

55th Annual Meeting of the AACE International 2011

The Authority for Total Cost Management

**Anaheim, California, USA
19-22 June 2011**

Volume 1 of 2

ISBN: 978-1-61839-367-8

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© (2011) by AACE International, the Authority for Total Cost Management
All rights reserved.

Printed by Curran Associates, Inc. (2012)

For permission requests, please contact AACE International, the Authority for Total Cost Management at the address below.

AACE International, the Authority for Total Cost Management
209 Prairie Avenue, Suite 100
Morgantown, WV 26501-5934 USA

Phone: 800.858.COST(2678) | +1.304.296.8444
Fax: 1.304.291.5728

www.aacei.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

VOLUME 1

BUILDING INFORMATION MODELING (BIM)

BIM-515 Cost Savings Achieved Through Changing Processes for Cost Estimating in Building Information Modeling	1
<i>Tamera L. McCuen, Carla Lopez del Puerto</i>	
BIM-555 BIM and Quantity Estimates During the Construction Process	11
<i>Pavan Meadati, Soubhagya Purnima Nelabhotla</i>	
BIM-731 BIM, Sustainable Construction, and Integrated Approaches to Project Delivery	28
<i>Tamera L. McCuen</i>	
BIM-751 Building Information Modeling (BIM) - Designing a Comprehensive & Interpretive Database	37
<i>Philip D. Larson</i>	
BIM-760 The Fifth Dimension of BIM - Cost Estimating	46
<i>Jignesh S. Shah</i>	

CLAIMS AND DISPUTE RESOLUTION (CDR)

CDR-493 Forensic Schedule Analysis: Example Implementations, Part 2	59
<i>Mark C. Sanders</i>	
CDR-501 Understanding Change of Scope Effects on DBB Projects Using Systems Thinking	99
<i>Stephen P. Warhoe, Paul D. Giammalvo</i>	
CDR-521 Constructive Acceleration - A Global Tour	113
<i>James G. Zack Jr.</i>	
CDR-533 A Call to Sustainable Prevention, Maintenance and Dispute Resolution Practices	131
<i>Adam C. Lott</i>	
CDR-542 Bringing Home the Bacon - Overhead Calculations and the Law	142
<i>Kathleen M. J. Harmon, Kathleen O. Barnes</i>	
CDR-609 Offsetting Delays - The Owners Friend	156
<i>John C. Livengood</i>	
CDR-626 Claims Challenges in a Multi-Contract EPC Construction Project	170
<i>Makgopa Mabelane</i>	
CDR-635 Can a Subcontractor Really Have a Critical Path Delay when the GC Does Not?	181
<i>Christopher W. Carson, Mark Boe, Shannon L. Campbell</i>	
CDR-637 Use of a Claims Triage Workshop to Choose an Analysis Method	194
<i>Robert D. Kelly, Robert D. Kelly Jr., Christopher W. Carson</i>	
CDR-645 That's Not a Change! Then What is a Change? - A Case Study Examination of What Constitutes a Change on a Project	205
<i>Gordon R. Lawrence</i>	
CDR-683 The Value of Damages: More Than Cost Impacts	215
<i>Jack W. Harris, Sonia Desai</i>	
CDR-689 The Streamlined Expert Report: Structure of Expert Report for Forensic Schedule Analysis	227
<i>Kenji P. Hoshino, Kelly R. Wallace</i>	
CDR-726 Experts in "Jeopardy" - The Claims Game Show	238
<i>Thomas F. Peters, John C. Livengood, Christopher W. Carson, Kenji P. Hoshino, Christopher J. Brasco, Christopher M. Anzidei</i>	

COST AND SCHEDULE CONTROL (CSC)

CSC-495 Critical Path Method (CPM) Scheduling From a Junior Scheduler's Perspective	248
<i>Matt Marzilli</i>	
CSC-514 Hazardous Waste Cost Control Management	256
<i>Richard A. Selg, William E. Kraus</i>	
CSC-519 A Simple Qualitative Approach for Schedule Risk Analysis	275
<i>Sriram Ramdass, Jihwan Lim</i>	
CSC-537 Cost and Schedule Analysis of Refinery Turnarounds	286
<i>Matthew T. Reiland, Stephen A. Busick</i>	

