. Meng, B. Vyakaranam, R. Diao, B. Palmer, and Z. Huang

New Robust Time Series Model for Estimation of Power System Inter-Area Oscillations ..............................................................2472

Gurudatha Pai K and John W. Pierre

Protection and Control of Systems with Converter Interfaced Generation (CIG) ..............................................................2481

Sakis Meliopoulos, George Cokkinides, Yu Liu, Rui Fan, Sanghun Choi, and Paul Myrda

xxix
Risk Assessment of a Transmission Line Insulation Breakdown Due to Lightning and Severe Weather .................................................................2488
   Tatjana Dokic, Payman Dehghanian, Po-Chen Chen, Mladen Kezunovic, Zenon Medina-Cetina, Jelena Stojanovic, and Zoran Obradovic

Smart Fridge / Dumb Grid? Demand Dispatch for the Power Grid of 2020 ..............................................................2498
   J. Mathias, R. Kaddah, A. Bušić, and S. Meyn

Substation Local Voltage Controller Using Synchrophasors ........................................................2508
   Sayed Mohammad Amelian, Vaithianathan "Mani" Venkatasubramanian, Javier Guerrero, Noah Badayos, Farrokh Habibi-Ashrafi, Backer Abu-Jaradeh, and Armando Salazar

Resilient Networks — Minitrack Chair: Jeff Dagle

Introduction to the Resilient Networks Minitrack ........................................................................................................2518
   Jeff Dagle

Assessing Risk of Gas Shortage in Coupled Gas-Electricity Infrastructures ...........................................................2519
   Anatoly Zlotnik, Michael Chertkov, and Konstantin Turitsyn

Big Data Analytics for Modelling the Impact of Wind Power Generation on Competitive Electricity Market Prices ........................................................................................................2528
   Payam Zamani-Dehkordi, Logan Rakai, Hamidreza Zareipour, and William Rosehart

Convex Optimization for Joint Expansion Planning of Natural Gas and Power Systems ..........................................2536
   Conrado Borraz Sánchez, Russell Bent, Scott Backhaus, Seth Blumsack, Hassan Hijazi, and Pascal van Hentenryck

Electric Energy Storage Arbitrage in Electric Power Markets with Wind Uncertainty ...........................................2546
   Chao Li, Kory W. Hedman, and Muhong Zhang

Jamming Aided Generalized Data Attacks: Exposing Vulnerabilities in Secure Estimation .......................................2556
   Deepjyoti Deka, Ross Baldick, and Sriram Vishwanath

Quantifying Uncertainties of Security and QoS for Design of Power Grid Communications Systems .................................................................2566
   Yujue Wang, Carl Hauser, and Yiming Wu

The Impact of Distributed Energy Resources on Incumbent Utilities: A Case Study of Long Island, New York ........................................................................................................2576
   Richard D. Tabors, Hua He, and Michael Birk

The Impact of Local Power Balance and Link Reliability on Blackout Risk in Heterogeneous Power Transmission Grids .............................................................................................................2584

Electronic Government Track — Chair: Hans Jochen Scholl

Introduction to the Electronic Government Track ........................................................................................................2594
   Hans Jochen Scholl
Big and Linked Data (BOLD) in Government — Minitrack Chairs: Marijn Janssen, Yannis Charalabidis, Helmut Krcmar

Introduction to Big, Open and Linked Data (BOLD) in Government Minitrack ..............................................................2595
Marijn Janssen, Yannis Charalabidis, and Helmut Krcmar

An Open Data and Open Services Repository for Supporting Citizen-Driven Application Development for Governance ................................................................................................................................................2596
Yannis Charalabidis, Charalampos Alexopoulos, Vasiliki Diamantopoulos, and Aggeliki Androutsopoulou

Value Creation on Open Government Data ..........................................................................................................................2605
Judie Attard, Fabrizio Orlandi, and Sören Auer

Cybersecurity — Minitrack Chairs: Wm. Arthur Conklin, Gregory White, Ray Vaughn

Introduction to the Cybersecurity Minitrack ............................................................................................................................2615
Wm. Arthur Conklin, Rayford B. Vaughn, and Gregory B. White

Combining Mandatory and Attribute-Based Access Control ..................................................................................................2616
Lawrence Kerr and Jim Alves-Foss

Using an Improved Cybersecurity Kill Chain to Develop an Improved Honey Community ..................................................2624
James R. Rutherford and Gregory B. White

Would Increased Regulation Reduce the Number of Information Breaches? ........................................................................2633
Mark L. Huson and Barbara Hewitt

IT vs. OT Security: A Time to Consider a Change in CIA to Include Resiliency ....................................................................2642
Wm. Arthur Conklin

You Look Suspicious!!: Leveraging Visible Attributes to Classify Malicious Short URLs on Twitter .................................................................2648
Raj Kumar Nepali and Yong Wang

Emerging Topics in Electronic Government — Minitrack Chairs: Tino Schuppan, Theresa Pardo, Elin Wihlborg

Introduction to the Emerging Topics in Electronic Government Minitrack ...........................................................................2656
Theresa A. Prado, Tino Schuppan, and Elin Wihlborg

A Storytelling Approach for Electronic Government Research .................................................................................................2657
Ann-Sofie Hellberg

E-Government and the Transformation of Professionalism: The Case of the Police .................................................................2667
Esther Ruiz Ben and Tino Schuppan

Positioning Brazil in International eGov Research: A Proposal Based from Literature Review ................................................................................................................................................2677
Taiane Ritta Coelho, Erico Przybilovicz, Maria Alexandra Cunha, and Tiago Henrique Souza Echternacht
Understanding Public Sector Collaboration Through Boundary Object Theory: A Case Study of an E-Government Initiative in Sweden ................................................................. 2687
Carl-Mikael Lönn and Elin Uppström

**Information and Communication Technologies for Development: Contributing to Human Development and Social Justice — Minitrack Chairs: Ricardo Gomez, Øystein Sæbø, Alon Peled**

Introduction to the Minitrack on Information and Communication Technologies for Development: Contributing to Human Development and Social Justice ..................................................... 2697
Øystein Sæbø, Ricardo Gomez, and Luis Fernando Baron

The Current State of Social Media Research for eParticipation in Developing Countries: A Literature Review ................................................................. 2698
Alfatika Aunuriella Dini and Øystein Sæbø

Significance of ‘Contexts’ in ICTD Projects: Alignment and Misalignment of Stakeholders’ Interests ................................................................................................................................. 2708
Abel Pires da Silva and Walter D. Fernández

Sustainability of ICTD Projects and Its Influencing Factors: A Comprehensive Literature Review ................................................................................................................................. 2718
Abel Pires da Silva and Walter D. Fernández

**Inside the Insider Threat — Minitrack Chairs: Matt Bishop, Kara Nance, William Claycomb**

Introduction to the Inside the Insider Threat Minitrack ................................................................. 2728
Matt Bishop, Kara Nance, and William Claycomb

Demystifying Insider Threat: Language-Action Cues in Group Dynamics ................................................................. 2729
Shuyuan Mary Ho, Jeffrey T. Hancock, Cheryl Booth, Mike Burmester, Xiwen Liu, and Shashank S. Timmaraju

Explaining and Aggregating Anomalies to Detect Insider Threats ................................................................................................................................. 2739
Henry G. Goldberg, William T. Young, Alex Memory, and Ted E. Senator

Towards Reducing the Data Exfiltration Surface for the Insider Threat ................................................................................................................................. 2749
Bob G. Schlicher, Lawrence P. MacIntyre, and Robert K. Abercrombie

**Open and Participatory Government — Minitrack Chairs: Mitch Cochran, Scott Robertson, John Bertot**

Introduction to the Open and Participatory Government Minitrack ................................................................. 2759
Mitch Cochran, John Carlo Bertot, and Scott Robertson

An Analytical Tool for Event Interaction in a Smart City ................................................................................................................................. 2760
Luana Carine Schünke, Paulo Luna de Oliveira, and Marta Becker Villamil

Automatic Content Analysis of Media Framing by Text Mining Techniques ................................................................................................................................. 2770
Fu-ren Lin, De Hao, and Dachi Liao

Collective Intelligence in Law Reforms: When the Logic of the Crowds and the Logic of Policymaking Collide ................................................................................................................................. 2780
Tanja Aitamurto
Information Rules as Institutions Shaping Political Participation .................................................................2790

Madelyn Rose Sanfilippo

Participatory Crowdfunding: An Approach towards Engaging Employees and Citizens in Institutional Budgeting Decisions .................................................................................................................2800

Claudia Niemeyer, Thomas Wagenknecht, Timm Teubner, and Christof Weinhardt

Uncovering Governmental Transparency in Federative States: Diverse Government Spheres, Heterogeneous Outcomes ...............................................................................................................................2809

Taiane Ritta Coelho, Thomaz Anderson, Barbosa da Silva, Maria Alexandra Cunha, Marco Antonio, and Carvalho Teixeira

Using Crowdstorm to Prospect Innovations in Federal Institutions of Education in Brazil to Reduce Its Consumption of Electric Energy .........................................................................................................2819

Wagner Vilas Boas de Souza, Carolina Cristina M. Cavalcante, Paulo Henrique de Souza Bermejo, Pamela Aparecida dos Santos, Kelly Carvalho Vieira, Wellington Rodrigues Pereira, and José Roberto Pereira


Introduction to Policies and Strategies for Digital Government Minitrack .................................................................2829

Peter Parycek, Frank Bannister, and Antonio Cordella

Coercive E-Government Policy Imposing Harm: The Need for a Responsible E-Government Ethics ........................................................................................................................................................................2830

Jesper B. Berger

Creating Public Value through Digital Government: Lessons on Inter-Organizational Collaboration and Information Technologies ........................................................................................................................2840

Luis F. Luna-Reyes, Sergio Picazo-Vela, Dolores E. Luna, and J. Ramon Gil-Garcia

The Role of Governance, Cooperation, and eService Use in Current eGovernment Stage Models ..............................................................................................................................................................................2850

