

# IEOM Industry Solutions

## Dubai, United Arab Emirates

### March 3 – 5, 2015

IEOM Industry Solutions sessions will showcase the industrial case studies and their impacts of the industrial solutions using IE / OM tools and techniques (lean, six sigma, FMEA, simulation, design of experiments, optimization, TOC, PLM, CAE, statistical analysis, etc.) IEOM 2015 Dubai Conference will have a dedicated session for the Industry Solutions where distinguished practitioners provide their presentations including their experiences and journey to be successful. Thirty six featured speakers will be from various part of the world to address industrial challenges and opportunities for continuous improvement and sustainability.

#### IEOM Industry Solutions Chairs

Majid Abab, The Boeing Company, USA  
Resh Plaha, Crystal Quality, UK

### Distinguished Industry Speakers

Tuesday (March 3, 2015)

**Session I Chair:** Dr. Zola Mbanguta, African Engineering Education and Business Association

09:45 – 10:15 (Tuesday)



#### Dr. Zola Mbanguta

President of African Engineering Education and Business Association  
Founder of CDIO Institute for Africa (A UNESCO-UNEVOC Partner Agency in South Africa)  
Pretoria, South Africa

#### “Engineering Education for Industrialization in the African Region”

**Abstract:** The paper illustrates aims to reduce unemployment among engineering graduates by mobilising support for them to start their own businesses. South Africa is the African region’s most industrialised country which is now upturning the dismal 1 250 engineers per million population per annum crisis it produced after the attainment of liberation and democracy in 1994. After liberation the country has promulgated laws and policies to ensure that its universities intensify the education and training of engineering graduates as well as intensifying engineering education research to the highest levels by encouraging the accreditation systems of the profession through the Engineering Council of SA and the establishment and support of the University of Cape Town Centre for Research in Engineering Education which also publishes a quarterly publication to reflect research outcomes. In 2006 UNESCO mandated South Africa and the CDIO Institute For Africa to lead the reforms of all the United Nations members states’ engineering programmes by establishing a single common UNESCO international engineering programme which should be prototyped in SA and Africa first. The programme would then be spread to the entire African region through the UNESCO Commissions in Africa after which it would then be adopted by all UN member states of the world. The programme would be informed and guided by the Conceive-Design-Implement-Operate educational theory. South Africa first ventured into establishing an African regional body on engineering education which was then followed by a partnership between Africa and China through a SA and China bilateral agreement. At the evaluation of the China-Africa partnership which was born in 2009, SA and China realised the industrial levels the countries had already reached. The SA Presidency then advised the African engineering body to move towards the industrialisation of the region by referring the engineering body to the SA Minister of Trade and Industry for guidance.

This paper discusses in-depth the procedures followed by the founding and lead-institution of this industrialisation process which began in 2006 during which the institution became a founding member of the ruling political party’s business forum up to the current situation when the African Engineering Education and Business Association (AEEBA) was officially established after which it was guided by the SA government to become a key member of the SA Business Forums, BRICS Business delegation member, a signatory with China which led to the formation of the China-Africa Engineering Programme in 2012 and now with Turkey (with observation from other European states) which led to the formation of the Europe-Africa Engineering Programme in 2014. Industrial legislation and policy frame works which underpin and guide this growth are also discussed. The paper concludes by briefly discussing the recent adoption of industrialisation as the main driver of the economy of the fourteen member states of the Southern African Development Community sub-region of Africa.

**Bio:** Dr. Zola Mbanguta completed his post-doctoral research in Conceive-Design-Implement-Operate engineering education reform theory at Linkoping University in Sweden in 2004. He was appointed to chair the South African UNESCO Science Commission in 2005 to 2007. He is the president of the African Engineering Education and Business Association which a

member of the South African delegation to BRICS Business Forum, a member of the African National Congress Progressive Business Forum and Black Business Council of SA. He is Founder of China-Africa Engineering Programme and Europe-Africa Engineering Programme which aim to first intensify the highest engineering education and training levels of Africans and thereafter create business opportunities for them. He is the Founder of the CDIO Institute for Africa and is Head and Director of its UNESCO-UNEVOC Partner Agency Wing.