CSC-554 Pricing Projects in the Hyper-Competitive 2011 Market	302
<i>Michael D. Dell'Isola</i>	
CSC-558 Currency Fluctuation and Inflation Impact on International Mega-Projects: A Mexican Case Study	318
<i>Carla Lopez del Puerto</i>	
CSC-580 Cause and Effect: How Schedule Acceleration Affects Productivity	327
<i>Matthew Christopher Baker</i>	
CSC-606 Increasing Project Controls Impact on a Successful Project	338
<i>David A. Lucas</i>	
CSC-607 Practices in Construction Change Order Management	350
<i>Joseph J. Egan, Joseph E. Seder, Dayna L. Anderson</i>	
CSC-648 Cost Control and Earned Value to Improve Project Performance	362
<i>Hedvig Dybdahl, Hilde Sandstad</i>	
CSC-667 The Role of Construction Cost Auditing within Project Controls	378
<i>Jake Ortego, Antonio Fratangelo</i>	
CSC-687 LEED v3 as it Relates to Cost Estimating and Scheduling	389
<i>Aaron M. Roche</i>	
CSC-693 Engineering Development, Control & Performance Benchmarking - Lessons Learned Study	400
<i>Rashad Z. Zein</i>	
CSC-734 Analysis of Producer Price Index as an Adjustment Index	430
<i>Sevcian Agdas, Eileen R. Pesantes-Tavares, Duzgun Agdas, Ralph D. Ellis Jr.</i>	
CSC-775 Benchmarking Project Schedules	447
<i>Dan Patterson</i>	
CSC-803 Change Control That Saves Big Bucks	461
<i>Dave Draper</i>	

PROFESSIONAL DEVELOPMENT (DEV)

DEV-756 AACE Certifications at a Glance	473
<i>Valerie G. Venters, Dan J. Demangos, Bernard A. Pietlock</i>	

ESTIMATING (EST)

EST-481 Mr. Owners Estimate is not Satisfactory - Why Not?	487
<i>William E. Kraus</i>	
EST-491 Cost Estimation Challenges and Uncertainties Confronting Oil and Gas Companies	504
<i>Nicolas Alexander Hall, Sarah Delille</i>	
EST-517 DACE Labor Productivity Norms - The New "Gulf Coast"?	519
<i>Martin S. J. van Vliet</i>	
EST-518 Lump Sum Contracting in Alberta Oil and Gas Industry	547
<i>Jacqueline E. O'Toole, George F. Jergeas</i>	
EST-562 Maintaining a Cost Database Using SCCS (Norway)	577
<i>Jens P. Thoresen</i>	
EST-604 Document Project Readiness by Estimate Class Using PDRI	588
<i>Syed H. Zaheer, Craig Fallows</i>	
EST-612 Cost Estimating Process and Quality Assurance	605
<i>Susanna Bedarida, Stefania Conti</i>	
EST-664 Simple, Probabilistic ROM Estimates	613
<i>George A. Whyte, Kofi Adomako-Arhin</i>	
EST-691 Weathering the Storm: The US Construction Sector through the Recession	629
<i>Basil P. Alexander, John E. Mauk</i>	
EST-771 Developing and Calibrating a Cost Estimating Toolset: An Owner's Experience	640
<i>Brent Kitson</i>	

EARNED VALUE MANAGEMENT (EVM)

EVM-476 Revenue Recognition Methods and Cost Control through Earned Value Management (EVM)	652
<i>Francisco Javier Rodriguez Blanco</i>	

VOLUME 2

EVM-520 Transforming Earned Value Management through Systems Integration	672
<i>Mark E. Plemmons, Tammi R. Hodges</i>	
EVM-611 So What Do The EV Metrics Mean Anyway?.....	681
<i>Robin A. Watenpaugh</i>	
EVM-622 Preparing for a Successful EVMS Certification	691
<i>Sheri L. Crowe, Amy D. Basche</i>	
EVM-630 Cost and Schedule Control at the Enterprise Level	702
<i>John C. Philbrick</i>	
EVM-642 Evaluating Earned Value Performance Against Early and Late CPM Dates	712
<i>Steven W. Wageman</i>	

GLOBAL PROJECTS (INT)

INT-492 Integrated Project Controls for Today's Mega-Projects.....	724
<i>Mark C. Sanders, Ronald P. Pacitti</i>	
INT-568 Alliance Contracting New Zealand Style.....	743
<i>Eric Scheepbouwer, Jennifer S. Shane, Douglas D. Gransberg</i>	

IT/IM IN PROJECT AND COST MANAGEMENT (IT)

IT-721 Case Study: Automation and Standardization for a Public Utility	752
<i>Mario Acevedo</i>	

OWNER ISSUES (OWN)

OWN-490 The Inadequacy of Publicly-Funded Construction Program Audits.....	764
<i>Alexia A. Nalewaik</i>	
OWN-503 The Owner's Project Control Function	781
<i>Stephen L. Cabano, Paul G. Williams, Robert C. Mathias</i>	
OWN-547 Building Owner's Cost Engineering Organizational Capability.....	795
<i>Rod Knoll, Tim Mitchell, Earl J. Seabrook III</i>	
OWN-548 Infrastructure Asset Management and the Prospective TCM Role	806
<i>Mustafa A. Mukhtar</i>	
OWN-718 The Great Divorce: Cost Loaded Schedule Updating.....	819
<i>John P. Orr</i>	
OWN-767 Transparency: Lessons Learned (The Hard Way) on Project Controls	833
<i>John J. Ciccarelli, Michael J. Bennink</i>	
OWN-770 Define Your Project - Reduce the Risk	849
<i>Ray S. Philipenko, Jayant N. Acharya, Prashant Srivastava</i>	
OWN-772 Taking a Project Knowledge Management System (PKMS) to the Next Level.....	865
<i>F. Cristina Figueiredo, Ray S. Philipenko</i>	
OWN-802 Cost Engineering Maturity Model	884
<i>H. Lance Stephenson</i>	