Morten Meyerhoff Nielsen

Resilience Against Crises and Disasters — Minitrack Chairs: Jose J. Gonzalez, Emma S. Spiro, Elsa Negre

Introduction to the Resilience Against Crises and Disasters Minitrack ...........................................................................2861

Jose J Gonzalez, Emma Spiro, and Elsa Negre

How do Organizational Processes Recover Following a Disaster? A Capital Resiliency Model for Disaster Preparedness ...........................................................................................................................................2862

Mihoko Sakurai, Richard T. Watson, and Jiro Kokuryo

Measuring Usability in Decision Tools Supporting Collaborations for Environmental Disaster Response ........................................................................................................................................................................2872

Holly T. Ferguson, Sandra Gesing, and Jarek Nabrzyski

oDMN: An Integrated Model to Connect Decision-Making Needs to Emerging Data Sources in Disaster Management ................................................................................................................................................2882

Flávio Eduardo Aoki Horita, Daniel Link, João Porto de Albuquerque, and Bernd Hellingrath
Services and Information — Minitrack Chairs: Lemuria Carter, Ludwig Christian Schaupp, James Moore

Introduction to the Services and Information Minitrack .................................................................2892
  Lemuria Carter, Ludwig C. Schaupp, and James H. Moore

How Usable and Clear are the Websites of European Capitals from the Point of View of German Students Adopting an E-Government Perspective? .................................................................2893
  Margit Scholl

“The Computer Says No!” — A Case Study on Automated Decision-Making in Public Authorities ..........................................................................................................................2903
  Elin Wihlborg, Hannu Larsson, and Karin Hedström

The Interplay between E-Government Service Adoption Preferences and E-Government Service Delivery in Germany ........................................................................................................2913
  Lea Thiel

The Public Value Creation of eGovernment: A Test of the Respecified is Success Model .................................................................................................................................2923
  Olusegun Agbabiaka and Reginald Ugaddan

Smart Cities and Smart City Government — Minitrack Chairs: Mila Gasco, Elsa Negre, Camille Rosenthal-Sabroux

Introduction to the Smart Cities and Smart City Government Minitrack ...........................................2933
  Mila Gascó, Camille Rosenthal-Sabroux, and Elsa Negre

Managing a Smart City’s Resilience to Ebola: An Ontological Framework ......................................2935
  Matthew Liotine, Arkalgud Ramaprasad, and Thant Syn

Smart Cities and Transparency Does Smartness Influence Transparency? ........................................2944
  Maria Cucciniello, Nicola Bellé, Greta Nasi, and Marco Mena

Smart Governance: A Cross-Case Analysis of Smart City Initiatives .............................................2953
  Suha Alawadhi and Hans J Scholl

Towards the Construction of Smart City Index for Analytics (SM-CIA): Pilot-Testing with Major Cities in China Using Publicly Available Data ......................................................2964
  Yin-Leng Theng, Xuexin Xu, and Witedwittayanusat Kanokkorn

Triple Helix in Smart Cities: A Literature Review about the Vision of Public Bodies, Universities, and Private Companies .....................................................................................2974
  Renata Paola Dameri, Elsa Negre, and Camille Rosenthal-Sabroux

What Makes a City Smart? Lessons from Barcelona ........................................................................2983
  Mila Gascó
Social Media in Government — Minitrack Chairs: Rodrigo Sandoval, Andrea Kavanaugh, Margit Christa Scholl

Introduction to the Social Media in Government Minitrack ..........................................................2990
  Rodrigo Sandoval-Almazan, Margit Scholl, and Andrea Kavanaugh

Characterizing Government Social Media Research: Towards a Grounded Overview
Model ...............................................................................................................................................2991
  Rony Medaglia and Lei Zheng

Delivering Public Value: Synergistic Integration via Gov 2.0 ..........................................................3000
  Mohammed Aladalah, Yen Cheung, and Vincent C. S. Lee

Transformational Government: Governance, Organization, and Management — Minitrack Chairs: Miriam Lips, Leif Skiftenes Flak, J. Ramon Gil-Garcia

Introduction to the Transformational Government: Governance, Organization, and Management Minitrack ..............................................................3010
  A. Miriam B. Lips, Leif Skiftenes Flak, and J. Ramon Gil-Garcia

A Stabilization Model for E-Government Innovation ................................................................3011
  Taehyoon Choi, Deok-Soo Kim, and Jungyun Ha

Issues in the Transition to CIO Role in the Public Sector of Developing Countries ..........................3021
  Bashir Hussain, Tim Turner, and Ahmed Imran

Modes of Collaboration for Realizing E-Government Benefits ....................................................3031
  Carl-Mikael Lönn, Gustaf Juell-Skielse, and Tero Päiväranta

Information Technology in Healthcare Track — Track Chairs: William Chismar and Tom Horan

Introduction to the Information Technology in Healthcare Track ..................................................3041
  William G. Chismar and Thomas A. Horan

Global Health IT Strategies — Minitrack Chairs: Joseph Tan, Nilmini Wickramasinghe, Michael Dohan

Introduction to the Global Health IT Strategies Minitrack ............................................................3042
  Joseph Tan, Michael S. Dohan, and Nilmini Wickramasinghe

The Role of Social Networking in Healthcare ..............................................................................3043
  Nicole O’Brien, Joseph Tan, and Yufei Yuan

Value-Mapping IT Platform Options in Global Health: A Multi-year Case of Code Rot versus the Event-Driven Outbreak Economy ........................................................3053
  Dominic Thomas and Renee Subramanian

Vis-Health: Exploratory Analysis and Visualization of Dengue Cases in Brazil ...........................3063
  Naira Kaieski, Luiz Paulo Luna de Oliveira, and Marta Becker Villamil
Health Behavior Change Support Systems — Minitrack Chairs: Harri Oinas-Kukkonen, Khin Tan Win, Samir Chatterjee

Introduction to Health Behavior Change Support Systems (HBCSS) Minitrack ........................................................3073
Harri Oinas-Kukkonen, Khin Than Win, and Samir Chatterjee

Discovering Design Principles for Persuasive Systems: A Grounded Theory and Text Mining Approach ..................................................................................................................................................3074
Mohammad Al-Ramahi, Omar El-Gayar, and Jun Liu

Socially Influencing Technologies for Health Promotion: Translating Social Media Analytics into Consumer-facing Health Solutions ..................................................................................................................3084
Sahiti Myneni and Sriram Iyengar

Usage of Facebook-and Anonymous Forum-Based Peer Support Groups Online and Their Influence on Perceived Social Support Types in Weight Loss ..................................................................................3094
Heini Taiminen and Kimmo Taiminen

IT Adoption, Diffusion and Evaluation in Healthcare — Minitrack Chairs: Ton Spil, Carla Wiggins, Leigh Cellucci, Arnold Kamis

Introduction to the IT Adoption, Diffusion, and Evaluation in Healthcare Minitrack ......................................................3104
Leigh Cellucci, Arnold Kamis, Ton Spil, and Carla Wiggins

A Closer Look at the Social Influence Construct in the UTAUT Model: An Institutional Theory Based Approach to Investigate Health IT Adoption Patterns of the Elderly .........................................................3105
Karoly Bozan, Kevin Parker, and Bill Davey

A Study of Privacy and Security Concerns on Doctors’ and Nurses’ Behavioral Intentions to Use RFID in Hospitals ..................................................................................................................................................3115
Thomas G. Winston, Souren Paul, and Lakshmi Iyer

Acceptance and Organizational Aspects of Oral Tele-Consultation: A French Study .................................................................................................................................3124
Roland Petcu, Roxana Ologeanu-Taddei, Isabelle Bourdon, Chris Kimble, and Nicolas Giraudreau

Adoption of Social Media and the Quality of Life of Older Adults .........................................................................................3133
Yun Yang, Yufei Yuan, Norm Archer, and Ellen Ryan

Health Literacy: Exploring Health Knowledge Transfer in Online Healthcare Communities ..................................................................................................................................................3143
Yanyan Shang and Jun Liu

IT-Based Revenue Cycle Management: An Action Research into Relational Coordination ..................................................................................................................................................3152
Rajendra Singh, Vitali Mindel, and Lars Mathiassen

An Exploration of the Impact of EMR Capabilities on Hospital Quality Measures in U. S. ..................................................................................................................................................3162
Yousra Harb, Surendra Sarnikar, and Cherie Noteboom

Implementation and Adoption of an Electronic Information System for Vaccine Inventory Management ..................................................................................................................................................3172
Marie-Pierre Gagnon, Amélie Lampron, and Ronald Buyl

xxxvi
Improving Electronic Health Record Downtime Contingency Plans with Discrete-Event Simulation

Ethan Larsen, Christiane Haubitz, Christian Wernz, and Raj Ratwani

Internet Usage, Physician Performances and Patient's Trust in Physician During Diagnoses: Investigating Both Pre-Use and Not-Use Internet Groups

Tian Lu, Hong Chen, Yunjie Xu, and Chenghong Zhang

Lifetime Electronic Health Records as an Enabler for Integrated Care

Peggy Richter, Kai Gand, and Werner Esswein

The Effect of 'Device' in Task-Technology Fit: A Study of German Hospitals

Michael Weber, Andy Weeger, Corinna Gewald, and Ulrich Haase

IT Architectures and Implementations in Healthcare Environments — Minitrack Chairs: Radmila Juric, Jasna Kuljis, Suzanne Miller

Introduction to IT Architectures and Implementations in Healthcare Environments

Radmila Juric, Jasna Kuljis, and Suzanne Miller

A Business Process Management Approach to Surgical Instrument/Device Reprocessing and Tracking

Jim Ryan, Barbara Doster, Sandra Daily, and Carmen Lewis

Adaptive Dissemination for Mobile Electronic Health Record Applications with Proactive Situational Awareness

Davy Preuveneers, Nayyab Zia Naqvi, Arun Ramakrishnan, Yolande Berbers, and Wouter Joosen