10:15 – 10:45 (Tuesday)



### Dr. Mark Hodgkinson

Operational Excellence  
Bapco Refinery (Bahrain Petroleum Company)  
Kingdom of Bahrain

#### “Rapid OE by Technology Assisted Governance”

**Abstract:** Bapco Refinery (Bahrain Petroleum Company, Kingdom of Bahrain), affiliated under the Chevron Technical Services (TSA) agreement, have had remarkable success with limited resources, in accelerating the adoption of Operational Excellence (OE) by implementing a visual conformance management system within a formal Operational Governance process. Experience over the last 2-3 years has shown that OE performance is delivered rapidly by first focusing on conformance to gain control and then on positive reinforcement to achieve sustainable performance. The visual management approach is based upon Siemens –XHQ which is ubiquitous in many Refineries but not normally leveraged for OE to the extent presented here. The Governance Model used is an OE centric review meeting that occurs monthly for 90 min and requires no participant preparation (due to auto-information generation) and no manually prepared minutes. The meeting is a true review format and avoids getting held up by problem solving which occurs in other formats.

This solution builds upon the traditional visualization of process diagrams, lab results, maintenance and other data sources line workers need for the ‘here-and-now’ work, to also weave conformance and performance information into this ‘real-time world’ so that they become one workspace. While checking the latest flash point lab results for the Cracker unit, a Superintendent can also check to see if his or her direct reports have completed their mandatory H2S safety course. A Control Operator who is monitoring Critical Process Variables can check whether Management of Change (MOC) requests have progressed and send an automated email to the change owner from XHQ and never have to enter the MOC system. An Area Manager can check the latest KPI for behavior-based observations and quickly trace that number back to the contributing factors that build the index and also see the top 5 at-risk behaviors for any part of the organization. Significant improvements in conformance (in some cases >300% improvements) and then also process improvements spawned from leading KPI measurements has achieved tangible business benefits with respect to incident reduction and therefore profitability.

#### Key Takeaways

- The adoption of Operational Excellence can be accelerated by using visualizations of compliance and systematic governance.
- The technology already exist and can be easily leveraged
- Operational Governance needs to be efficient if it seeks to be effective in the long term.
- Industrial Operational Intelligence is key in the governance of a continuous process like Refining or oil & gas production.
- The approach has been proven to work on multiple sites with limited resources.

**Biography:** Dr. Mark Hodgkinson has over 25 years’ experience in the oil Industry in various roles such as Research and Development, Analytical Chemistry, Chemometrics & Multivariate Statistical Process Control, Business Process Improvement, Environmental Analytical Chemistry, Environment Health and Safety, Quality and Operational Excellence. He is currently in his 4th year of implementing a comprehensive Operational Excellence Management System based upon Chevron’s OEMS. He holds a PhD and an Applied Degree in Chemistry. Previous to the oil Industry he was a biologist in the ecology and applied microbiology disciplines.

10:45 – 11:15 (Tuesday)



### Anandhi Dhukaram

Researcher  
University of Cambridge  
England, United Kingdom

#### “Cognitive Engineering approach for creating sustainable solutions to complex industrial design challenges”

**Summary:** As systems are becoming more complex, design approaches are needed to ensure that the systems are efficient and usable by the ordinary people. Currently, most of the design approaches concentrate on the technology and engineering aspects with little emphasis on the role of humans, their limitations or how humans currently perform the tasks or their cognitive models. Therefore there is a gap between the technology and the

humans. Cognitive Engineering approach helps to bridge this gap between the people and technology. Using Cognitive Engineering approaches we can better understand the interactions and relationships between the people, technology, processes and the organisations. This paper shows how Cognitive Engineering approaches can be applied for the analysis, design and evaluation of complex systems through two case studies. The case studies show how Cognitive Engineering approaches like Cognitive Work analysis and organisational change can be used in supporting patient self-management in healthcare and in higher education provision.

**Biography:** Anandhi Dhukaram is a researcher at the University of Cambridge, researching on the application of Cognitive Engineering and interface design for humans. Her major research emphasis is to see: how cognitive engineering and socio-technical thinking can help drive both incremental and radical innovation within the company. Anandhi has a Master's degree in Computer Science from the University of New South Wales, Australia and is currently pursuing PhD at the School of Electronic, Electrical and Computer Engineering, University of Birmingham. Her PhD research is funded by the European Union project titled "Pervasive Technology for Cardiac care". Before entering academia, Anandhi had a distinguished career for more than a decade working for various clients including Accenture, Barclays, ACNielsen and more. She has also gained experience working across the globe like: India, Australia, Canada, USA and UK! Moreover, she has been a speaker at the Oxford Symposium for higher education and Entrepreneurs network. She has also presented in many conferences including British HCI, IEEE Pervasive Healthcare (Dublin), Mobile Data Management (India), and IEEE International Conference on Healthcare Informatics (USA).

