2018 IEEE Technology and Engineering Management Conference (TEMSCON 2018)

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IEEE

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Thursday, June 28 8:15 - 9:00 (America/Chicago)

Morning Keynote

Digital Applications in Energy

Amy Francetic, Managing Director, Invenergy Future Fund

Room: Grand Ballroom

Thursday, June 28 9:15 - 10:15 (America/Chicago)

Project Management

Room: Heritage Ballroom
   Chair: Jason K. Hui

9:15 *Robust Project Planning under Resource Constraints*   92
   Izack Cohen and Noemie Balouka

9:35 *Discussing a Broad Strategy Against Troubled IS/IT Projects* N/A
   Paolo Rocchi

9:55 *Revealing the Unobvious Social Norms and Traditional Development Fantasies that Impede Agile Adoption*   79
   John Ryskowski

Managing Complex Systems and Product, Part 1

Room: Northshore Room
   Chair: Ghaith Rabadi

9:15 *Sequence-Based Simulation Optimization: An Application to Container Terminals*   381
   Mariam Kotachi, Ghaith Rabadi, Mamadou Seck, Mohamed Kais Msakni, Mohammed Al-Salem and Ali Diabat

9:35 *Systems thinking, a modelling tool for managing change in a mining environment*   135
   Sezer Uludag and Leon Pretorius

9:55 *A Case Study in Developing an Integrated Data and Model Management System for the Development of a Complex Engineered System* 117
   Stephen Gillespie and Alex MacCalman

Start-ups

Room: Rogers Room
   Chair: Xiaohong Quan

9:15 *Organizational design for producing start-ups* 74
   Günther Schuh, Jan-Philipp Prote, Stefan Dany and Pia Walendzik

9:35 *A Knowledge Spillover-based Approach to New Product Conceptualization*   176
   Marco Cuvero, Richard D Evans, Maria Granados and Alan Pilkington

9:55 *Towards Financial Inclusion-based Monetization Model for Startups Drive*   400
   Jean Marie Tshimula, Atsushi Togashi and Numfor Solange Ayuni

Strategy & Marketing

Room: Bonbright Room
   Chair: Richard D Evans

9:15 *Disadvantaged Early Entrants? Entry Order Effects on Product Performance*   111
   Johanna Kirjavainen and Saku J. Mäkinen

Thursday, June 28 10:15 - 10:45 (America/Chicago)

Networking Break

Room: Grand Ballroom

Thursday, June 28 10:45 - 11:45 (America/Chicago)

Supply Chain

Room: Heritage Ballroom
Chair: Renato de Matta

> **10:45** *An IoT-Enabled Framework for Dynamic Supply Chain Performance Management*   256
> Abdallah Dweekat and Raid Al-Aomar
>
> **11:05** *A Strategic Manufacturing Capacity and Supply Chain Network Design Contingency Planning Approach*   149
> Renato de Matta and Tan Miller
>
> **11:25** *Modeling supply network configuration problems with varying demand profiles*   295
> Subodha Dharmapriya, Senevi Kiridena and Nagesh Shukla

Managing Complex Systems and Product, Part 2

Room: Northshore Room
Chair: Jason K. Hui

> **10:45** *A Three-Dimensional View of Complex Product Development Management*   123
> Ali Yassine
>
> **11:05** *Methodology for the derivation of a digital shadow for engineering management*   31
> Günther Schuh, Christian Dölle and Christian Tönnes
>
> **11:25** *Data Model-based Improvement of Transparency and Controllability of Product Complexity*   15
> Günther Schuh, Christian Dölle and Jan Koch

Leadership & Teaming

Room: Rogers Room
Chair: Robert E. Bierwolf, MScEng. SMIEEE

> **10:45** *Leadership to lean*   232
> Reiner Martens
>
> **11:05** *Towards Team Formation Using Belbin Role Types and a Social Networks Analysis Approach*   346
> Josue-Miguel Flores-Parra, Manuel Castañón-Puga, Richard D Evans, Ricardo Rosales and Carelia Gaxiola-Pacheco
>
> **11:25** *An Innovation Paradigm in a Learning Community*   142
> Pieter Frijns, Robert E. Bierwolf, MScEng. SMIEEE and Fons van Leeuwen, MSc.