An Architecture for Pull-Based Public Health Interventions

Robert Steele and Andrew Clarke

BPMN4CP Revised — Extending BPMN for Multi-perspective Modeling of Clinical Pathways

Richard Braun, Hannes Schlieter, Martin Burwitz, and Werner Esswein

Decision Support for the Service Needs Assessment Process in Elderly Care

Tanja Kaarna, Jukka Korpela, Kalle Elfvengren, Tarja Viitikko, and Merja Tepponen

Expanding the Coverage of Ambient Assisted Living Systems

João Bentes, Daniela Trevisan, and José Viterbo

Semantic Selection of Healthcare Apps

Hamda Almarri Binghubash, Radmila Juric, and Bilal Mughal

Validating Scanned Foot Images and Designing Customized Insoles on the Cloud

Gabor Terstyanszky, Tamas Kiss, Simon Taylor, Anastasia Anagnostou, Miguel Subira, Giuseppe Padula, Enrique De Meer Alonso, and Jose Manuel Martin Rapun

xxxvii
Learning Health Systems — Minitrack Chairs: Kevin Sullivan, Alon Y. Ben-Ari, William Chismar, Thomas Horan

Introduction to Learning Health Systems Minitrack .................................................................3297
Kevin Sullivan, Alon Y. Ben-Ari, Thomas Horan, and William Chismar

A Bayesian Network Approach to Classifying Bad Debt in Hospitals ........................................3298
Donghui Shi, Jozef Zurada, and Jian Guan

Digital Knowledge Objects and Digital Knowledge Object Clusters: Unit Holdings in a Learning Health System Knowledge Repository .............................................................3308
Allen J Flynn, Wei Shi, Rocky Fischer, and Charles P. Friedman

Geographical and Socioeconomic Disparity Analysis — An Empirical Study of Hypertension and Its Comorbidities in China .................................................................3318
James Ma, Jiaojiao Wang, Jiaqi Liu, and Zhidong Cao

Institutional Barriers Against Innovation Diffusion: From the Perspective of Digital Health Startups .................................................................3328
Shi Ying Lim and Edward G. Anderson Jr.

Mobile Applications and Emerging Technologies for Health Management and Wellness — Minitrack Chairs: Freimut Bodendorf, Carolin Durst, Nilmini Wickramasinghe

Introduction to the Minitrack on Mobile Applications and Emerging Technologies for Health Management and Wellness .................................................................3338
Freimut Bodendorf, Nilmini Wickramasinghe, and Carolin Durst

Ambient Intelligence Based Context-Aware Assistive System to Improve Independence for People with Autism Spectrum Disorder .................................................................3339
Ziying Tang, Jin Guo, Sheng Miao, Subrata Acharya, and Jinjuan Heidi Feng

Behavior Change Support for Physical Activity Promotion: A Theoretical View on Mobile Health and Fitness Applications .................................................................3349
Andreas Hamper, Jonathan Wendt, Christian Zagel, and Freimut Bodendorf

Designing a Game to Reduce Stress for Congestive Heart-Failure (CHF) Patients .................................................................3359
Ala Alluhaidan and Miloslava Plachkinova

Digital Engagement, Self-Management, and Shifting the Locus of Control: A mHealth Program for People with Type 2 Diabetes .................................................................3369
Sally Burford, Sora Park, Morris Carpenter, Paresh Dawda, and John Burns

Effects of Journaling Dietary Intake App on the Health Outcomes of Chronic Kidney Disease Stage 3B-5 .................................................................3379
Jei-Fuu Chen, Ling-Ling Wu, and Seng-Cho Chou

Wearable Health Monitors and Physician-Patient Communication: The Physician's Perspective .................................................................3389
Joanne R. Loos and Elizabeth J. Davidson
Technologies for Clinical Decision-Making, Interventions, and Wellness — Minitrack Chairs: Janet Brigham, Benjamin Schooley, Rochelle Rosen, Beth Bock

Introduction to Technologies for Clinical Decision-Making, Interventions, and Wellness

Minitrack

Janet Brigham, Benjamin Schooley, Rochelle Rosen, and Beth Bock

Development of the Mobile Phone Attachment Scale

Beth C. Bock, Herpreet Thind, Joseph L. Fava, Kristen Walaska, Nancy Barnett, Rochelle Rosen, Regina Traficante, and Ryan Lantini

How Do Business Analytics and Business Intelligence Contribute to Improving Care Efficiency?

Hoda Moghimi, Stephen Vaughan, Steven McConche, and Nilmini Wickramasinghe

Ingestible Biosensors for Real-Time Medical Adherence Monitoring: MyTMed

Peter R. Chai, Rochelle K. Rosen, and Edward W. Boyer

Mobile Health Monitoring: Development and Implementation of an App in a Diabetes and Hypertension Clinic

Anu Banerjee, R. A. Ramanujan, and Saligrama Agnihothri

Technologies for Healthy Aging — Minitrack Chairs: Aaron Crandall, Diane Cook, Maureen Schmitter-Edgecombe

Introduction to the Technologies for Healthy Aging Minitrack

Aaron S. Crandall, Diane J. Cook, and Maureen Schmitter-Edgecombe

Adherence to Medical Recommendations and Treatments by Elderly Patients: Useful Web Services Addressing This Challenge

Homer Papadopoulos and Antonis Korakis

Predicting Adult Children’s Decisions to Use Online Elderly Health Information for Their Aged Parents

Yukun Bao, Md. Rakibul Hoque, and Shiyu Wang

Predictive Analytics Dashboard for Monitoring Patients in Advanced Stages of COPD

Riad Alharbey

Prototyping a Health and Wellbeing Platform: An Action Design Research Approach

Wally Keijzer-Broers, Lucas Florez-Atehortua, and Mark de Reuver

User Experience Design for Health and Wellness — Minitrack Chairs: Richard Burkhard, Ann Fruhling, Soussan Djamasbi

Introduction to User Experience Design for Health and Wellness Minitrack

Ann Fruhling, Richard Burkhard, and Soussan Djamasbi

Design Implications of User Experience Studies: The Case of a Diabetes Wellness App

Bengisu Tulu, Diane Strong, Lei Wang, Qian He, Emmanuel Agu, Peder Pedersen, and Soussan Djamasbi

Insights from the Design and Evaluation of a Personal Health Dashboard

Ashley Colley, Kirsi Halttu, Marja Harjumaa, and Harri Oinas-Kukkonen
Visual Complexity and Figure-Background Color Contrast of E-Commerce Websites: Effects on Consumers' Emotional Responses .................................................................3594
   Sheng-Wei Lin, Louis Yi-Shih Lo, and Travis K. Huang

Why Consumers Go to Online Grocery: Comparing Vegetables with Grains ..........................................................3604
   Chunghan Kang, Junghoon Moon, Taekyung Kim, and Youngchan Choe


Introduction to the Global, International, and Cross-Cultural Issues in IS Minitrack ..............................................3614
   Pnina Fichman, Edward W. N. Bernroider, and Erran Carmel

A Comparative Study of National Culture and Innovation: Effects of Cultural Dimensions on Traditional Innovation and Online Innovation ..........................................................3615
   Jongwook Kwon, Dan Kim, and Chang E. Koh

Gender and Job Satisfaction of Information Technology Professionals in Poland ............................................3625
   Jolanta Kowal and Narcyz Roztocki


Introduction to the Minitrack on Innovative Behavioral IS Security and Privacy Research .......................................3635
   Merrill Warkentin, Anthony Vance, and Allen C. Johnston

An Exploratory Study on Behavioral and Emotional Coping with IT-Enabled Government Surveillance .................................................................3636
   Hanieh Moshki and Henri Barki

Consumers' Expectations of Fair Data Collection and Usage — A Mixed Method Analysis ........................................3646
   Antje Niemann and Manfred Schwaiger

CPasswords: Leveraging Episodic Memory and Human-Centered Design for Better Authentication .................................................................3656
   L. Jean Camp, Jacob Abbott, and Siyu Chen

Investigating Users' Reaction to Fine-Grained Data Requests: A Market Experiment ..........................................................3666
   Nicole Eling, Siegfried Rasthofer, Max Kolhagen, Eric Bodden, and Peter Buxmann

Measuring the Human Factor in Information Security and Privacy ..........................................................3676
   Marc J. Dupuis, Robert E. Crossler, and Barbara Endicott-Popovsky

Measuring Source Credibility of Social Engineering Attackers on Facebook ..........................................................3686
   Abdullah Algarni, Yue Xu, and Taizan Chan

Privacy and Identity Theft Recovery Planning: An Onion Skin Model ..........................................................3696
   Tawfiq Alashoor, Richard Baskerville, and Ruilin Zhu

Real or Spiel? A Decision Tree Approach for Automated Detection of Deceptive Language-Action Cues ..........................................................3706
   Shuyuan Mary Ho, Jeffrey T. Hancock, Cheryl Booth, Xiwen Liu, Muye Liu, Shashank S. Timmarajus, and Mike Burmester
Validating Common Characteristics of Malicious Insiders: Proof of Concept Study ......................................................3716
  Nan (Peter) Liang and David Biros

Mining, Analyzing, and Visualizing Web Content and Usage — Minitrack Chair: Dave King
Introduction to the Mining, Analysis and Visualization of Web Content and Usage
  David King
Minitrack ........................................................................................................................................................................3727
  David King
Developer Behavior and Sentiment from Data Mining Open Source Repositories .........................................................3729
  William N. Robinson, Tianjie Deng, and Zirun Qi
EventPanorama: A Framework for Event Detection and Visualization from Online News ........................................3739
  Chen Zhang, Hao Wang, Wei Wang, Cuixia Ma, Jingjing Li, Yibo Wang, and Fanjiang Xu
Scaleable Knowledge Extraction and Visualization for Web Intelligence .................................................................3749
  Arno Scharl, Albert Weichselbraun, Max Göbel, Walter Rafelsberger, and Ruslan Kamolov
Taking the Measure of National Bandwidths: Evolving Patterns of the International Digital Divide for 1986-2013 ........................3758
  Martin Hilbert