Session II Chair: Dr. Janos Pinter, Pinter Consulting Services, Inc., Canada

11:30 – 12:00(Tuesday)



### Derek Middlemas

Group Operations Director  
AVEVA Solutions  
Dubai, UAE

#### “Improve Operations Performance with Visual Thinking”

The Operations Industry is starting to embrace the digital transformation agenda now facing all industrial sectors, answering the question – How do we exploit the vast information sources available to improve our business? The human brain is tuned and optimized for visualization. We operate far more effectively when we can visual a graphic or a picture or a movie clip than when we deal with pages of words and numbers. Technology now offers the very real opportunity to create a full blown 3D visual replica of the physical asset, whether it is through 3D CAD models or laser scanning, photos, schematics, movie clips or a combination. Furthermore this highly intuitive visual environment can be combined with many other information sources in the context of a business process. Supporting maintenance planning or work permit management, immersive training and a host of other tasks using a “visual thinking” technique is now affordable and deployable. This presentation will provide through examples and case studies an insight to what is possible now and in the future to improve operations through the use of a Digital Asset strategy using a highly intuitive Visual Thinking approach.

**Bio:** A Chartered Engineer with a degree in Naval Architecture and a Masters in Project Management Derek spent the early part of his career involved in the design and installation of floating and fixed offshore installations, before moving into project management. Derek worked for several large EPC firms, including Foster Wheeler and Bechtel, where he ran the Regional Engineering and IT Departments, and was responsible for leading and driving forward the use of innovative engineering software on their projects, especially 3D CAD and Engineering Data Management. With a passion for improving business through the use of information Systems Derek joined software supplier AVEVA in 2000 to drive the expansion of the business into a broader portfolio of Engineering IT Solutions and he has held several senior positions in AVEVA. As EVP Business Strategy, he provided effective leadership to the overall product/business strategy before taking up the position of Group Operations Director in 2008 responsible for Sales, Strategy and Marketing. As a member of the AVEVA Solutions Board Derek's current responsibility is to lead the Enterprise Solutions business, and develop solutions for the plant operations market.

12:00 – 12:30 (Tuesday)



### Dr. Ayham Jaaron

Director of Quality Assurance Unit  
An-Najah National University, Nablus, Palestine

#### “The Art of Innovative Quality Assurance tools: The case of ABET Accreditation”

**Summary:** Majority of academic literature available on the topic of ABET Accreditation system is focused on the most rigorous procedures for forming Program Educational Objectives (PEOs) and student outcomes (i.e. A-K), giving little attention to the process of developing innovative quality assurance tools that can 1) reduce academic institutions’ resources consumption where multiple programs are to be accredited, 2) enhance accreditation success, 3) and minimize review process uncertainty. Based on a case study methodology, the presentation discusses the need to help various academic programs seeking ABET accreditation at an institution by streamlining and centralizing the process of meeting ABET criteria whilst granting full control for the academic programs. This intended presentation aims at tackling this issue by proposing a novel form of ABET quality assurance tools that can increase the chance of having a successful ABET review process for multi-programs that follow a green policy.

**Bio:** Dr. Ayham Jaaron is currently the Director of Quality Assurance Unit at An-Najah National University, Nablus, Palestine. He is also Director of ABET Centre at the Faculty of Engineering and Information Technology, and assistant professor at the Industrial Engineering Department. He received his PhD degree (full time) in Manufacturing Engineering and Operations Management from the Wolfson School of Mechanical and Manufacturing Engineering, Loughborough University, England, UK in 2010. He was a full-time instructor at the Industrial Engineering Department of An-Najah National University, Nablus, Palestine from 2005–2007. Dr. Jaaron is recognized for his expertise and contributions to the quality of education in Palestine. He led the largest ABET Accreditation project in the region for seven engineering programs simultaneously at An-Najah National University, that resulted in a successful ABET Accreditation process. He is extensively involved in drawing and planning quality assurance policies for academic programs. His research activities have focused on service operations, service quality, resource utilization, organizational resilience, and human aspects of motivation in the manufacturing and service sectors. He was an Academic Visitor to the University of Strathclyde, Glasgow, UK in 2006. He is also academic visitor to the Wolfson School of Mechanical and Manufacturing Engineering of Loughborough University, England, UK.