Technology Strategy

Room: Bonbright Room
Chair: Hongyi Chen

> **10:45** *Organizational Adaptive Strategies to Changes in Product Technological Systems: An Ongoing Research and Case Studies*   249
> Jonathan C. Ho, Demei Lee, Hongyi Chen and Yen-Ching Chen

11:05 *Defining nexus technology: the introduction of a conceptual model*   155
  Imke De Kock and Alan C Brent

11:25 *Legitimating strategies for differentiation in the red ocean of nutraceuticals*   9
  Ma Yu-Hsin and Lee Chuan-Kai

Thursday, June 28 12:00 - 1:00 (America/Chicago)

Lunch - Keynote

Industry Relevance: Leveraging Opportunities for IEEE and IEEE-USA
Tom Coughlin, Coughlin Associates, President-elect, IEEE-USA

Room: Grand Ballroom

Thursday, June 28 1:10 - 2:30 (America/Chicago)

Manufacturing & Production

Room: Heritage Ballroom
  Chair: P. Ji

1:10 *Assessment of Readiness for Smart Manufacturing and Innovation in Korea*   341
  Dong-Pyoung Sheen and Yunna Yang

1:30 *A computing model: the closed-loop optimal control for large-scale one-of-a-kind production based on multilevel hierarchical PERT-Petri net*   43
  Ying Mei, Jiawei Ye and Zhigang Zeng

1:50 *Competence Based Worker Assignment and Impacts on Production Scheduling in Precast Construction*   50
  Zhaojing Wang, Hao Hu and Jie Gong

2:10 *Cooperative game study on Kano's model and quality function deployment*   226
  P. Ji and Yunwen Miao

IoT

Room: Northshore Room
  Chair: Charla Griffy-Brown

1:10 *Agile Business Growth and Cyber Risk: How do we secure the Internet of Things (IoT) environment?*   324
  Charla Griffy-Brown, Demetrios Lazarikos and Mark Chun

1:30 *An Empirical Investigation of the Effects of Individuality on Responses to Data Theft Crimes*   364
  John Angelis and Joseph Miller

1:50 *Smart Collaborating Hubs and a Smart Global Village - An Alternative Perspective on Smart Cities*   220
  Amjad Umar

2:10 *Management Challenges in Technological Job Loss*   370
  Donna Ogle

Special Session 1

Industry-Academia Collaboration Best Practices - Caterpillar & UIC
Samantha Melchiori (Caterpillar, Inc.); Ugo By (University of Illinois at Chicago)

Room: Bonbright Room
  Chair: Peggy K Matson

Thursday, June 28 2:45 - 3:30 (America/Chicago)

Afternoon Keynote

Cutting carbon, cost & time with clean energy blockchain
Mark Johnson, Founder, Clean Energy Blockchain Network

Room: Grand Ballroom

Thursday, June 28 3:30 - 4:00 (America/Chicago)

Networking Break

Room: Grand Ballroom

Thursday, June 28 4:00 - 5:00 (America/Chicago)

Editorial panel-Multi journal

Meet the editors of the Technology and Engineering Management related journals
Tugrul Daim, moderator

Room: Grand Ballroom

Special Session 2

Industry-Academia Collaboration Best Practices - UI LABS & Invent2026
Alyssa Sullivan (UI LABS); Thomas Day (Invent2026)

Room: Bonbright Room
    Chair: Peggy K Matson

Thursday, June 28 5:30 - 8:00 (America/Chicago)

Conference Reception

Room: Grand Ballroom

Friday, June 29

Friday, June 29 8:15 - 9:15 (America/Chicago)

Morning Keynote

The Journey from a Teacher to a CTO
Helen Sun, CTO of Architecture, Engineering, and Data Management, JP Morgan Chase

Room: Grand Ballroom

Friday, June 29 9:25 - 10:25 (America/Chicago)

Innovation Management, Part 1

Room: Rogers Room
    Chair: Peggy K Matson

9:25 *Performing Under Innovative Uncertainty: Learning to Groove*   287
    Steve T Cho, IreLynn Black, Aditya Jagannathan, Johnathan Barone and Aram Chomina-Chavez

9:45 *Derivation of Quaternary-Based Mathematical Operators to Manage Innovation in Complex Adaptive Systems*   1
    Pravir Malik and Leon Pretorius

10:05 *Enriching innovation generation through external technology scouting in an uncertain technological environment*   97

    <u>Wang Chunhsien</u>, Xiaohong Quan and Markus Chiahan Tsai

Complex Decision-Making

Room: Bonbright Room

    Chair: Ghaith Rabadi

9:25 *Hybridizing Meta-RaPS with Machine Learning Algorithms*   281

    <u>Fatemah Al-Duoli</u>, Ghaith Rabadi, Mamadou Seck and Holly Handley

9:45 *Human-Centered Cyber Physical Production System: How Does Industry 4.0 impact on Decision-Making Tasks?*   129

    Fazel Ansari, <u>Philipp Hold</u> and Wilfried Sihn

10:05 *Project Portfolio Management in Indian Auto component Industry: An exploratory Analysis*   274