Online Games and Game-Like Systems — Minitrack Chairs: Kafui Monu, Paul Ralph, Xi Zhang
Introduction to the Online Games and Game-Like Systems Minitrack .................................................................3768
  Kafui Monu, Jacky Xi Zhang, and Paul Ralph
A Study of Digital Game Addiction from Aggression, Loneliness and Depression Perspectives ............................................................................................................................3769
  Eui Jun Jeong, Dan J. Kim, Dong Min Lee, and Hye Rim Lee
“It Was More Than Just the Game, It Was the Community”: Social Affordances in Online Games ..................................................3781
  Nicole Crenshaw and Bonnie Nardi
Role of Internal Health Belief, Catharsis Seeking, and Self-Efficacy in Game Players' Aggression .................................................................3791
  Hye Rim Lee, Eui Jun Jeong, and Joo Woo Kim
Understanding Perceived Enjoyment in Mobile Game Context .............................................................................................3801
  Jani Merikivi, Duyen Nguyen, and Virpi Kristiina Tuunainen

Social Shopping: The Good and Not so Good — Minitrack Chairs: Gabrielle Peko, Shahper Vodanovich, David Sundaram
Introduction to the Social Shopping Minitrack ................................................................................................................3811
  Gabrielle Peko, Shahper Vodanovich, and David Sundaram
A Study of the Effects of Social Factors and Innovation Characteristics on Search Effort and Uncertainty in Mobile App Adoption ....................................................................................................................................3812
  Fengkun Liu, Alan A. Brandyberry, Greta Polites, Mary Hogue, and Tuo Wang
Dynamic Organizational Learning with IoT and Retail Social Network Data .................................................................3822
   Wei Zhou, Frederique Alexandre-Bailly, and Selwyn Piramuthu

Inter-Generational Comparison of Social Media Use: Investigating the Online Behavior
of Different Generational Cohorts .................................................................................................................................3829
   Kaja J. Fietkiewicz, Elmar Lins, Katsiaryna S. Baran, and Wolfgang G. Stock

Using Social Media to Manage Customer Complaints: A Preliminary Study .................................................................3839
   Hua (Jonathan) Ye and Arvind Tripathi

The Diffusions, Impacts, Adoption and Usage of ICTs upon Society —
Minitrack Chairs: Jyoti Choudrie, Sherah Kurnia, Shahper Vodanovich

Introduction to the Diffusion, Impacts, Adoption and Usage of ICTs upon Society
Minitrack .........................................................................................................................................................................3847
   Jyoti Choudrie, Sherah Kurnia, and Shahper Vodanovich

Affordable Broadband: Bridging the Global Digital Divide, a Social Justice Approach .................................................................3848
   Joseph W. Weiss, David J. Yates, and Girish J. Jeff Gulati

Gender Differences in Online Dating: What Do We Know So Far? A Systematic
Literature Review ..........................................................................................................................................................3858
   Olga Abramova, Annika Baumann, Hanna Krasnova, and Peter Buxmann

How and Why Users Use Social TV Systems? A Systematic Review of User Studies .................................................................3868
   John Robert Bautista, Trisha T. C. Lin, and Yin-Leng Theng

The Adoption of IBM’s Spoken Web in Information Poor Communities: A Pilot Study
with Farmers in Gujarat, India ........................................................................................................................................3878
   InduShobha Chengalur-Smith, Devendra D. Potnis, and Gaurav Mishra

Theories of the Digital Divide: Critical Comparison ........................................................................................................3888
   James Pick and Avijit Sarkar

Understanding the Pain: Examining Individuals’ Online Reputation Management
Behaviour and Its Obstacles — A Grounded Theory ........................................................................................................3898
   Shuzhe Yang

Unfolding the Types of Organizational Inertia in Information Systems Adoption ........................................................................3908
   Tapani Rinta-Kahila, Esko Penttinen, and Anssi Nevalainen

The Internet of Everything: Connecting People, Things, and Data — Minitrack Chairs: Jan Kietzmann, Karen Robson

Introduction to the Internet of Everything: Connecting People, Things, and Data
Minitrack .........................................................................................................................................................................3918
   Jan Kietzmann and Karen Robson

Augmented Reality Apparel: An Appraisal of Consumer Knowledge, Attitude
and Behavioral Intentions ........................................................................................................................................3919
   Heather F. Ross and Tina Harrison

Design Principles for Industrie 4.0 Scenarios ................................................................................................................3928
   Mario Hermann, Tobias Pentek, and Boris Otto
Transformation Towards Cloud Computing — Minitrack Chair: Mohamed Makhlouf

Cloud Supply Chain Resilience Model: Development and Validation ..............................................................3938
   Andrea Herrera and Lech Janczewski

Determinants of the Decision to Transform Towards Cloud: An Exploratory Analysis of 225 CISCO Case Studies ........................................................................................................3948
   Mohamed Makhlouf, Oihab Allal-Chérif, and Nathalie Dumas

Digital Business Ecosystem Transformation — Towards Cloud Integration ............................................................3959
   Kari Korpela, Karri Mikkonen, Jukka Hallikas, and Mikko Pynnönen

Refuse to Walk on Clouds: Why Firms Still do Not Use Cloud Computing — An Empirical Study of Barriers and Enhancers ........................................................................................................3969
   Markus Siepermann, Arbnesh Sutaj, Patrick Luebbecke, and Richard Lackes

To Reach the Clouds: Application of Topic Models to the Meta-Review on Cloud Computing Literature .................................................................................................................................................3979
   Bikesh Raj Upreti, Aleksandre Asatiani, and Pekka Malo

Transition to the Cloud: A Vendor Perspective ........................................................................................................3989
   Jonas Hedman and Xiao Xiao

What Drives Users to Use CRM in a Public Cloud Environment? — Insights from European Experts ..............................................................................................................................................3999
   Ralf-Christian Häerting, Michael Möehring, Rainer Schmidt, Christopher Reichstein, and Barbara Keller

Knowledge Innovation and Entrepreneurial Systems Track — Track Chairs: Murray Jennex and Dave Croasdell

Introduction to the Knowledge Innovation and Entrepreneurial Systems Track .......................................................4009
   Dave T. Croasdell and Murray Jennex

Confidentiality, Integrity, and Availability of Knowledge, Innovation, and Entrepreneurial Systems — Minitrack Chairs: Alexandra Durcikova, Murray Jennex

Introduction to Confidentiality, Integrity, and Availability of Knowledge, Innovation, and Entrepreneurial Systems Minitrack ........................................................................................................................................4010
   Alexandra Durcikova and Murray E. Jennex

Information Security Capacity Building in Community-Based Organizations: Examining the Effects of Knowledge Transfer ........................................................................................................4011
   Janine L. Spears and Tonia San Nicolas-Rocca

Knowledge Sharing and Knowledge Security in Finnish Companies ......................................................................4021
   Ilona Ilvonen, Aki Alanne, Nina Helander, and Hannele Väyrynen

Protecting Knowledge in the Financial Sector: An Analysis of Knowledge Risks Arising from Social Media ..........................................................................................................................4031
   Sarigianni Christina, Thalmann Stefan, and Manhart Markus
The Revival of Ancient Information Security Models, Insight in Risks and Selection of Measures .................................................................4041
  Stef Schinagl, Ronald Paans, and Keith Schoon

Designing and Deploying Advanced Knowledge Systems — Minitrack Chairs: Stefan Smolnik, Timo Käkölä

Introduction to the Designing and Deploying Advanced Knowledge Systems Minitrack .................................................................4051
  Stefan Smolnik and Timo Käkölä

A Knowledge Perspective on Big Data by Joining Enterprise Modeling and Data Analyses .................................................................4052
  Hans-Georg Fill and Florian Johannsen

Designing a Personal Information Transaction Object .................................................................4062
  Ross Farrelly and Eng Chew

Use Cases as a Means to Support the Appropriation of Enterprise Social Software .................................................................4072
  Christian Herzog and Alexander Richter

Innovation Uncertainties and Socio-Political Legitimization — Minitrack Chairs: Vernon Bachor, Jeremy Hall

Introduction to Innovation Uncertainties and Socio-Political Legitimization Minitrack .................................................................4082
  Vernon Bachor and Jeremy Hall

Almost an MNC: Bitcoin Entrepreneurs' Use of Collective Resources and Decoupling to Build Legitimacy .................................................................4083
  Claire Ingram and Marcel Morisse

Militarization as a Socio-Political Context for Entrepreneurial Innovation .................................................................4093
  Todd M. Inouye

Knowledge Economics — Minitrack Chairs: Carsten Brockmann, Narcyz Roztocki

Introduction to Knowledge Economics Minitrack .................................................................4103
  Carsten Brockmann and Narcyz Roztocki

Fostering GCC’s Knowledge Economy through ICT: Research in Progress .................................................................4104
  Kamla Ali Al-Busaidi

Detection and Visual Inspection of Highly Obfuscated Plagiarisms .................................................................4113
  Andreas Schmidt, Sören Bühler, Robert Senger, Steffen Scholz, and Markus Dickerhof

Mobbing and Burnout in Emerging Knowledge Economies: An Exploratory Study in Poland .................................................................4123
  Jolanta Kowal and Adam Gurba

Towards Mobile Modeling of Knowledge and Business Processes .................................................................4133
  René Peinl, Eldar Sultanow, and Carsten Brockmann
Managing Knowledge for Innovation and Agility — Minitrack Chairs: Suzanne Zyngier, Daniel Samson, Marianne Gloet

Introduction to the Managing Knowledge for Innovation and Agility Minitrack ..........................................................4231
Suzanne Zyngier, Marianne Gloet, and Daniel Samson

Clustering the Results of Brainstorm Sessions: Applying Word Similarity Techniques
to Cluster Dutch Nouns .............................................................................................................................................4232
Chintan Amrit and Jeroen Hek