PROJECT MANAGEMENT (PM)

PM-472 4D/5D BIM, JOC, IPD - Why the AEC Industry Must Change.....	927
<i>Peter Nicholas Cholakis</i>	
PM-500 Cost Risk Classification During FEL Phase.....	940
<i>Craig Relyea, Glenn M. Bordelon</i>	
PM-502 Project Management Maturity and Project Management Success - Analyzing Parallels	959
<i>Jan Christoph Albrecht, Rao Aamir Khan, Konrad Spang</i>	
PM-508 Project Management - Diversity and Organization Success	972
<i>Kul B. Uppal</i>	
PM-536 Successful Project Execution through an Integrated EPC Delivery Approach.....	982
<i>Robert D. Walden, Hassan Ali Halepota, Fereshteh Khoramshahi</i>	
PM-697 Real-Time Data Using Ipad® and MR-1® Computers on Construction Projects	995
<i>Michel Guevremont, Chantale Germain</i>	
PM-725 Preconstruction Phase Risk Assessment for GMP Contracts	1008
<i>Mark P. McDowell</i>	

PM-727 Improving Project Predictability with the application of Critical Project Governance Structures	1023
<i>Jason R. Kean</i>	
PM-748 Where is Project Delivery Headed?	1036
<i>John R. Spittler, Eric L. Nelson</i>	

PLANNING AND SCHEDULING (PS)

PS-478 Microsoft Project® for Construction Schedulers.....	1049
<i>F. Burak Evrenosoglu, Ronald M. Winter</i>	
PS-480 Lessons Learned - Schedule Updating and Maintenance using Primavera P6™	1070
<i>Hannah E. Schumacher, Charlie Jackson</i>	
PS-487 Scheduling for Subcontractors	1086
<i>Ronald M. Winter</i>	
PS-489 AACE Recommended Practice 55R-09: Analyzing S-Curves	1095
<i>Jeff Goodman</i>	
PS-610 Cost-Time Trade-Off Utilizing PERT/CPM Analysis.....	1111
<i>Aldo D. Mattos</i>	
PS-633 Improving Industry Planning by Classification of Schedule Types.....	1129
<i>Christopher W. Carson, Raf Dua</i>	
PS-634 Pipeline Construction Scheduling - Bar Charts to Linear Schedules	1142
<i>Gregory A. Duffy</i>	
PS-639 The Great Debate: Should Weekly Job Planning Be Done Through The Project Schedule Or An Onsite Method?	1155
<i>Christopher W. Carson, Mark C. Sanders, Carmelita L. Thorndike, Mark F. Nagata</i>	
PS-671 A Case Study Comparison of Microsoft Project & Primavera Project Manager 6.....	1166
<i>Carmelita L. Thorndike, Owen T. Searls</i>	
PS-705 Construction Phasing and Delay Remediation	1177
<i>Win G. Li, Jimmy Suarez</i>	
PS-709 Ten Things to Consider Before Starting Your Next Schedule	1197
<i>Katharyn M. Getchell</i>	
PS-729 Panel Discussion: A New Scheduling Paradigm Challenges Implementing Primavera P6™	1208
<i>Thomas I. Ross, Julie K. Owen, Bryan Payne, Joanne Schultz, Brian Criss</i>	
PS-749 Optimization of Activity Crashing and Overlapping in Schedule Compression	1217
<i>Kamran Hazini, Reza Dehghan, Janaka Y. Ruwanpura</i>	
PS-766 Predictive Risk Indicators for Construction Project Schedules	1228
<i>C. Douglas Kinard III</i>	

DECISION AND RISK MANAGEMENT (RISK)

RISK-475 The Law of Large Numbers vs. Cost Risk Models.....	1238
<i>Christopher P. Caddell</i>	
RISK-496 Top Risks to Project Cost and Schedule	1249
<i>James D. Whiteside II</i>	
RISK-530 Managing the Impact of Change in the World of Major Capital Projects.....	1267
<i>Ritchie Anderson, Clare Colhoun</i>	
RISK-535 Managing Stakeholder Opposition to Capital Projects	1278
<i>George Angerbauer, G. Rock Spencer</i>	
RISK-594 Mitigating Project Risk through Escrow and Funds Control	1298
<i>Ron F. Cagle</i>	
RISK-735 Economic Risks to Consider Before Bidding Your Next Contract	1313
<i>Laura Hodges, Paul Robinson</i>	
RISK-744 Cost-Effective Safety Inspections & Safety Training.....	1325
<i>Neil D. Opfer, David R. Shields</i>	

Author Index