    <u>Koteswara Naik</u> and Vilas Kharat

Industry Forum Sessions

Rooms: Grand Ballroom, Heritage Ballroom, Northshore Room

Friday, June 29 10:25 - 10:35 (America/Chicago)

Short Break

Friday, June 29 10:35 - 11:35 (America/Chicago)

Innovation Management, Part 2

Room: Rogers Room

    Chair: Robert E. Bierwolf, MScEng. SMIEEE

10:35 *Continuous Innovation Through Experimentation*   68

    <u>Cherif Amirat</u> and Richard Reeps

10:55 *Tying Innovation to Strategy*   261

    <u>Mark Wehde</u>

11:15 *Promoting the Diffusion of Sustainable Innovations in the Cosmetic Industry*   319

    Chen Feng, <u>Hongyi Chen</u> and Jonathan C. Ho

Technology Management

Room: Bonbright Room

    Chair: Holly Handley

10:35 *The Use of Stochastic Value Models to Create Technology Roadmaps*   194

    <u>Vikram Mittal</u>

10:55 *Improving Effectiveness of Government-Funded R&D Programs—Application of a Stage-Gate System for a Japanese Ministry*   243

    Yohei Sukegawa and <u>Tariq Samad</u>

11:15 *A Strategic Management Framework for the Commercialization of Multi-technology Renewable Energy Systems: The Case of Concentrating Solar Power Technologies in South Africa*   62

    <u>Gregory Prentice</u>, Imke De Kock and Alan C Brent

Industry Forum Sessions

Rooms: Grand Ballroom, Heritage Ballroom, Northshore Room

Friday, June 29 11:45 - 12:30 (America/Chicago)

Pre-Lunch Keynote

Innovation DNA
Christine Schyvinck, CEO, SHURE

Room: Grand Ballroom

Friday, June 29 12:30 - 1:15 (America/Chicago)

Lunch

Room: Grand Ballroom

Friday, June 29 1:15 - 2:00 (America/Chicago)

Post-Lunch Keynote

Creating and Commercializing Disruptive Changes in Information Technology
Chris Gladwin, CEO and Co-Founder, Ocient

Room: Grand Ballroom

Friday, June 29 2:00 - 2:15 (America/Chicago)

Short Break

Friday, June 29 2:15 - 3:00 (America/Chicago)

Industry Forum Sessions

Rooms: Grand Ballroom, Heritage Ballroom, Northshore Room

Friday, June 29 2:30 - 3:50 (America/Chicago)

Knowledge Management

Room: Rogers Room
Chair: Richard D Evans

2:30 *Evaluate and Score Knowledge Management Activities and their Implementation During a Project Lifecycle Using (HDM)* **163**
Abdulhakim Giadedi and Tugrul Daim

2:50 *Knowledge Management Model focused on the millennial generation* **335**
Miguel Valdés and Virginia López

3:10 *IT R&D Outcomes and Technology Knowledge Flows in Korea* **56**
Woo-Jin Jung and Sang-Yong Lee

3:30 *Contributions of Knowledge Management to Firm Competitiveness from a Complexity Approach* **352**
Eduardo Ahumada-Tello, Manuel Castañón-Puga, Richard D Evans and Carelia Gaxiola-Pacheco

Start-ups & Social Entrepreneurship

Room: Bonbright Room
Chair: Xaver Neumeyer

2:30 *Exit performance of venture capital backed high-tech start-ups* **313**
Nazrul Islam, Daniel Amona and Stanley Gyoshev

2:50 *Engineers as Entrepreneurs* **104**
Beth-Anne Schuelke-Leech

Friday, June 29 3:00 - 3:45 (America/Chicago)

Industry Forum Sessions

Rooms: Grand Ballroom, Heritage Ballroom, Northshore Room

Friday, June 29 3:50 - 4:00 (America/Chicago)

Short Break

Friday, June 29 4:00 - 5:45 (America/Chicago)

Executive Panel

Disruption in Established Industries
Stan Curtis, VP URBAN.systems
Danielle DuMerer, CIO, City of Chicago
Scott McCormick, President, Connected Vehicle Trade Association
Don McNeeley, CEO of Chicago Tube & Iron
Maria Rios, CEO of Nation Waste Inc.