Enterprise Social Networks from a Manager’s Perspective ..........................................................4242
Alexander Richter, Corinna Hetmank, Julia Klier, Mathias Klier, and Maria Müller

Competence Management as a Dynamic Capability: A Strategic Enterprise System
for a Knowledge-Intensive Project Organization .......................................................................................................4252
Erkka Niemi and Sami Laine

Designing an Idea Screening Framework for Employee-Driven Innovation ..........................................................4262
Raffaele Fabio Cirillo, Alexander Richter, and Gerhard Schwabe

Idea Generation by Employees and External Participants in Innovation Competitions .............................................4272
Stefan Steiglitz and Simon Hassannia

Knowledge and Innovation Management: Developing Dynamic Capabilities to Capture
Value from Innovation ................................................................................................................................................4282
Marianne Gloet and Danny Samson

The Workarounds Process as a Source of Knowledge Creation and Management .........................................................4292
Patrick Boudreau, Dragos Vieru, Gilbert Paquette, and Michel Heon

Organizational Learning — Minitrack Chair: Julee Hafner

Introduction to the Organizational Learning Minitrack ...............................................................................................4302
Julee H. Hafner

An Enhanced Theory of Learning Including Learning from the Future .................................................................................4303
Alexander Kaiser

Towards a Unified Theory of Knowledge Management (KM) ...........................................................................................4313
Philip William Sisson and Julie JCH Ryan

Reports from the Field — Minitrack Chairs: Vincent Scovetta, Timothy Ellis

Introduction to Reports from the Field Minitrack ........................................................................................................4323
Vincent Scovetta and Timothy J. Ellis

Does Incomplete Unlearning Impact Medical Errors? ......................................................................................4324
Julee H. Hafner

Needs to Know: Validating User Needs for a Proposed FBI Academy Knowledge Management System ......................4334
J. Richard Kiper

Using Knowledge Management to Assist in Identifying Human Sex Trafficking ..........................................................4344
Marisa Hultgren, Murray E. Jennex, John Persano, and Cezar Ornatowski
The Organizational Use of IT-Mediated Crowds — Minitrack Chairs: Jan Kietzmann, John Prpić

Introduction to the Organizational Use of IT-Mediated Crowds Minitrack .................................................................4354

Jan Kietzmann and John Prpić

Choosing the Right Crowd: An Iterative Process for Crowd Specification in Crowdsourcing Initiatives .................................................................4355

Eoin Cullina, Kieran Conboy, and Lorraine Morgan

Crowd Science: Measurements, Models, and Methods ............................................................................................4365

John Prpić and Prashant Shukla

Gamification in Crowdsourcing: A Review .................................................................................................................4375

Benedikt Morschheuser, Juho Hamari, and Jonna Koivisto

Tools and Software for Knowledge Management — Minitrack Chairs: Alexandra Kees, Karlheinz Kautz

Introduction to the Tools and Software for Knowledge Management Minitrack .................................................................4385

Alexandra Kees and Karlheinz Kautz

An Interface for Assisted Curation of Knowledge Bases from Unstructured Text .................................................................4386

Jeremy Wright, Gabriel Murray, and Ben Hachey

Automated Taxonomy Extraction from Semantic Business Process Models ............................................................................................4394

Sergio de Cesare, Damir Juric, and Mark Lycett

Ease of Attribution, Ease of Licensing, and Integration of Creative Works ..........................................................................................................................4404

Elahe Javadi, Jasmeet Sasan, and Beth Ladd

Organizational Systems and Technology Track — Chair: Hugh Watson

Introduction to the Organizational Systems and Technology Track ..................................................................................4412

Hugh J. Watson

Advances in Design Research for Information Systems — Minitrack Chairs: Tuure Tuunanen, Joseph Walls, George Widmeyer

Introduction to the Advances in Design Research for Information Systems Minitrack ..................................................4413

Tuure Tuunanen, Joseph Walls, and George Widmeyer

An Information Systems Design Theory for Adaptable E-Learning ..................................................................................4414

Amir Haj-Bolouri, Lennarth Bernhardsson, Patrik Bernhardsson, and Lars Svensson

Applying Evaluations While Building the Artifact — Experiences from the Development of Process Model Complexity Metrics ..................................................................................4424

Daniel Braunngel and Susanne Leist

Beyond Rigor and Relevance: Exploring Artifact Resonance ..................................................................................4434

Andreas Drechsler, Alan R. Hevner, and T. Grandon Gill

Closing the Loop: Evaluating a Measurement Instrument for Maturity Model Design ..................................................4444

David Raber, Johannes Epple, Robert Winter, and Marcus Rothenberger
On Experiments in Design Science Research and Theory Development: A Literature Review

Henrik Kampling, Michael Klesel, and Björn Niehaves

Pre-Theory Design Frameworks and Design Theorizing

Richard Baskerville and Vijay Vaishnavi

Toward a Design Theory for Green Information Systems

Jan Recker

Analytic and Decision Support for Ecosystems — Minitrack Chairs: Martha Russell, Kaisa Still, Rahul Basole

Introduction to Analytics and Decision Support for Ecosystems Minitrack

Martha G. Russell, Kaisa Still, and Rahul C. Basole

A Study of Financial Contagion in Interbank System

Xian Cheng, Stephen Shaoyi Liao, Haichuan Zhao, Zhongsheng Hua, Xinbo Sun, and Yujing Xu

Crowdfunding in the Development of Social Media Fanbase — Case Study of Two Competing Ecosystems

Jari Jussila, Karan Menon, Raghava Rao Mukkamala, Lester Allan Lasrado, Abid Hussain, Ravi Vatrapu, Hannu Kärkkäinen, and Jukka Huhtamäki

Exploring Innovation Ecosystems as Networks: Four European Cases

Jukka Huhtamäki and Neil Rubens

Insights from Social Network Analysis & 8212; Case Board Interlocks in Finnish Game Industry

Arho Suominen, Nina Rilla, Juha Oksanen, and Kaisa Still

Using Skewness and Kurtosis Coefficients of Industry Samples of IT Managerial Control Ratios for Analyzing Competitive Dynamics in Relation to IT Spending

Vlad Krotov


Introduction to the Business and Enterprise Architecture Minitrack: Processes, Approaches and Challenges

Frank Armour and Stephen Kaisler

An Application of Semantic Techniques to the Analysis of Enterprise Architecture Models

Gonçalo Antunes, José Borbinha, and Artur Caetano

An Executable Model Driven Framework for Enterprise Architecture Application to the Smart Grids Context

Rachida Seghiri, Frédéric Boulanger, Claire Lecocq, and Vincent Godefroy

Aligning Architectures of Business and Software: Software Driven by Business Process Models and Its User Interface

Ralph Hoch, Hermann Kaindl, Roman Popp, and Christian Zeidler
Enterprise Architecture Analysis and Network Thinking: A Literature Review ..........................................................4566
Alixandre Santana, Kai Fischbach, and Hermano Moura

Identifying Misalignment of Goal and Strategies Across Organizational Units by Interpretive Structural Modeling ..........................................................4576
Yohei Aoki, Takanobu Kobori, Hironori Washizaki, and Yoshiaki Fukazawa

Organizational Subcultures and Enterprise Architecture Effectiveness: Findings from a Case Study at a European Airport Company ...................................................................................4586
Hella Faller, Sybren de Kinderen, and Christina Constantinidis

**Digital Innovation — Minitrack Chairs: Nicholas Berente, Kalle Lyytinen, Youngjin Yoo**

Introduction to the Digital Innovation Minitrack ..................................................................................................4596
Nicholas Berente, Kalle Lyytinen, and Youngjin Yoo

Algorithmic Agency in Information Systems: Research Opportunities for Data Analytics of Digital Traces ..........................................................................................4597
Jonas Valbjørn Andersen, Aron Lindberg, Rikard Lindgren, and Lisen Selander

Corporate Crowdfunding: Does Being Part of a University Affect a Platform’s Operations? ..........................................................4606
Claire Ingram, Emmanuelle Vaast, and Robin Teigland

Innovating with Digital Action Repertoires at Amnesty International: Exploring Role Ambiguity ..........................................................4614
Lisen Selander and Sirkka Jarvenpaa

Putting Phronesis to Work in Digital Innovation ..................................................................................................4624
Lena Hylving and Dina Koutsikouri

Reinventing the Platform Core Through Acquisition: A Case Study ........................................................................4634
Gustav Toppenberg, Stefan Henningsson, and Ben Eaton

Strategy Blindness as Disciplined IT-Use Practice: Looking Past the ‘Unintended and Unexpected’ through the Practice Lens ..........................................................................................4644
Viktor Arvidsson

**Emerging Technologies and Innovations for Development — Minitrack Chairs: Sajda Qureshi, Gerald Grant, Anthony Ming**

Introduction to the Emerging Technologies and Innovations for Development Minitrack ..........................................................4654
Sajda Qureshi, Gerald Grant, and Anthony Ming

Emerging Technology Use in Very Small Island States: A Tenuous Relationship between Average Information and Communication Technology (ICT) Usage and Per Capita Gross Domestic Product (GDP) Growth ..........................................................................................4655
Sajda Qureshi and Lotfollah Najjar

Is Consensus a Viable Concept to Justify Use of Online Collaborative Networks in Multi-stakeholder Governance? ..........................................................................................4665
William Tibben, Robert B. K. Brown, Ghashan Beydoun, and Reza Zamani
Enterprise System Integration: Issues and Answers — Minitrack Chairs: Marinos Themistocleous, Gail Corbitt, Paulo Rupino de Cunha

Introduction to Enterprise System Integration: Issues and Answers Minitrack .................................................................4675

Marinos Themistocleous, Gail Corbitt, and Paulo Rupino de Cunha

A Comparison between Organizational Stakeholders’ and External Consultants’ Perceptions on CSFs Affecting ERP Life Cycle Phases ........................................................................................................4676