12:30 – 13:00 (Tuesday)



### Dr. Janos D. Pinter

Proprietor & Research Scientist  
Pinter Consulting Services, Inc., Canada

**János D. Pintér** is a researcher and practitioner with four decades of work experience. His professional interests are primarily related to nonlinear optimization, including algorithm and software development, and a broad range of applications. He received M.Sc. (Eötvös University of Sciences), Ph.D. (Moscow State University), and D.Sc. (Hungarian Academy of Sciences) degrees in Mathematics, with specializations in Operations Research, Stochastic and Global Optimization.

Dr. Pintér is the owner of PCS Inc. (Canada), a consulting company. In this capacity, he is the principal developer of several professional nonlinear optimization software products for compiler platforms, spreadsheets, modeling languages, and integrated scientific-technical computing systems. These software products are used at hundreds of academic, business and research organizations worldwide. Dr. Pintér wrote 4 books and he is editor / technical editor of 5 other volumes. (Several further book projects are in progress.) He is also author / co-author of more than 200 research articles, book chapters, proceedings contributions, book reviews, and technical reports. His book titled Global Optimization in Action received the 2000 INFORMS Computing Society Prize for Research Excellence.

Among other professional affiliations, he has served or serves on the editorial board of the Journal of Global Optimization, the Journal of Applied Mathematics and Decision Sciences (now Advances in Decision Sciences), Algorithmic Operations Research, and the International Journal of Modeling, Identification and Control. He is a past or present member of the Canadian and Hungarian Operations Research Societies, the Institute for Operations Research and the Management Sciences (INFORMS), the Mathematical Programming Society, and the Society for Industrial and Applied Mathematics. He served as Vice-Chair of the INFORMS Optimization Society, and as Chair of the Managing Board of EUROPT, the Continuous Optimization Working Group of EURO. Dr. Pintér has worked and presented lectures in about 40 countries of the Americas, Europe, the Middle East, and the Pacific Region.

**Session III: Sponsors and Exhibitors Presentations**

14:00 – 15:00 (Tuesday)

**Normand Péladeau**

President and CEO  
Provalis Research  
Montreal, Canada

**Normand Péladeau** is the president and CEO of Provalis Research, a software company based in Montreal. He has a doctorate degree in psychology and more than 30 years of experience as a social science researcher and as a consultant in research methodology for large corporations, governmental agencies, and international organization. He trained hundreds of people to text analysis techniques for a wide range of applications such as business intelligence, market research, urban planning, aviation safety, media analysis, survey research, international crime analysis.

**Dr. Mahmoud Awad**

American Society of Quality - Middle East and North Africa  
Dubai, UAE

Dr. Mahmoud Awad received his PhD in Industrial Engineering from Wayne State University, Michigan, USA. He worked for many years at Ford Motor Company as a quality and reliability engineer, Case New Holland (CNH) as a Six Sigma MBB, and Schlumberger Technology Corporation as a reliability manager. Dr. Awad also worked as an assistant professor in the Industrial Engineering Department at AlHosn University in Abu Dhabi. His research interests include Design for Six Sigma (DFSS), quality engineering, reliability allocation, Prognostic Health Management (PHM), and Centered based Maintenance (RCM). Currently he is an assistant professor of industrial engineering at American University of Sharjah (AUS).

15:00 – 15:30 (Tuesday)

**Madhu P Pillai**

Projects Director  
Kentz Engineering International Co. Ltd.  
Al Khobar, Saudi Arabia

**“Relating Estimating & Cost Control to Project Success”**

**Abstract:** The very first response from the assigned project manager on any Lump Sum project on the contractor’s side is more than likely negative on the bid pricing. However what these project managers generally fail to understand and appreciate is the necessity of a proper and formal validation exercise, followed by many re-validations in logical intervals to assess and re-assess the project. The project managers need to see, think and work beyond time, cost and quality. Project managers and teams have to think more strategically and take accountability for achieving project’s business objectives and not just for “getting the job done”. This in turn would expect the teams to be effective more than just being efficient. So validation should be beyond cost, time and quality. It should be in line with the overall business objective of the project. Not many contractors can really see and feel the value chain for the client on the projects they are involved. Contractors should be able to see the big picture through the client’s eyes and use it in validation and cost control during project execution; thereby proactively moving towards partnering with the client during for successful completion of the project.

