

29th Annual National Conference of the American Society for Engineering Management 2008

**West Point, New York, USA
12 – 15 November 2008**

ISBN: 978-1-61567-058-1

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2008) by the American Society for Engineering Management
All rights reserved.

Printed by Curran Associates, Inc. (2009)

For permission requests, please contact the American Society for Engineering Management
at the address below.

American Society for Engineering Management
614 Pine Street, Suite 206B
P.O. Box 820
Rolla, Missouri 65402-0820

Phone: (573) 341-2101
Fax: (573) 364-3500

asemmsd@rollanet.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Engineering Entrepreneurship: The Key to the Future	1
<i>V.K. Mani</i>	
The Necessity of Educating Undergraduate Engineering Students in the Development of Intellectual Property (I.P)	10
<i>S.J. Gandhi, D.N. Merino</i>	
Adapting High Performance Team Techniques to Product Development Teams	21
<i>D.M. Russell, R.A. Carroll</i>	
A Methodology to Evaluate Employee Work-Life Balance through Focus Groups and Surveys	30
<i>S. Salaskar, A. Samson, S. Wang, K. Srihari</i>	
A Systems Approach to Risk Management	39
<i>N.A. Minami, S. Madnick, D. Rhodes</i>	
Quality in Call/Contact Centers	45
<i>V. Adewar, E. Cudney, D. Drain</i>	
Work Engagement: A Measure of Employee Motivation and Well-being in a Healthy Workplace	53
<i>M. Antonison, A. Morris, S. Gholston</i>	
A Systematic Perspective of R&D and Innovation "Functions"	63
<i>B.Y. Calida</i>	
Project Management Requirements for Engineering Graduates for the Minerals Industry	71
<i>C. Wright, L.A. Stauffer, J. Stearns</i>	
Developing a Standardized Utility Assessment Tool Using Six Sigma Principles	79
<i>E.L. Matson, L.A. Stauffer</i>	
How a Quick Reaction Capability (QRC) Program Can Utilize Systems Engineering (SE) to Improve Performance and Customer Satisfaction	90
<i>C. Roberts, W.J. McFadden II</i>	
Modeling Emergency Response: A Case Study	101
<i>S.L. Murray, K. Ghosh</i>	
A Systems Engineering & Strategic Project Management Process in Support of Modeling and Simulation Federations	108
<i>T.G. Litwin, R.H. Kewley, A. Tolk, R.E. Landaeta</i>	
The Necessity Of Educating Undergraduate Engineering Students in the Development Of Intellectual Property (I.P)	115
<i>S.J. Gandhi, D. Merino</i>	
Enhancing the Productivity in a Dynamic Environment – A Case Study in an Automotive Sensor Manufacturer	121
<i>S. Wang, C. Wu, K. Srihari, J. Mullane</i>	
An 'E-order Reconciliation Management System' in a Server Manufacturing Environment	130
<i>J. Garzon, S. Ramakrishnan</i>	
Wind Farm Project at West Point: Is it Economically Feasible?	137
<i>N.D. Bastian</i>	
Beyond Cybernetics (Risk Mitigation for a "Flat Earth" Information Milieu)	143
<i>M.L. Simpson Jr.</i>	
Agent-Based Modeling and Possible Implications on Management and Engineering Management	152
<i>I. Bozkurt, J.J. Padilla, A.A. Sousa-Poza</i>	
The Need for Biomedical Engineering Managers	159
<i>M. Brunkhorst, D. Myers, W. Daughton</i>	
A Technical and Economic Perspective on Single Walled Carbon Nanotubes Bulk Fabrication and Mass Application Feasibility	164
<i>J. Calvo-Amodio, M.G. Beruvides</i>	
Challenges in Managing Emergency Planning in Local and Regional Government	170
<i>A.M. Jackman, M.G. Beruvides</i>	
Defining and Assessing Key Practices in the Effective Use of Performance Measurement Systems: A Case Study	175
<i>P. Chearskul, W.J. Glover</i>	
Employee Retention and Motivation in High Tech Huntsville Companies	185
<i>P.J. Compton, D.R. Miller</i>	
Mixed Duopolies and the Welfare to the Society: A Systems Approach to the Economics of Duopolies	193
<i>M.G. Beruvides, A.E.C. Franco, V. Kalashnikov</i>	