Musleh Alsulami, Helana Scheepers, and Md. Mahbubur Rahim

Enterprise Systems and Innovation — An Empirical Investigation ..........................................................................................4686

Niki Kyriakou, Euripides Loukis, and Spyros Arvanitis

Integration Obstacles During ERP Development ................................................................................................................4697

Negin Banaeianjahromi, Tommi Kähkönen, Aki Alanne, and Kari Smolander

The Fragmentation of Theoretical Contributions in ERP Research: An Exploratory Study .................................................................4707

Saïd Assar and Redouane El Amrani

Human Capital and Technology in a Global Marketplace — Minitrack Chairs: Cynthia Riemenschneider, Deborah J. Armstrong

Introduction to the Minitrack on Human Capital and Technology in a Global Marketplace .............................................................4717

Cynthia Riemenschneider and Deborah J. Armstrong

Being Useful: How Information Systems Professionals Influence the Use of Information Systems in Enterprises ..............................................................................................................................................4719

Hadi Karimikia, Harminder Singh, and Karin Olesen

How Do Black Men Succeed in IT Careers? The Effects of Capital ..........................................................................................4729

K. D. Joshi, Lynette Kvasny, P. Unnikrishnan, and Eileen Trauth

Impacts of Information Technologies on Consumer Activities and on Business Operations — Minitrack Chairs: Avi Seidmann, Yabing Jiang, Jie Zhang

Introduction to the Impacts of Information Technologies on Consumer Activities and on Business Operations Minitrack ..............................................................................................................4739

Abraham Seidmann, Yabing Jiang, and Jie Zhang

Disclosing the Role of IT Suppliers as Digital Innovation Enablers for SMEs: A Strategy Analysis of the European IT Sales Channel .............................................................................................................4740

Antonio Ghezzi and Raffaello Balocco

Experience Me! The Impact of Content Sampling Strategies on the Marketing of Digital Entertainment Goods .................................................................................................................................................4750

Ai Phuong Hoang and Robert J. Kaufman

Improving Open Access Policy for Scheduling Outpatient Appointments .........................................................................................4760

Balaraman Rajan and Abraham Seidmann

Influential Aspects of the Smart City ................................................................................................................................................4764

Cristina Marinovici, Harold Kirkham, and Steve Widergren
Presentation Styles on User Perceived Usefulness in Opinion Summarization ........................................4773
Xiaojun Yuan, Ning Sa, Grace Begany, and Huahai Yang

Understanding the Sharing Economy — Drivers and Impediments for Participation in Peer-to-Peer Rental ........................................................................................................4782
Florian Hawlitschek, Timm Teubner, and Henner Gimpel

**Information Security and Privacy — Minitrack Chairs: Tung Bui, Eric Clemons, Tawei Wang**

Introduction to the Information Security and Privacy Minitrack ................................................................4792
Tung Bui, Eric Clemons, and David Wang

A Secure Business Process Modelling For Better Alignment between Business and IT ................................4793
Youseef Alotaibi

Jeffry Babb, Mark Keith, and Paul Steinbart

Coercive, Normative, and Mimetic Influences on the Assimilation of BCM in Outsourcing Relationships ..................................................................................................................4813
Simon Erb and Gerhard F. Knolmayer

Perverse Effects in Defense of Computer Systems: When More is Less ................................................4823
Josephine Wolff

Sweet Idleness, but Why? How Cognitive Factors and Personality Traits Affect Privacy-Protective Behavior ..........................................................................................................................4832
Christian Matt and Philipp Peckelsen

The Impact of ISO 27001 Certification on Firm Performance ..................................................................4842
Carol Hsu, Tawei Wang, and Ang Lu

Why Companies Change Privacy Policies: A Principal-Agent Perspective .............................................4849
Wallace Chipidza, Dorothy Leidner, and Debra Burleson

**Information Systems Procurement and Benefits Realization — Minitrack Chairs: Samuli Pekkola, Tero Päivärinta**

Introduction to the Information Systems Procurement and Benefits Realization Minitrack .........................4859
Samuli Pekkola and Tero Päivärinta

The Contingent Effects of Social Networks on Social Learning in ERP Assimilation ................................4860
Luan Gao, Luning Liu, Yuqiang Feng, and Qing Hu

Together We Stand, Divided We Fall — Analyzing Information Systems Acquisition as Service ..............................................................................................................................................4870
Pasi Hellsten, Aki Alanne, Samuli Pekkola, and Tuure Tuunanen

Valuing the Advantage of Early Termination: Adopting Real Options Theory for SaaS .................................4880
Andreas Jede and Frank Teuteberg
IT Governance and Its Mechanisms — Minitrack Chairs: Wim Van Grembergen, Steven De Haes

Introduction to the IT Governance and Its Mechanisms Minitrack .................................................................4890
  Wim Van Grembergen and Steven De Haes

The CIO Leadership Mosaic — Results from a Qualitative Survey in the Silicon Valley and San Francisco Bay Area .........................................................................................................................4891
  Karsten Zimmermann, Jurate Petrikina, and Nils Schröder

Dotting the I and Crossing (out) the T in IT Governance: New Challenges for Information Governance .......................................................................................................................................4901
  Hans Borgman, Hauke Heier, Bouchaib Bahli, and Thomas Boekamp

How Business Strategy and Changes to Business Strategy Impact the Role and the Tasks of CIOs: An Evolutionary Model ........................................................................................................................................4910
  Tomi Dahlberg, Päivi Hokkanen, and Mike Newman

Individual IT Roles in Business — IT Alignment and IT Governance .......................................................................4920
  Heinz-Theo Wagner and J. Meshtaf

IT and Project Management — Minitrack Chairs: Joseph Weiss, Sue Newell, Jacky Swan

Introduction to the IT/Project Management Minitrack ..........................................................................................4930
  Joseph W. Weiss, Sue Newell, and Jacky Swan

Beyond the Border: A Comparative Literature Review on Communication Practices for Agile Global Outsourced Software Development Projects ......................................................................................4932
  Tim Dreesen, Robert Linden, Caroline Meures, Nikolaus Schmidt, and Christoph Rosenkranz

Does Steering Committee Information Processing Capacity Influence Project Success in Enterprise-Wide System Implementations ........................................................................................................4942
  Kris Murphy, Kalle Lyytinen, and Toni Somers

Shaping of Innovative IT Projects through Change Requests: Scoping Factors and Project Outcomes .................................................................................................................. N/A
  Joseph J. Nehme and Shirish C. Srivastava

The Evolution of an Enterprise System Implementation Methodology by Adaptation through Reflexivity .................................................................................................................................4961
  Daniela Mihailescu, Marius Mihailescu, and Sven Carlsson

Towards an Integrative, Multilevel Theory for Managing the Direct and Indirect Impacts of IT Project Success Factors ................................................................................................................4971
  Tomi Dahlberg and Hannu Kivijärvi
## Open Source Application Software — Minitrack Chairs: Alexandra Kees, Taizan Chan, Michael Adams

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to the Open Source Application Software Minitrack</td>
<td>4981</td>
</tr>
<tr>
<td><strong>Alexandra Kees, Taizan Chan, and Michael Adams</strong></td>
<td></td>
</tr>
<tr>
<td>Attributes of Open Source Software Requirements — The Effect of the External Environment and Internal Social Structure</td>
<td>4982</td>
</tr>
<tr>
<td><strong>Deepa Gopal, Aron Lindberg, and Kalle Lyytinen</strong></td>
<td></td>
</tr>
<tr>
<td>Business Applicability of Open Source Customer Relationship Management Systems</td>
<td>4992</td>
</tr>
<tr>
<td><strong>Dominic Raimon Markowski and Alexandra Kees</strong></td>
<td></td>
</tr>
<tr>
<td>Open-Source Development Tools for Domain-Specific Modeling: Results from a Systematic Literature Review</td>
<td>5001</td>
</tr>
<tr>
<td><strong>Bernhard Hoisl and Stefan Sobernig</strong></td>
<td></td>
</tr>
</tbody>
</table>

## Organizational Issues of Business Intelligence, Business Analytics and Big Data — Minitrack Chairs: Olivera R. Marjanovic, Thilini Ariyachandra, Barbara Dinter

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to the Organizational Issues of Business Intelligence, Business Analytics, and Big Data Minitrack</td>
<td>5011</td>
</tr>
<tr>
<td><strong>Olivera Marjanovic, Barbara Dinter, and Thilini Ariyachandra</strong></td>
<td></td>
</tr>
<tr>
<td>Big Data — A Theory Model</td>
<td>5012</td>
</tr>
<tr>
<td><strong>Marco Pospiech and Carsten Felden</strong></td>
<td></td>
</tr>
<tr>
<td>Business Intelligence Capabilities and Effectiveness: An Integrative Model</td>
<td>5022</td>
</tr>
<tr>
<td><strong>Thiagarajan Ramakrishnan, Jiban Khuntia, Abhishek Kathuria, and Terence Saldanha</strong></td>
<td></td>
</tr>
<tr>
<td>Empowering Business Users to Explore Visual Data Through Boundary Objects and Storytelling</td>
<td>5032</td>
</tr>
<tr>
<td><strong>Olivera Marjanovic</strong></td>
<td></td>
</tr>
<tr>
<td>The Impact of Business Intelligence on Corporate Performance Management</td>
<td>5042</td>
</tr>
<tr>
<td><strong>Karin Hartl, Olaf Jacob, Friedrich Lien Mbep, Adheesh Budree, and Louis Fourie</strong></td>
<td></td>
</tr>
<tr>
<td>Towards a Conceptualization of Data Analytics Capabilities</td>
<td>5052</td>
</tr>
<tr>
<td><strong>Giorgi Shuradze and Heinz-Theo Wagner</strong></td>
<td></td>
</tr>
<tr>
<td>Towards an Integrative Big Data Analysis Framework for Data-Driven Risk Management in Industry 4.0</td>
<td>5065</td>
</tr>
<tr>
<td><strong>Tim Niesen, Constantin Houy, Peter Fettke, and Peter Loos</strong></td>
<td></td>
</tr>
<tr>
<td>Crafting Theory to Satisfy the Requirements of Systems Science</td>
<td>5075</td>
</tr>
<tr>
<td><strong>Allen S. Lee and Dionysios S. Demetis</strong></td>
<td></td>
</tr>
<tr>
<td>When are Real-Time Feedback Loops Most Valuable? New Insights from Bandit Simulations of Decision Making in Turbulent Environments</td>
<td>5085</td>
</tr>
<tr>
<td><strong>Joseph W. Clark</strong></td>
<td></td>
</tr>
</tbody>
</table>
Practice-Based IS Research — Minitrack Chairs: Dorothy Leidner, Michael Milovich, Ester Gonzalez