**Bio:** Mr. Madhu P. Pillai is an Electrical Engineer with post graduate degrees in Human Resources Management (India) and Business Management (UK). He is also a graduate of PMI’s coveted Global Project Management Leadership Development Program (USA). He is currently pursuing his Ph D in the area of “Strategic Project Management Leadership”. He is Certified Cost Consultant (CCC)®, Project Management Professional (PMP)®, and an Associate Value Specialist (AVS)®. He has 28 years of broad-based Oil & Gas, Petrochemical and Power industry experience in Operations and Project Management, and has worked in India, Nigeria, USA, Bahrain, Qatar and Saudi Arabia. He is associated as Projects Director with Kentz Engineering International Ltd, a Multinational EPC company. Mr Pillai has spoken at more than 20 International conferences; organized by OMAINTEC, PMI, IPMA, AACEI, QAI, European Cost Congress to name a few, and was a Keynote & Invited Speaker for many events. He also chaired few international conferences in Project Management and has been a frequent speaker for various professional associations for motivating and inspiring their membership in different areas of professional development. Mr Pillai was awarded the O T Zimmerman Founder’s award by AACEI in 2008 for his contribution to the ‘Global Cost Management Professional Community’, and is a recipient of the Millennium Achiever Award of International Institute of Success Awareness. An ex-member of the international forum of PMI on enhancing the professional certification programs around the world, Mr. Pillai has also served on the nominations committee of PMI for the International Board election. He had served on the International Board of Directors for AACEI and Chaired the International Marketing Advisory Committee of AACEI.

Mr Pillai is elected as the Association's next Vice President (International Regions) covering Asia-Pacific, Europe, Africa and South America; and will be assuming office in June 2014. He currently serves on the Director Board of International Cost Engineering Council (ICEC).

### Session III: ISO Seminar and IEOM Town Hall Meeting

15:45 – 16:15 (Tuesday)



**Ms. Resh Plaha** BSc (Hons), IoD, IRCA, ACQI  
Crystal Quality UK Ltd

#### "The implications of the new ISO 9001: 2015 Standard on Quality Management Systems"

Ms. Resh Plaha sits on the UK's Chartered Quality Institute ISO9001:2015 Review Panel which reports directly into the ISO Geneva Head Office, ISO Technical Committee 176: Quality Management and Quality Assurance. Resh is also a member of the International Register of Certificated Auditors (IRCA) Advisory Panel responsible for providing thought leadership on the development, promotion and publication of audit methodologies, auditor competencies, auditor training and continuous professional development. Resh is a registered Lead Auditor with IRCA and a Member of the Institute of Directors. She is Managing Director of Crystal Quality UK Ltd, a private company offering bespoke project management consultancy and training services to organisations seeking registration to international standards in Quality Management Systems, Environmental, Health and Safety Systems including Food Safety. Major clients include Mercedes-Benz UK Ltd; the Ministry of Defence; Food and Beverage suppliers to Marks and Spencer plc; Central and local UK Government; Aerospace and other capital goods manufacturing organisations. Resh has a wealth of industrial and management experience that spans over 30 years in Quality Management Systems, commencing in the Food Industry before joining SGS, the international leading certification company. She is a highly experienced trainer and international speaker having personally delivered numerous short public IRCA approved training courses to delegates worldwide. Resh has presented at international conferences, delivered entrepreneurial and quality training at Singapore Nanyang Technological University, Hong Kong Polytechnic University and is a guest lecturer at Loughborough University, United Kingdom. She is a strong advocate of women's business roles in society and believes in leading by example.