Room: Grand Ballroom

Friday, June 29 6:30 - 8:00 (America/Chicago)

Conference Dinner & Keynote

Thriving Through Change
Rob Wolcott, Kellogg School of Management, Northwestern University

Room: Grand Ballroom

Saturday, June 30

Saturday, June 30 8:15 - 9:00 (America/Chicago)

Morning Keynote

Data is the future
Mandy Mock, VP and GM for Product Engineering Solutions (PES IT), Intel Corporation

Room: Heritage Ballroom

Saturday, June 30 9:10 - 10:30 (America/Chicago)

Open Innovation & Collaboration

Room: Rogers Room
   Chair: Peggy K Matson

9:10 *Is the turbulence caused by the dynamic environment straining start-ups' agility? Exploring the pragmatic solution of open innovation while capturing the role of formal and informal protection mechanisms   85*
   Umar Safdar, Irtaza Sajid and Yuosre Badir

> **9:30** *A Framework for Analyzing Transformation from Closed to Open Innovation: The ICTs Facilitated Process* *200*
> Qingna Zhou and Ping Gao
>
> **9:50** *Outcome-based services challenges and value-chain delivery* *N/A*
> Vinit Parida
>
> **10:10** *How to Identify Spurious Transportation Public-Private Partnership Projects* *37*
> Qingxue Liang and Hao Hu

Healthcare & Biotech

Room: Bonbright Room
> Chair: Tugrul Daim

> **9:10** *Learning Health Systems: A Multi-perspective Analysis* *237*
> Amir Shaygan, Joao Lavoie and Tugrul Daim
>
> **9:30** *Security Risk Assessment in Electronic Health Record System* *21*
> Madhavi Adavi and Susan J Lincke
>
> **9:50** *Assessment of biotechnologies: a therapeutic monoclonal antibody emerging score* *188*
> Cristiano G Pereira, Joao Lavoie, Edwin Garces, Marina Dabic, Geciane Porto and Tugrul Daim
>
> **10:10** *Practical Application of a Balanced Scorecard as a Strategic Management System* *267*
> Mark Wehde

Saturday, June 30 9:30 - 11:45 (America/Chicago)

Entrepreneurship Panel

Failing for Success: Lessons Learned in Innovation
Panelists:
Allan Tear, 2017 IEEE Entrepreneurship Steering Committee Chair / Managing Partner at Rev Up Capital
Colin Curtain - Engineering Manager @ Human Interest
Pramod Abichandani - Founder, Locorobo
Carlee Price - Pique Financial Works

Room: Heritage Ballroom

Saturday, June 30 10:30 - 10:45 (America/Chicago)

Short Break

Saturday, June 30 10:45 - 11:45 (America/Chicago)

Culture

Room: Rogers Room
> Chair: Eduardo Ahumada-Tello

> **10:45** *The national culture effect: Trust at Saudi Arabian petrochemical engineering firms* *25*
> Abdullah Algarni
>
> **11:05** *Trust in Employee, Trust in Customer In Virtual Organizations; A Macroergonomic Perspective* *N/A*
> Reem Alkadeem
>
> **11:25** *Factors Affecting Corporate Happiness within Technology-Based Firms in Andalucia* *376*
> Eduardo Ahumada-Tello, Rafael Ravina-Ripoll, Araceli Galiano-Coronil and Richard D Evans

Saturday, June 30 10:45 - 11:25 (America/Chicago)

Higher Education

Room: Bonbright Room
Chair: Tugrul Daim

10:45 *Graduate Studies in Information Systems Engineering and Management (ISEM) for Digital Enterprises* **358**
Amjad Umar

11:05 *Evaluating Technologies for Higher Education: E- Services* **206**
Hans VanDerSchaaf and Tugrul Daim

Saturday, June 30 12:00 - 12:45 (America/Chicago)

Lunch - Awards

Celia Desmond

Room: Heritage Ballroom

Saturday, June 30 12:45 - 1:10 (America/Chicago)

Networking Break

Room: Heritage Ballroom

Saturday, June 30 1:10 - 1:50 (America/Chicago)

Economics

Room: Rogers Room
Chair: Tariq Durrani

1:10 *Industrial Strategy: Myth or Reality* **212**
Tariq Durrani and Sheila Forbes

1:30 *Integrating Fundamental and Technical Analysis of Stock Market through Multi-layer Perceptron* **182**
Alireza Namdari and Steven Li

Teaching Entrepreneurship

Room: Bonbright Room
Chair: Xiaohong Quan

1:10 *An Experiential Report on Using a Software Factory in a Rural State to Promote Entrepreneurship* **170**
Clemente Izurieta and Sharlyn Gunderson-Izurieta

1:30 *Promotion of Techno-entrepreneurship Programs in different Countries: A Review* **301**
Koteswara Rao Naik Bhukya, Ajit Kumar, Jayesh Mohite and Anees Khan

Saturday, June 30 1:10 - 3:30 (America/Chicago)

Research roundtable

Room: Northshore Room