Introduction to Practice-Based IS Research Minitrack ..........................................................................................................................5094
  Dorothy Leidner, Michael Milovich, and Ester Gonzalez

Amazon in the Air: Innovating with Big Data at Lufthansa ......................................................................................................................5096
  Hong-Mei Chen, Roland Schütz, Rick Kazman, and Florian Matthes

Examining the Role of Social Media for Social Development: Lessons from Malaysian Soup Kitchens ...........................................................................................................................................................5106
  Shri Gurumurty, Shan L. Pan, Shamshul Bahri, and Ali Fauzi Ahmad Khan

How to Achieve Sustainable Business IT Alignment — Designing a Circular Organizational Structure at SAAB .............................................................................................................................................................5116
  Jens Ohlsson, Shengnan Han, Mats Hultin, and Björn Rosengren

What Does a Chief Digital Officer Do? Managerial Tasks and Roles of a New C-Level Position in the Context of Digital Transformation ..............................................................................................................................................5126
  Anna Horlacher and Thomas Hess

Social-Technical Issues in Organizational Information Technologies — Minitrack Chairs: Michael Knight, Dawn Medlin, Dragos Vieru

Introduction to Social-Technical Issues in Organizational Information Technologies Minitrack ..........................................................................................................................................................................................5134
  Michael B. Knight, Dragos Vieru, and B. Dawn Medlin

Establishing ICT Governance for Regional Information Infrastructures in Healthcare ..........................................................................................................................................................................................5137
  Gro-Hilde Ulriksen, Rune Pedersen, and Gunnar Ellingsen

Measuring E-Mail Induced Information Overload from a Capacity Perspective: A Research Model and Pilot Test ........................................................................................................................................................................5147
  Nikolai Sobotta and Erik Neßling

The Influence of Organizational Culture on IT Governance Performance: Case of the IT Department in a Large Swedish Company .............................................................................................................................................5157
  Parisa Aasi, Lazar Rusu, and Shengnan Han

The Inter-Organizational Dynamics of a Platform Ecosystem: Exploring Stakeholder Boundaries ...........................................................................................................................................................................5167
  Ted Saarikko, Ulrika H. Westergren, and Tomas Blomquist

Toward an Ontology of Workarounds: A Literature Review on Existing Concepts ........................................................................................................................................................................................................5177
  Nina Röder, Manuel Wiesche, Michael Schermann, and Helmut Krcmar

Introduction to Society, Information, Technology and Economics Minitrack .............................................................5187
  Eric K. Clemons, Rajiv Dewan, Robert J. Kauffman, and Thomas A. Weber

Introduction to the Society, Information, Technology and Economics Minitrack ..........................................................5189
  Eric K. Clemons, Rajiv Dewan, Robert J. Kauffman, and Thomas A. Weber

Competitive Impacts of Software Patents in the IT Industry ........................................................................5190
  Sunghun Chung, Kunsoo Han, Animesh Animesh, and Alain Pinsonneault

Connectivity is Ubiquitous, But is It Beneficial? A Numerical Approach to Assess Individuals' Valuations of Smart Home Systems .......................................................................................................5200
  Matthias Berger, Christian Matt, and Thomas Hess

Modeling Competition in Mandatory Participation Third Party Payer Business Models:
The Complex Case of Sponsored Search .................................................................................................................5210
  Eric K. Clemons and Josh Wilson

Online Trust: An International Study of Subjects’ Willingness to Shop at Online Merchants, Including the Effects of Promises and of Third Party Guarantees ...........................................................5220
  Eric K. Clemons, Josh Wilson, Christian Matt, Thomas Hess, Fei Ren, and Fujie Jin

Optimal Retail in a Sharing Economy ........................................................................................................................5230
  Thomas A. Weber

“Pay as You Go” or “All You Can Eat”? Pricing Methods for Computing and Information Services .....................................................................................................................................................................5239
  Hemant K. Bhargava and Manish Gnagwar

Strategic Network Formation in a Location-Based Social Network: A Topic Modeling Approach ...........................................................................................................................................................................5249
  Gene Moo Lee, Liangfei Qiu, and Andrew B. Whinston

Versioning of Video Games: Go Vertical in a Horizontal Market? ..............................................................................5259
  Debabrata Dey and Atanu Lahiri

Theory and Information Systems — Minitrack Chairs: Dirk Hovorka, Kai Larsen

Introduction to the Theory and Information Systems Minitrack ....................................................................................5269
  Dirk S. Hovorka and Kai R. Larsen

Analyzing the Concept of Affordances in Information Systems ..................................................................................5270
  Karen Stendal, Devinder Thapa, and Arto Lanamäki

Developing a Shared Taxonomy of Workaround Behaviors for the Information Systems Field ...........................................................................................................................................................................5278
  Eruan Zainuddin and Sandy Staples

  Roland M. Mueller
Topics in Organizational Systems and Technology — Minitrack Chairs: Mark Frolick, Kelly Rainer, Jim Ryan

Introduction to Topics in Organizational Systems and Technology Minitrack ...........................................................5298
Mark N. Frolick, Kelly Rainer, and Jim Ryan

Competitive Poaching of Customers in Mobile Service Market ......................................................................................5299
Xiahua Wei and Kevin Zhu

Effects of Information Technology on Team Innovation and Inter-Team Coordination:
An Exploratory Investigation of Process Ambidexterity ...............................................................................................5309
Chanhee Kwak, Junyeong Lee, and Heeseok Lee

Examining the Factors Affecting Corporate Image from Social Networking Fan Page
Usage Using the Elaboration Likelihood Model ...........................................................................................................5319
Soo Il Shin, Dianne J. Hall, Jiahe Song, Kang Bok Lee, and Teresa Lang

How to Build a Cloud Storage Service for Half a Million Users in Higher Education:
Challenges Met and Solutions Found ............................................................................................................................5328
Raimund Vogl, Dominik Rudolph, Anne Thoring, Holger Angenent, Stefan Stieglitz, and Christian Meske

Process Model Representation Layers for Financial Audits ............................................................................................5338
Michael Werner

Understanding Privacy-Control Arrangements Based on a Theory of Interactive Computation in B2C Service Models ..........................................................................................................................5348
Patricia Morizio

Software Technology Track — Track Chairs: Gul Agha and Rick Kazman

Introduction to the Software Technology Track .............................................................................................................5358
Rick Kazman and Gul Agha

Agile and Lean: Organizations, Products and Development — Minitrack Chair: Daniel Greening, Jeff Sutherland, John Tripp

Introduction to the Organizations, Products and Development Minitrack .................................................................5359
Daniel R. Greening, John Tripp, and Jeff Sutherland

Adapting Agile in a Globally Distributed Software Development ..................................................................................5360
Rajeev Kumar Gupta and Prabhulinga Manik Reddy

Agile Base Patterns in the Agile Canon ............................................................................................................................5368
Daniel R Greening

Agile Big Data Analytics Development: An Architecture-Centric Approach .................................................................5378
Hong-Mei Chen, Rick Kazman, and Serge Haziyev

Kaizen Cookbook: The Success Recipe for Continuous Learning and Improvements ....................................................5388
Osama Al-Baik and James Miller

Pair Programming vs. Solo Programming: What Do We Know After 15 Years of Research? ......................................5398
Carolina Alves de Lima Salge and Nicholas Berente
Seeking Technical Debt in Critical Software Development Projects: An Exploratory Field Study
Hadi Ghanbari

Sensemaking and Complexity in Large-Scale Lean-Agile Transformation: A Case Study from Cisco
Ken Power

Transition of Software Maintenance Teams from Scrum to Kanban
Muhammad Ovais Ahmad, Pasi Kuvaja, Markku Oivo, and Jouni Markkula

Towards DevOps in the Embedded Systems Domain: Why is It So Hard?
Lucy Ellen Lwakatare, Teemu Karvonen, Tanja Sauvola, Pasi Kuvaja, Helena Holmström Olsson, Jan Bosch, and Markku Oivo

Using Scrum in Outsourced Government Projects: An Action Research
Thatiany Lima de Sousa, Elaine Venson, Rejane Maria da Costa Figueiredo, Ricardo Ajax Kosloski, and Luiz Carlos Miyadaira Ribeiro Júnior

**Big Data Engineering — Minitrack Chairs: Hong-Mei Chen, Ian Gorton**

Introduction to the Big Data Engineering Minitrack
Hong Mei Chen and Ian Gorton

Big Data as a Service: A Neo-Metropolis Model Approach for Innovation
Hong-Mei Chen, Rick Kazman, Serge Haziyev, Valentyn Kropov, and Dmitri Chtchourov

EPIC-OSM: A Software Framework for OpenStreetMap Data Analytics
Jennings Anderson, Robert Soden, Kenneth M. Anderson, Marina Kogan, and Leysia Palen

**Cybercrimes, Cyber-Physical Innovations, and Emerging Investigation Challenges — Minitrack Chairs: Brad Glisson, Raymond Choo**

Introduction to the Cybercrimes, Cyber-Physical Innovations, and Emerging Investigation Challenges Minitrack
William Bradley Glisson and Kim-Kwang Raymond Choo