16:15 – 16:45 (Tuesday)



**Dr. Mohammad Ahsanullah**  
Professor, Department of Management Sciences  
Rider University, New Jersey, USA

#### "Record Values and Their Applications"

**Bio:** Dr. Mohammad Ahsanullah is a Professor of Statistics at the Rider University, New Jersey, USA. He received Ph.D. from North Carolina State University. Dr. Ahsanullah is a Fellow of American Statistical Association, Fellow of Royal Statistical Society and Elected Member of International Statistical Institute. He is Editor-in-Chief of Journal of Statistical Theory and Applications. Dr. Ahsanullah publishes more than thirty books in Statistics and more than three hundred statistical research papers.

16:45 – 17:15 (Tuesday)

#### TOWN HALL MEETING for IEOM Society

Professional Chapters, Student Chapters, Country Representatives and Technical Divisions

## Wednesday (March 4, 2015)

Session V Chair: Dr. Zain Tahboub, Dubai Aviation Engineering Projects (DAEP), UAE

09:45 – 10:15 (Wednesday)



### Dr. Zain Tahboub

VP Research and Strategy / Industrial Engineer  
Dubai Aviation Engineering Projects (DAEP)  
United Arab Emirates (UAE)

“Strategy and competitiveness for aviation engineering projects”

Dr. Zain Elabideen Tahboub got his Ph.D. and M.Sc. in Industrial and Systems Engineering from Ohio State University. Immediately after, he joined hands with three colleagues to form the Industrial Engineering department at the University of Jordan in 1987. He led the M.Sc. program in Engineering Management for several years where it came to become a leading program for the University of Jordan. The graduates of the department became among the most respected and demanded professionals in many positions, Dubai is no exception where a number of IE's are among the top decision makers of the Executive Council and many other government entities. At the same time, he was working with industry in many important programs; he was the Corporate Adviser for Royal Jordanian Airlines 1994-1998 where he helped in the recovery of the Airline to become profitable again. During his work at the University of Jordan, he assumed several roles to bring industry and academia together; he was the director of the Outreach Program, the chairman of the National Committee on Relationship between Academia and Industry which led to forming new partnerships and models in new universities. In 2005, he left the University of Jordan to be the Dean of Majan University College in Oman. In 2009, he joined Dubai Aviation Engineering Projects as Specialist Adviser, then assuming other roles and responsibilities including strategy, research, knowledge management and innovation where he is working on building new concepts and models for innovation. Recently, Zain was an active member in developing Dubai Plan 2021.

10:15 – 11:15 (Wednesday)



### Martin Nazareth

President, OpEx Solutions Inc.  
Round Rock, Texas, USA

Special Talk: Strategy Linked to Mission and Vision is Key to Significant Gains

**Presentation Abstract:** In the midst of a weak global economy, it is imperative to have rapid, significant, and sustainable gains which can only be achieved through a perfect alignment of strategy, mission and vision of the organization. Unfortunately, too many companies are implementing continuous improvement tools that result in mediocre or counterproductive changes. Martin Nazareth will present an industry-independent approach and application that achieves these rapid, significant and sustainable gains through strategic and aligned application of continuous improvement methodologies.

**Bio:** Martin Nazareth, President – OpEx Solutions, is a global consultant in operational excellence involving the strategic application of lean manufacturing (Lean), total productive maintenance (TPM), quality, and industrial engineering (IE). He has led strategic consulting, training and execution at over 100 plants in the USA, Canada, Australia, India, Latin America and Europe. Nazareth's background spans several industries, including automotive, metals and mining, oil and gas, ship building, electrical systems, information systems, and healthcare. Nazareth is the founder of OpEx Solutions. Prior to OpEx Solutions, he was a senior manager for Lean and TPM deployment at Alcoa. He led program quality for all North American programs at Delphi Thermal & Interior. Before Delphi, he consulted through EDS, Tata Consulting Services, and independently. Nazareth successfully led change through four successful corporate- and division-wide initiatives including Lean, TPM, FMEA/PCP and error-proofing at two Fortune 500 companies. Nazareth has two master's in industrial engineering and a bachelor's in mechanical engineering. He is a certified Project Management Professional (PMP) and a Six Sigma Green Belt. Martin Nazareth served on the board of AME's Southwest Region and is a Director of IIE's Lean Division and Industry Advisory Board. With over twenty-five years of professional experience, Nazareth is well recognized for his passion for excellence and strategic execution through accomplishments of flawless new product launches, successful implementation of initiatives and demonstration of bottom-line results.