Systems Engineering Education: Addressing the Needs of Working Engineering Via a Distributed Curriculum.....	199
<i>R. Crockett, K. Colvin, J. Shrater</i>	
Decision Making: Evaluating Systems through Flexibility	205
<i>C.H. Bachmann, D.H. Rhodes, M.J. Kwinn Jr.</i>	
Decision Modeling and its Application to Major League Baseball Pitcher Substitution	212
<i>N.M. Scala</i>	
Differences in the Performance of Knowledge Transfer Across Projects: A Study of Gender and Role of Key Project Stakeholders.....	218
<i>R.E. Landaeta, C. Vergopia, R.N. Diaz</i>	
Toward a More Uniform Engineering Management “Body of Knowledge”	226
<i>B.L. Dow Jr.</i>	
The Use of Quality Function Deployment Techniques to Reshape a Supply Chain Management Course.....	230
<i>C.G. Downing</i>	
Engineering Economics and Time-valued Risk: Towards More Sustainable Risk Management	240
<i>C.A. Pinto, A. Pathak</i>	
Engineering Management Education: "What is Best?"	247
<i>M.F. Dabkowski, S.T. Crino, D.kk. Korycinski</i>	
Engineering Management Training and Certification	254
<i>S.B. Bawden</i>	
Evaluating Attributes of Business Agility for a Service-oriented Organization	259
<i>A. Ganguly, D. Henry, J.V. Farr</i>	
Evaluating Multi-Characteristic Products through an Integrated Capability Index.....	269
<i>E. Cudney, M. Joshi</i>	
Evaluation on Quality and Reliability of Single-sided and Double-sided Solder Joint	274
<i>G. Wu, X. Huang</i>	
Innovation and Technology Clusters: Insights from NJ and TX.....	280
<i>M.H. Fallah</i>	
Cross-Campus Entrepreneurship.....	290
<i>J.A. Delos Rios-Hurtado</i>	
Maintaining an Efficient Workforce through Innovative Resource Deployment Methodologies.....	298
<i>C.T. Foltz, S. Ramakrishnan, W.A. Boldrin</i>	
Assessing the Maturity of the Kaizen Event Research Stream	306
<i>W.J. Glover</i>	
Qualitative Analysis of Contributors and Obstacles to Kaizen Event Success: A Preliminary Analysis of Team Member Perceptions.....	316
<i>B.E. Devens, W.J. Glover, W. Liu</i>	
Defining and Categorizing Hand-off Points for the Service Domain.....	322
<i>S. Ramakrishnan, S. Kumaran, H. Chang, N. Kulkarni, K. Srihari</i>	
Synthesized Probabilistic and Non-probabilistic Analysis Technique: A Research Proposal.....	330
<i>P.T. Hester, K.M. Adams</i>	
Identifying Perceived Barriers to Lean Implementation in Knowledge Work.....	337
<i>S. Makor</i>	
Improving Tactical Knowledge Transfer During Full Spectrum Operations: Applying the Systems Decision Process to Determine Handheld Technologies Requirements at the Brigade Combat Team Level.....	343
<i>M.J. Distefano, P.T. Krattiger</i>	
Integrating Real Options with Decision Trees & Simulation: Uncertainty in the Graduate Engineering Economy Course.....	352
<i>N.A. Lewis, T.G. Eschenbach, J.C. Hartman</i>	
Critical Success Factors for NASA Small Business Innovation Research, a Proposal.....	360
<i>C.A. Ise, D.D. Tippet</i>	
System of Systems Analysis of Aircraft Carrier Strike Group Information Exchange: A Literature Review.....	370
<i>A. Martin, R. Slocum, K.M. Adams</i>	
Paradoxes in the Engineering of Complex Systems of Systems	381
<i>C.B. Keating</i>	
Managing Hospital Relocation from an Industrial Engineering Perspective	390
<i>W. Su, S. Wang, M.T. Khasawneh, T. Gandhi</i>	