Capture the Flag as Cyber Security Introduction
Lucas McDaniel, Erik Talvi, and Brian Hay

Service Set Identifier Geolocation for Forensic Purposes: Opportunities and Challenges
Maxim Chernyshev, Craig Valli, and Peter Hannay

Utilizing the Cloud to Store Hijacked Camera Images
Christos Kynigos, William Bradley Glisson, Todd Andel, and Todd McDonald

**Cybersecurity and Software Assurance — Minitrack Chairs: Luanne Goldrich, Rick Linger, Richard George**

Introduction to Cybersecurity and Software Assurance Minitrack
Luanne Burns Goldrich, Richard George, and Rick Linger

A Unified Model for System Security Engineering Support
Thomas Llansó and Patrick Engebretson
Exploring a Systematic Approach to Malware Threat Assessment ...............................................................5517  
Michele Maasberg, Myung Ko, and Nicole L. Beebe

Online Signature Verification Based on Biometric Features .................................................................5527  
Nan Li, Jiafen Liu, Qing Li, Xubin Luo, and Jiang Duan

Policy Generator (PG): A Heuristic-Based Fuzzer ...............................................................................5535  
Alejandro Felix, Andrew F. Tappenden, and James Miller

SBoxScope: A Meta S-box Strength Evaluation Framework for Heterogeneous  
Confusion Boxes ..................................................................................................................5545  
Abrar Ahmad, Muddassar Farooq, and Muhammad Amin

Using the eR&D Approach to Pilot Deployment and Assessment in DHS ..............................................5554  
AJ Risko, Luanne Goldrich, Nykia Jackson, Robert Gatlin, Brian Gattoni, and Richard Linger

**CyberWarfare: Offensive and Defensive Software Technologies — Minitrack Chairs: Brian Hay, Steven LaFountain**

Introduction to the CyberWarfare: Offensive and Defensive Software Technologies  
Minitrack ...............................................................................................................................................5560  
Brian Hay and Steven LaFountain

Defensive Cyber Operations in a Software-Defined Network ...........................................................5561  
Thomas Parker, Jeremy Jones, Joshua Mayberry, Gassium Chanman, Zachary Staples,  
John McEachen, and Murali Tummala

Mitigating 0-Days through Heap Techniques — An Empirical Study ....................................................5569  
Lucas McDaniel and Kara Nance

Mobile Konami Codes: Analysis of Android Malware Services Utilizing Sensor  
and Resource-Based State Changes .................................................................................................5578  
Jacob Boomgaarden, Joshua Corney, Holly Whittaker, George Dinolt, and John McEachen

Strategic Implications of Offense and Defense in Cyberwar .................................................................5588  
Wade L. Huntley

**Digital Forensics — Education, Research, and Practice — Minitrack Chairs: Kara Nance, Matt Bishop**

Introduction to Digital Forensics — Education, Research and Practice Minitrack ....................................5596  
Kara Nance and Matt Bishop

An Android Social App Forensics Adversary Model ............................................................................5597  
Abdullah Azfar, Kim-Kwang Raymond Choo, and Lin Liu

Text-Based Document Similarity Matching Using Sdtext .......................................................................5607  
Clay Shields

Using Multimedia Presentations to Enhance the Judiciary’s Technical Understanding  
of Digital Forensic Concepts: An Indonesian Case Study ...................................................................5617  
Niken Dwi Wahyu Cahyani, Ben Martini, and Kim-Kwang Raymond Choo
IS Risk and Decision-Making — Minitrack Chairs: Dan Port, Joe Wilf

Introduction to IS Risk and Decision-Making Minitrack .................................................................5627

Dan Port and Joel Wilf

A User-Centered Approach to Phishing Susceptibility: The Role of a Suspicious
Personality in Protecting Against Phishing ..................................................................................5628

Brynne Harrison, Arun Vishwanath, and Raghav Rao

Decisions and Disasters: Modeling Decisions that Contribute to Mishaps ..................................5635

Joel Wilf and Dan Port

Developing a Value-Based Methodology for Satisfying NASA Software Assurance
Requirements ..................................................................................................................................5642

Daniel Port, Joel Wilf, Madeline Diep, Carolyn Seaman, and Martin Feather

Optimizing Business Processes Compliance Using an Evolvable Risk-Based Approach ...........5652

Sérgio Guerreiro, Rui Pedro Marques, and Khaled Gaaloul

Project Risk Management Incorporating Knight, Ellsberg & Kahneman .......................................5662

John Prpić

Which IT Security Investments Will Pay Off for Suppliers? Using the Kano Model
to Determine Customers’ Willingness to Pay ................................................................................5672

Rabea Sonnenschein, André Loske, and Peter Buxmann

Mobile App Development — Minitrack Chairs: Tim A. Majchrzak, Henning Heitkoetter

Introduction to the Mobile App Development Minitrack .................................................................5682

Tim A. Majchrzak and Henning Heitkoetter

An Investigation of Usability of Push Notifications on Mobile Devices for Novice
and Expert Users ..............................................................................................................................5683

Wen Yong Chua and Klarissa T. T. Chang

Developing Apps for Visually Impaired People: Lessons Learned from Practice .......................5691

Eduardo Ghidini, Wagner D. L. Almeida, Isabel H. Manssour, and Milene S. Silveira

MAscOT: Self-Adaptive Opportunistic Offloading for Cloud-Enabled Smart Mobile
Applications with Probabilistic Graphical Models at Runtime ....................................................5701

Nayyab Zia Naqvi, Jonas Devlieghere, Davy Preuveneers, and Yolande Berbers

Meeting Quality Standards for Mobile Application Development in Businesses: A
Framework for Cross-Platform Testing .......................................................................................5711

Tor-Morten Grenli and Gheorghita Ghinea

Mobile Application Developers’ Platform Choice Model .............................................................5721

Abhinay Puvvala, Amitava Dutta, Rahul Roy, and Priya Seetharaman

Towards a Reference Architecture for Model-Driven Business Apps ........................................5731

Sören Evers, Jan Ernsting, and Tim A. Majchrzak
Modern Trends in Parallel Computing — Minitrack Chairs: Peter Salhofer

Introduction to the Modern Trends in Parallel Computing Minitrack .............................................................. 5741

Peter Salhofer

OpenMP is Not as Easy as It Appears .................................................................................................................. 5742

Rogério Gonçalves, Marcos Amaris, Thiago Okada, Pedro Bruel, and Alfredo Goldman

Tuning OpenCL Applications with the Periscope Tuning Framework ......................................................... 5752

Enes Bajrović, Robert Mijaković, Jiri Dokulil, Siegfried Benkner, and Michael Gerndt

Securing the Cloud and the Internet of Things — Minitrack Chairs: William J. Yeager, Jean-Henry Morin

Introduction to Securing the Cloud and the Internet of Things Minitrack ..................................................... 5762

William James Yeager and Jean-Henry Morin

Securing D2D Wireless Links by Continuous Authenticity with Legitimacy Patterns ................................ 5763

Ibrahim Abualhaol and Steven Muegge

Security in Internet of Things: Challenges, Solutions and Future Directions ............................................. 5772

Sathish Alampalayam Kumar, Tyler Vealey, and Harshit Srivastava

Software Product Lines: Engineering, Services, and Management — Minitrack Chairs: Timo Käkölä, Andrea Leitner

Introduction to Software Product Lines: Engineering, Services, and Management Minitrack ......................... 5782

Timo Käkölä and Andrea Leitner

Evaluation Framework for Analyzing the Applicability of Criteria Lists for the Selection of Requirements Management Tools Supporting Distributed Collaboration and Software Product Line Requirements Management ............................................................ 5783

Maria Florencia Santillan and Timo Käkölä

Feature-Based Variability Management for Scalable Enterprise Applications: Experiences with an E-Payment Case .................................................................................................................................. 5793

Davy Preuveneers, Thomas Heyman, Yolande Berbers, and Wouter Joosen

Generating App Product Lines in a Model-Driven Cross-Platform Development Approach .................................. 5803

Jan C. Dageförde, Tobias Reischmann, Tim A. Majchrzak, and Jan Ernsting

OntoSoft Process: Towards an Agile Process for Ontology-Based Software ................................................. 5813

Joice B. Machado, Seiji Isotani, Armando Barbosa, Judson Bandeira, Williams Alcantara, Ig Bittencourt, and Ellen F. Barbosa

Understanding How Social-Behavioural Science Theory Can Explain the Design of Software Websites ................................................................................................................................. 5823

Arun Vishwanath, Brynne Harrison, and Yu Jie Ng

XANA: An End User Software Product Line Framework for Smart Spaces ..................................................... 5831

Vasilios Tzeremes and Hassan Gomaa
Wireless Networks — Minitrack Chairs: Edoardo Biagioni, John McEachen, Murali Tummala

Introduction to the Wireless Networks Minitrack ........................................................................................................5841
   Edoardo Biagioni, John McEachen, and Murali Tummala

Cellular Synchronization Assisted Refinement (CeSAR): A Method for Accurate Geolocation in LTE-A Networks ................................................................................................................................5842
   John D. Roth, Murali Tummala, and James W. Scrofani

Cluster Head Selection in Wireless Mobile Ad Hoc Networks Using Spectral Graph Theory Techniques ....................................................................................................................................................5851
   Thomas Parker and John McEachen

Constructing a Shortest Path Overhearing Tree with Maximum Lifetime in WSNs ........................................................................................................................5858
   Wael Y. Alghamdi, Hui Wu, Wenguang Zheng, and Salil S. Kanhere

Experimenting Broadcast Storm Mitigation Techniques in FANETs ........................................................................................................................5868
   Rayner de Melo Pires, Sergio Zumpano Arnosti, Alex Sandro Roschildt Pinto, and Kalinka R L J C Branco

Success Lies in the Eye of the Beholder: The Mismatch Between Perceived and Real IT Project Management Performance ........................................................................................................................5878
   Fabiano G. Neves, Hans Borgman, and Hauke Heier

Author Index