11:30 – 13:00 (Wednesday)

**WORKSHOP: Smart Manufacturing to Reduce Decision Lead Time****Dr. Rupy Sawhney**

Heath Fellow in Business and Engineering  
 Professor, Industrial and Systems Engineering  
 University of Tennessee, Knoxville, USA

The Center for Productivity and Innovation (CPI) is actively engaged in smart manufacturing, the application of intelligent algorithms to production and manufacturing environments. We have research expertise in analysis of production systems, development of sensing algorithms, and modeling the hierarchy of decision making in an organization. We have leveraged this expertise to develop a new paradigm in decision making, called the right information-right time-right person paradigm. Operational metrics, which improve upon traditional production KPIs, are designed to assess the health of a production system. Computer vision algorithms use information-rich, low-cost imaging technology, resulting in a robust and versatile sensing system for operational metrics. Finally, graph theoretical decision models are used in understanding and improving the flow of information in an organization. The overall effect of such a system is to reduce decision lead times while simultaneously improving production output.

**Bio:** Rupy Sawhney is a Professor & Heath Fellow in Industrial and Systems Engineering at the University of Tennessee, Knoxville. He earned B.S. and M.S. in Industrial Engineering and Ph.D. degrees in Engineering Science and Mechanics from the University of Tennessee, Knoxville in 1981, 1984 and 1991 respectively. He was a Weston Fulton Professor and Department Head during 2010-2013. He is also a faculty for the newly created Center for Interdisciplinary Research and Graduate Education (CIRE) in Energy. His current research focuses on trying to use technology and innovation to enhance organizational productivity. Dr. Sawhney has assembled a team over the past five years that has a greatest critical mass within the history of the Industrial Engineering department to compete with other academic institutions in the lean area. His research group at this moment consists of 40 Postdocs, Ph.D. and Master students. He has published significant journal papers, conference papers and has submitted for 5 patents. He has graduated more than 50 Master's and 8 Ph.D. students. His funded research projects are in the millions of dollars. He has worked with over 200 companies and is a recipient of various awards (Boeing Welliver Fellow, Alcoa Faculty Award, IIE Lean Teaching Award, Reuben Harris Award, and Accenture Teaching Excellence Award).

**Panel Session on LEAN**

**Panel Chair: Dr. Rupy Sawhney**, University of Tennessee, Knoxville, USA  
 14:00 – 15:30 (Wednesday)

**Panel Members****Majid Abab**

Industrial Engineering Manager  
 The Boeing Company  
 USA

Mr. Majid Abab is an Industrial Engineering Manager at the Boeing Company. He has advanced education in the field of industrial engineering and over 36 years of solid industrial engineering experience in the aerospace industry including 30 years in management and leadership roles at the Boeing Commercial Airplane Company. Currently Mr. Abab is leading the BCA core industrial engineering organization supporting the Boeing Enterprise IE community. Responsibilities include developing and deploying process improvements, strategic planning (for utilization, growth and career planning of IE's), strategic staffing, university relations and external technical affiliations, simulation, and process integration initiatives (People, Processes, and Tools). He has served in the various professional board and leading international conferences including Member of the Boeing Enterprise Process Action Team – Leadership, Chair of IIE – IAB (industry advisory board), Chaired many IIE conferences tracks, Current chair of the IIE Annual Conference, A IIE Fellow, Co-Chair of the IEOM conferences, and active member of several universities Industry Advisory Board. Mr. Abab received the IIE-UPS Diversity Award, the Boeing Diversity Award, the Boeing Educational award, the Boeing knowledge sharing award. He is a lifelong mentor and a coach for many universities' students and professional colleagues.



### Dr. Kudret Demirli

Professor & Chair, Industrial & Systems Engineering  
Khalifa University  
Abu Dhabi, UAE

Kudret Demirli received the B.Sc. and the M.Sc. degrees in Industrial Engineering from the Middle East Technical University, and the M.Sc. degree in Operations Research from Cornell University. He received his Ph.D. degree in Industrial Engineering from the University of Toronto. Dr. Demirli started his academic career as an Assistant Professor in the the Department of Mechanical and Industrial Engineering, Concordia University where he became a Professor in 2011. He is currently the Chair of Industrial and Systems Engineering Department at Khalifa University of Science, Technology and Research, UAE. Dr. Demirli has had a number of industrial collaborations with aerospace companies such as Pratt & Whitney Canada, Bombardier Aerospace, Bell Helicopter, and CMC Electronics. Currently he is involved in a CRIAQ Project (Consortium for Research and Innovation in Aerospace in Quebec) in Lean Supply Chain and Operations. His main research focus is in Lean Manufacturing and Supply Chain.