Knowledge Workers and Managements Perceptions of Organizational Culture, Leadership Style and Individual Commitment and their Impact on Organizational Outcomes in Technology-Driven Organizations	398
<i>T. Maddox, E. Roper, P. Farrington</i>	
Organization Development and Change through Multi-method Action Research	407
<i>G. Letens, E.M. Van Aken, J.A. Farris, A. Heene, J. Leysen</i>	
Location, Location, Location: Does the Relationship Between Knowledge Sharing Behavior and Organizational Commitment Depend on where Engineers are Surveyed?	417
<i>D.A. Howell</i>	
Maintaining the Continuity of Knowledge in a Major Multi-decade Project	427
<i>W.L. Tamosaitis, D.D. Tippett</i>	
System of Systems Case Study: The Ballistic Missile Defense System	434
<i>D.M. Legowik, W.J. McFadden II.</i>	
Optimizing Data Center Redundancy Using a Multiple-criteria Decision Making Approach	443
<i>D.N. Merino, A. Ganguly</i>	
The Faces of Innovation in Competitive Races	450
<i>R. Miller</i>	
Engineering Leadership: Lessons Forged Under Fire	471
<i>N.A. Minami</i>	
Minimizing Risk of Earnings Surprise in Accrual Estimation	476
<i>N. Kulkarni, P. Tsai, M. Testani, S. Ramakrishnan, K. Srihari</i>	
A Systematic Approach to Project Portfolio Selection for Economic Development in Municipalities: A Case Study in Vienna, Missouri	482
<i>S.L. Murray, A. Alpaugh</i>	
How do Engineering Managers Teach Engineering Economy?	490
<i>H. Nachtmann, K.L. Needy, J. Lavelle, T. Eschenbach</i>	
Workplace Safety Culture: A Conceptual Model	494
<i>E. Ng</i>	
Assessing the Effectiveness of Toastmasters International's Leadership Educational Program	500
<i>M. Del Carmen Temblador, E. Ng, N.M. Waters</i>	
Managing Projects through Systems Engineering Methodologies	505
<i>S.P. Philbin</i>	
The Search for Metrics that Measure Up: Do Successful Government Organizations Maintain and Track Common Metrics?	516
<i>S.F. Pierce, D.D. Tippett</i>	
Pitfalls in Evaluating Project Managers Using Budget Performance	526
<i>D. Kennedy</i>	
Predicting the Food Self-Sufficiency Ratio using T-Methods	533
<i>P. Shah, E. Cudney, H. Shibano, V. Jikar</i>	
Problem-solving Methods in a Globally Integrated Enterprise	539
<i>R. Orth, S. Ramakrishnan, M. Testani, D. Hare</i>	
R&D Governance: Structuring the R&D Enterprise	545
<i>C.B. Keating, K.M. Adams, L. Magpili, B. Calida</i>	
A Case Study in Implementing a System Maturity Metric	555
<i>B.J. Kober, B. Sauser</i>	
The Workforce Again Management Program Initiative Addressing Technological Workforce Demographics	563
<i>G.A. Sedrick, D. Jackson</i>	
Quality Measures for the Healthcare Supply Chain	569
<i>B.K. Smith, H. Nachtmann, E.A. Pohl</i>	
Development of a Capstone Course for an Undergraduate Engineering Management Degree	574
<i>A.F. Whittemore</i>	
Survey of Critical Factors for Success in Six-Sigma Implementations	580
<i>B. Baliga, S. Mazra, J. Byun, R.J. Murphy</i>	
Does a Relationship Between Employee Performance and Organizational Commitment Exist? Yes Indeed!	587
<i>W.L. Tamosaitis, D.D. Tippett</i>	
Symbiosis of Leadership Styles	597
<i>M. Del Carmen Temblador, M.G. Beruvides</i>	
A Further Exploration of Technorganic Symbiosis in Organizations	604
<i>M.G. Beruvides, M. Del Carmel Temblador</i>	

Lean Six Sigma and Corporate Culture: Path Forward is Empowering IBM Organizations to Create and Sustain Meaningful Change	609
<i>M.V. Testani, D. Hare, D. Orth, S. Ramakrishnan</i>	
Building High-performance Teams in Technology-intensive Environments	615
<i>H.J. Thamhain</i>	
Rural Transit Regional Maintenance Center Economic Modeling	625
<i>M.G. Beruvides, J.L. Simonton, E. Ng, S. Chaivichitmalakul, N.M. Waters</i>	
Traffic Incident Management: Best Practices for Interagency Coordination	630
<i>C.I. Eseonu, R.G. Feyen</i>	
Using a Multiple Criteria Approach for Ranking Outsourcing Risks	635
<i>A. Ganguly, S.J. Gandhi</i>	
Using Data Envelopment Analysis to Analyze Contingency Effects in Kaizen Events: A Preliminary Investigation	645
<i>W. Liu, J.A. Farris</i>	
Group Development: A Review of Recurring Cycle Models	655
<i>S.E. Brown, D. Utley</i>	
Predicting Performance of a Lunar Exploration Transportation System Team Using Teaming Theory	665
<i>N. Duffell, M. Feldmeier, J. White, S. Brown, D. Utley</i>	
Telecommuting: The Good, the Bad, and the Ugly	675
<i>A.H. Kissell, D.R. Utley</i>	
CPK Initiative: Striving for Better Process Control	681
<i>J.N. Williams</i>	
Improving IT Governance and Service Process Quality in E-Government Using Six Sigma and Cobit	691
<i>W.Y. Dong, R.D. Satria</i>	
Reliability Life Test Method Impacting on New Electronic Product Introduction Processes	698
<i>G. Wu</i>	
2008 Survey of Engineering Management Programs	704
<i>D.A. Wyrick, A. Cisse</i>	
A Baseline Survey of Second Life® in Entrepreneurship Education	713
<i>D.A. Wyrick, A. Cisse</i>	
Development of a Capstone Course for an Undergraduate Engineering Management Degree	719
<i>A. Whittemore</i>	
Case Study on a System of Systems: The Ballistic Missile Defense System (BMDS)	727
<i>D.M. Legowik</i>	
Optimizing Data Center Redundancy Using a Multiple-criteria Decision Making Approach	739
<i>D.N. Merino, A. Ganguly</i>	
Author Index	