### Ms. Resh Plaha

Crystal Quality  
UK



### Dr. Rupy Sawhney

Heath Fellow in Business and Engineering  
Professor, Industrial and Systems Engineering  
University of Tennessee  
Knoxville, USA

Session VIII Chair: Mr. Shailendra Shukla

15:45 – 16:15 (Wednesday)



### Dr. Mickael Gardoni

Professor and Director, Innovation Management Program  
Engineering Department of Automated Production  
ÉTS Engineering Industry, Québec, Canada  
Acting Director of the PhD School

[New Method of Risks Management for End-Of-Life of Large-Scale Projects: Case of Extraction Projects \[ID 600\]](#)

Dr. Mickael Gardoni is professor and director of the innovation management program at ÉTS (Québec - Canada) and acting director of the PhD school. He was professor at INSA de Strasbourg and INP Grenoble (France) and Co-Director of the "French-Chinese PLM Centre for Innovation" in Tsinghua University, Beijing, China. He is engineer in industrial engineering and has done his PhD in EADS (European Aeronautic Defence and Space Company). His research interests include methodologies of creativity-innovation and knowledge management."

16:15 – 16:45 (Wednesday)



### Shailendra Shukla

Renewable Energy Development Agency  
Govt. of Chhattisgarh & Chhattisgarh Biofuel Development  
Raipur, Chhattisgarh, India

**“Roof top Solar Systems – Best alternative for developing countries”**

**Bio:** Shailendra Shukla is CEO cum Director of Chhattisgarh of Renewable Energy Development Agency (CREDA), Govt. of Chhattisgarh & Executive Director, Chhattisgarh Biofuel Development Authority, India. Mr. Shukla was awarded “ENGINEER OF THE YEAR” by practicing engineer’s welfare association, Chhattisgarh in the year 2005 for outstanding achievement and dedication in the field of engineering for the benefit of the society. He is amongst Four Indians Shortlisted for International level “Zayed Future Energy Prize” a prestigious and internationally recognised award for innovation, performance and leadership in sustainable and renewable energy projects. He attended several international seminars and workshops and presented technical papers in USA, UK, Belgium, Netherlands, Germany, France, Spain, Austria, Australia, Japan, Korea, Singapore, Malaysia, Hong Kong, Thailand, UAE, Kenya, Lithuania, Qatar, Sweden and Finland.

16:45 – 17:15 (Wednesday)



### Ahmed Al-Jabr, CMBB

President, Saudi IEOM Society  
Dhahran, Saudi Arabia

**“Challenges and Opportunities of Lean and Six Sigma for Saudi Industries”**

Ahmed Aljabr is a President of IEOM Society – Saudi Arabian Chapter, as quality engineer and Six Sigma Mater Blackbelt Certified, his experience span most industries and operational areas including working in different successful project, such as working with the International Automotive Components (IAC) to install a solar photovoltaic panel system within their facility, Whitlam Label Company (WLC) to layout the travel distance to minimize the non-value added transportation time on their factory, and Shiloh Industries Inc. through a Six Sigma project with an annual cost savings of over \$500,000, figured how the process was mapped, characterized, analyzed, improved and controlled, and explore which tools were used to quantify the amount of variation within the process as well as the cost of that variation.

He is an expert in the areas of Lean Six Sigma, Continuous Improvement, Quality Management, Lean Manufacturing, Operational Excellence, Optimization, Strategy, Project Management, Supply Chain Management, Public Relation, and Global Leadership. He is an active member of SAE, IIE, ASQ, ASME, LEI, IEOM, and SME. He was a president of the Saudi Student Union at LTU, President of Arab American Association of Engineers and Architects (AAAEA), he received an Exemplary Leadership Award, Best leader of the year from Lawrence Technological University, and Outstanding Leadership Award from Saudi Arabian Cultural Mission, Saudi Embassy at Washington D.C. He has BS in Mechanical Engineering, MS in Manufacturing System Engineering, MS in Engineering Management, and he is PhD Candidate Manufacturing System Engineering at Lawrence Technological University.